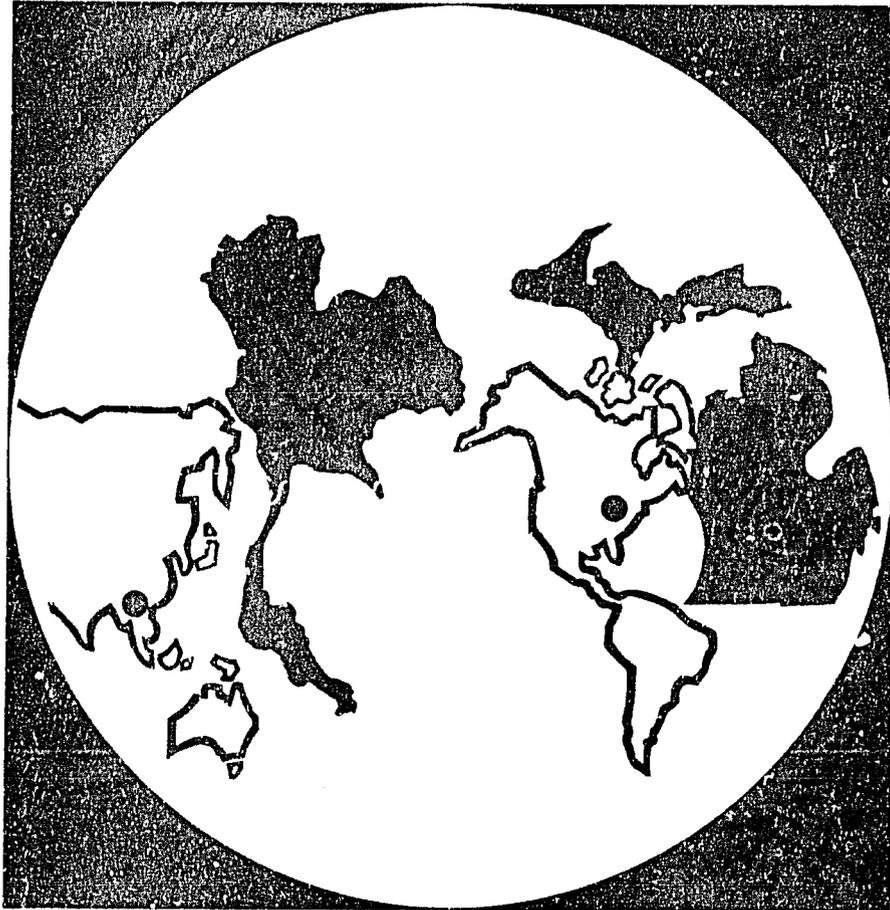


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THE DIFFUSION OF AN INNOVATION IN THREE MICHIGAN HIGH SCHOOLS: INSTITUTION BUILDING THROUGH CHANGE

BY NAN LIN, DONALD J. LEU, EVERETT M. ROGERS, AND DONALD F. SCHWARTZ



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IN THREE MICHIGAN HIGH SCHOOLS: INSTITUTION
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By

Nan Lin, Donald J. Leu,
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SUMMARY AND IMPLICATIONS

The intent of this study was to examine the process of innovation assimilation by teachers in three Michigan high schools. The study differs from other investigations of educational innovation diffusion in utilizing the individual teacher, rather than the school system, as the unit of analysis.

The major findings are as follows:

I. The earlier in time teachers became aware of an educational innovation, the more likely they were to:

- . be older (0.24)¹
- . think the faculty of their school was very cohesive (0.23)
- . feel they knew a great deal about the innovation (0.23)
- . think the principal frequently discussed their teaching performance with them (0.22)
- . have more years of education (0.22)
- . have discussed the innovation with fellow teachers (0.20)
- . have higher teaching salaries (0.18)
- . not communicate frequently with fellow teachers about general school matters (-0.20)
- . not feel that student reactions to an innovation should be an important determinant of whether or not the school adopts it (-0.30)

II. The more favorable teachers' attitudes were toward a school-adopted innovation, the more likely they were to:

- . feel students benefited greatly from the innovation (0.60)
- . feel their students liked the innovation (0.40)
- . feel they knew a great deal about the innovation (0.37)
- . think the superintendent favored the innovation (0.28)
- . think other teachers seek their opinions on educational matters (0.27)
- . belong to several organizations (0.26)
- . discuss the innovation with fellow teachers (0.25)
- . have more years of education (0.25)
- . read a number of professional journals (0.22)
- . know what was going on in local and state educational activities (0.21)
- . have high non-teaching income (0.21)
- . think they are good teachers (0.20)
- . have personal opinion leaders who favor the innovation (0.20)

¹Numbers in parentheses indicate the magnitude of relationship (correlation) between variables. See Appendix A for a complete summary of the findings.

- . think the principal thinks they are good teachers (0.19)
- . consider the principal a good source of information (0.19)
- . think they play a meaningful part in school problem-solving and decision-making (0.18)
- . know quite accurately how their school was using the innovation (0.18)

III. The more generally predisposed teachers were to accepting change and innovation in the school, the more likely they were to:

- . feel students benefited greatly from the innovation (0.55)
- . think their principal also accepted change easily (0.42)
- . feel they knew a great deal about the innovation (0.30)
- . be more satisfied with their job (0.28)
- . think they play a meaningful part in school problem-solving and decision-making (0.27)
- . feel most other teachers in the school feel close to the principal (0.26)
- . think that the principal frequently discussed their teaching performance with them (0.26)
- . feel their students liked the innovation (0.24)
- . be younger (0.23)
- . be open-minded (as measured by the dogmatism scale) (0.23)
- . think the faculty of their school was very cohesive (0.23)
- . consider the principal a good source of information (0.20)
- . feel personally close to the principal (0.19)
- . not be considered opinion leaders on educational matters by their fellow teachers (-0.18)
- . not be considered respected teachers in the community by their fellow teachers (-0.20)

Tentatively, a few practical implications for furthering the acceptance of school-adopted innovations among teachers may be drawn from this study.¹

1. It appears important that teachers feel they have adequate information about the innovation. Student benefits from the innovation seem an especially important consideration from the teachers' viewpoint. Other information important to the teachers is how enthusiastically the superintendent supports the innovation and exactly how the school is using the innovation.

2. To transmit this information to teachers it would appear useful to encourage discussion of the innovation among the teachers. Special effort should be made to develop positive attitudes toward the innovation among teachers in the school who are looked to for information and advice by other teachers. Effort should be made to enhance the credibility of the principal as a source of information.

¹Naturally, a number of conditions must be imposed upon the generalizability of these implications. For more complete understanding of the exact nature of this study, the reader is encouraged to peruse the entire report.

3. Teachers should be encouraged to read professional journals, to keep abreast of local and state educational activities, and to continue their own education by enrolling in advanced study.

4. School principals should be encouraged to relay evaluations of teaching ability to teachers and to involve them in school problem-solving and decision-making.

5. Effort should be made to develop positive student attitudes toward the innovation as teachers' perceptions of student attitudes are related to acceptance of the innovation.

The findings indicated no single factor exclusively related to innovation assimilation by teachers; rather a profile of variables were related to assimilation of an innovation in these schools.

PREFACE AND ACKNOWLEDGEMENTS

This publication reports the pilot study for a cross-cultural investigation of the diffusion of educational innovations. The investigation was made possible through the sponsorship of the Michigan State University, the United States Agency for International Development and the Inter-University Research Program in Institution Building (Pittsburgh Consortium), and served as part of the research program of the Michigan State University-Thailand Educational Planning Project. Another publication reporting the results of the major investigation (Diffusion of Educational Innovations in Thailand) will be available in 1967.

There were two overall purposes for the investigation: (1) to contribute to the development of theoretical understanding of the diffusion process in an institutional setting; (2) to provide information of pragmatic value for educational planners, administrators and change-agents.

The Michigan pilot study provided data for two theses: Nan Lin, "Innovation Internalization in a Formal Organization," (Ph.D. dissertation) and Natalie Sproull, "Self-Concept, Perceived Evaluations and Change Orientation of Secondary School Teachers," (B.A. thesis) both in the Department of Communication, Michigan State University, 1966. The reader interested in more detail on the theoretical rationale for the study and for construction of the scales is referred to these papers.

Many persons contributed to the pilot study. We would like to express our sincere thanks to the superintendents, principals and teachers in the high schools studied whose cooperation made this study possible. Special gratitude also goes to Mrs. Natalie Sproull and Fredric J.

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The viewpoints expressed in this report are entirely those of the authors and do not necessarily reflect the position of the sponsors of the project.

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AN INVESTIGATION OF THE DIFFUSION OF AN INNOVATION
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By

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Everett M. Rogers, and Donald F. Schwartz¹

CHAPTER I

INTRODUCTION

Previous Research

This was a study of innovation diffusion in three Michigan high schools focusing on the process of innovation assimilation² within the schools.

It is generally thought that institution building³ is a many-faceted process and that one of the most effective ways to achieve it is

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²Innovation assimilation is defined as the extent of integration of an innovation or change in a defined social system or institution.

³Institution building is defined as the planning, structuring, and guidance of new or reconstituted organizations which: (a) incorporate, foster, and protect normative relationship and action patterns, (b) perform functions and services which are valued in the environment, and (c) facilitate the assimilation of new physical and social technologies. This definition is taken from: Inter-University Research Program in Institution-Building, "Description of the Research Program," Pittsburgh, University of Pittsburgh, Graduate School of Public and International Affairs, 1964.

through the introduction of innovation and change. The dynamic aspects of change keep the institution¹ in a state of self-evaluation, self-improvement, and self-maintenance, thereby avoiding motionless equilibrium which is a sign of decay (Allport, 1964).

Comparatively speaking, educational change is much slower than change in agriculture or medicine (Miles, 1964; Rogers, 1965). Several reasons why educational change is slower can be posited: (1) as a formal organization, an educational system is relatively less receptive to change (Griffith, in Miles, 1964, p. 425); (2) retraining of teachers for a change can be rather costly; (3) maintaining some stability of social relationships and functional procedures in a school is frequently important. Nonetheless, pressures for educational change became accentuated following 1957 when public reaction to the Soviet Union's space achievements forced leaders concerned with education to consider ways to effect widespread change.

Although improved² practices and innovations are desirable, there is no guarantee that the diffusion of an educational innovation will be a smooth, successful process. How can an innovation be introduced so that it will be maximally accepted by teachers? In reviewing the literature on educational change, it became obvious that evidence on this problem was inadequate. The few available studies dealt mainly with the

¹Institution, formal organization and system are used equivalently throughout this report.

²Unfortunately, the label, "innovation," is sometimes assumed to automatically imply an improved practice. Rogers (1965) and others (e.g., Changing Times, 1966, pp. 6-10) have cautioned against assuming that innovations have no deteriorative side-effects. The present investigators do not intend to imply blanket approval of all new ideas and practices in education. These judgements are more appropriately within the domain of other educational researchers and decision-makers.

diffusion of innovations among schools (see Carlson, 1965, for example). Given, however, that a school had adopted an innovation, the question of how well the innovation was actually accepted and effectively used in the school still remained. The available studies did not make clear what indicators or factors might be associated with the successful introduction and utilization of an innovation within a school. This study was designed as part of a cross-cultural investigation into this crucial problem.

At this point it is necessary to define what is meant by diffusion of innovations and to briefly review the research on this topic.

Diffusion of innovations is defined as the process by which an innovation is transferred from one person or aggregate of persons to another person or aggregate of persons in a social system over time (Rogers, 1962, p. 12; Katz, 1961). In a broader sense, diffusion is defined as the process of transmitting a message from a source system, be it a person or aggregate, through a second system, which acts first as a receiver then as a source, to a third and to later systems. The message can be a material innovation, an idea, a piece of information, etc.

It has been suggested (North Central Rural Sociology Committee, 1955) that there are five stages in the individual adoption process: (1) the awareness stage, when the individual first learns of the innovation, (2) the interest stage, when the individual becomes interested in the innovation and wants to find out more about it, (3) the trial stage, when the individual uses the innovation on a very limited and temporary basis to test the utility of the innovation, (4) the evaluation stage, when the individual assesses his trial use of the innovation and decides whether he should adopt the innovation totally, and

(5) the adoption (or rejection) stage, when the individual actually adopts (or rejects) the innovation. This paradigm has been widely applied to various fields and as a result several difficulties have emerged: (1) the transition from the awareness to adoption may not follow the time sequence suggested, (2) the transition from the interest stage to the evaluation stage is difficult to delineate, (3) in some situations, the trial stage and the adoption stage overlap and are difficult to distinguish. Rogers and Shoemaker (1966) have retermed the individual adoption process an innovation decision process defined as the mental process through which an individual passes from first knowledge of an innovation to final decision to adopt or reject the innovation. They redefine the five "stages" as four "functions," implying a cumulative sequence of events, and conceptualize the functions as (1) knowledge (awareness), (2) persuasion (attitude formation and/or change), (3) decision (adoption or rejection), and (4) confirmation (reinforcement). Both paradigms include awareness time and adoption behavior as two distinct but related variables which can and should be examined in any innovation diffusion study.

The diffusion research tradition is exemplified by studies in the fields of rural sociology, education, medical sociology, communication and others (Rogers, 1962, pp. 21-56). In the rural sociology tradition, central attention has been directed toward the diffusion of agricultural innovations, such as hybrid seed corn (Ryan and Gross, 1958; Lionberger, 1949, 1951, 1960; Rogers, 1961, 1962). In the medical sociology tradition, the diffusion of new drugs has been the focus of attention (Katz and Menzel, 1954; Coleman, Katz and Menzel, 1957; Winick, 1961). In education, Columbia University's Teachers College conducted an intensive research program under the leadership of Professor Paul Mort to study

the adaptability of schools to change and innovation (Ross, 1958). Other educational innovation studies have been conducted and/or reviewed by Miles (1964) and Carlson (1965). In mass communications, diffusion of news events has been studied by Greenberg and Parker (1965) and Deutschmann and Danielson (1960). Recently, diffusion researchers have turned to the testing and generalization of U. S. diffusion findings in other cultures (Rogers, 1964; Deutschman and Fals Borda, 1962; Rahim, 1961).

In addition to the above research traditions, social scientists, especially social psychologists, sociologists, and more recently, business and managerial researchers, have been discussing the structure, development and change of organizations. Significant theoretical and empirical contributions in this area have been made by Barnard (1938), Weber (1947), Simon (1945), Merton (1957), Etzioni (1961), Katz and Kahn (1966), March (1966) and Tannenbaum (1966). So far, little convergence between the innovation diffusion tradition and organizational change research has been attempted.

It may be noted that the present study differs from most educational diffusion studies in that: (1) this was a study of innovation diffusion within an institution, whereas most educational diffusion studies have been concerned with between school diffusion; (2) this study investigated the diffusion process from an institutional viewpoint, hence, the focal point was the assimilation of an innovation in an institution; and (3) the innovation investigated (schedule modification) was of a particular kind; namely, the institution was the decision-making unit and, once the decision to adopt was made, compliance by all members of the institution was required.¹

¹For a related theoretical discussion of research considerations

Objectives of the Study

The main purpose of this study was to examine the factors or indicators which might be associated with various degrees of innovation assimilation in a school. As a result, high school teachers were made the unit of analysis because, to a large extent, they were the individuals who actually used the innovation and thereby determined the eventual success or failure of the innovation in the school.

There were several additional objectives:

1. Since the investigation was to serve as a pilot study for a similar inquiry into educational innovation diffusion in Thailand, a number of scales were to be constructed and tested for possible modification and use in the Thailand study. Further, the feasibility of group administration of a questionnaire would be examined.
2. The present study was designed to test the general paradigm of innovation diffusion in an institutional setting. The two major dependent variables, innovation awareness time and innovation adoption time, were included to ascertain if they were applicable to diffusion-within-organization research.
3. The study also was geared to the investigation of two new dependent variables which were considered important in studying diffusion phenomenon in formal organizations; namely, innovation internalization¹, defined as the extent to which a member of an organization perceived the

relative to the unit of adoption, see Katz (1962). Specific definitions of the types of innovation decisions are presented in Chapter IV of this report.

¹Detailed theoretical rationale for this concept can be found in Lin (1966).

innovation to be relevant and valuable to his role performance, and change orientation, defined as an individual's degree of general predisposition toward change.

4. Given different degrees of awareness, adoption, internalization or change orientation among teachers, factors which might be related to these variations were selected from institutional, communication, demographic, innovation characteristics, and psychological areas for the purpose of exploring the conditions under which innovation assimilation in schools would most likely occur.

5. The investigation was also planned to examine special communication patterns, sources of information, decision-making processes and related phenomena which were assumed relevant to the process of innovation diffusion in schools.

6. Finally, it was anticipated that the study would be an initial step toward building a theory of innovation diffusion in institutions.

CHAPTER II

METHODOLOGY

The field study was conducted in three Michigan high schools (denoted as Schools 1, 2 and 3) in which the teachers were asked to complete a questionnaire in a meeting arranged for that purpose. The questionnaire was pretested in a high school (School P) with 29 teachers. The innovation used in the pretest was independent study. Schedule modification was the innovation used in the main study.¹ The dependent variables were time of awareness, time of adoption, innovation internalization and self-perceived change orientation.

Selection of Independent Variables

Because of the exploratory nature of this study, a large number of independent variables were selected for the investigation after reviewing relevant innovation diffusion and organizational change research. Following is a general description of each of the variables.²

- I. The demographic category of variables studied included:
 1. Age.
 2. Educational level attained.
 3. Teaching salary.
 4. Non-teaching salary.
 5. Number of courses taken in the natural and physical sciences.

¹Schedule modification is defined in the last section of this chapter.

²Specific operationalization of each variable may be found in Appendices B and C.

6. The nature and number of courses taught.

II. The institutional category included:

A. "Role perception" variables such as:

1. Role satisfaction: the extent to which the teacher was satisfied with his work and working environment.
2. Feelings of security: the extent to which the respondent felt secure and safe as a teacher in the school.
3. Self-rated teaching ability: the teacher was asked to rate himself as a teacher in various realistic situations such as teaching on closed circuit television, being a supervising teacher for a student teacher, methods of teaching, methods of classroom discipline, etc.
4. Perceived peer-rating of teaching ability: how he thought other teachers would rate him as a teacher in those areas indicated in number 3 above.
5. Perceived principal-rating of teaching ability: how he thought the principal would rate him as a teacher in those areas.
6. Perceived student-rating of teaching ability: how he thought the students would rate him as a teacher in those areas.

All of these variables were scaled and checked for internal consistency.

B. "Perception of one's superior" variables included:

1. Perceived psychological distance between self and the principal: the teacher's perception of the degree of social distance between himself and the principal.
2. Perceived psychological distance between other teachers and the principal: the teacher's perception of the degree

of social distance between fellow teachers in the school and the principal.

3. Perceived source credibility of the principal: how he perceived the principal as a source of information in terms of qualification, dynamism, and safety.
4. Reported performance feedback from the principal: the extent to which the principal told him about how he was doing.
5. Perceived change orientation of the principal: the extent to which the teacher perceived his principal to be change-oriented.
6. Vertical communication: the teacher's perception of how often he talked with the principal.
7. Participation: the extent to which the teacher perceived himself taking part in relevant decision-making activities in the school.
8. Perceived legitimacy of participation: the teacher's perception of whether or not he thought his participation was actually meaningful.
9. Perceived equalitarian relationship with the principal: whether or not he felt his relationship with the principal was friendly and personal or strictly in terms of the formal structure of the school.
10. Perceived department chairman's support of the innovation: the extent to which he thought his chairman supported the innovation.
11. Perceived superintendent's support of the innovation: the extent to which he thought the superintendent supported the innovation.

12. Perceived principal's support of the innovation: the extent to which he thought his principal supported the innovation.

C. "Perception of peers" variables included:

1. Self-designated opinion leadership: Rogers and Cartano's (1962) six-item scale was used.
2. Ascribed opinion leadership: each teacher was asked to name three teachers whom he respected most as teachers, three whom he talked to most frequently in regard to teaching performance problems, and three whom he considered school opinion leaders in discussing crucial educational issues.¹
3. Innovation internalization norm for each teacher's designated opinion leaders: how a given teacher's opinion leaders actually felt about the innovation.
4. Perceived cohesiveness of the school faculty: how the teacher thought other teachers in the school got along as a group.
5. Perceived frequency of general horizontal communication: how often the teacher thought he talked with other teachers.
6. Perceived frequency of horizontal communication about the innovation: how often he thought he talked with other teachers about the innovation.

¹These two kinds of opinion leadership measurement (self-designated and peer-ascribed) were included to test whether the scales were equivalent in terms of the dependent variable, and if not, whether both scales were useful for the study of innovation diffusion in formal organizations.

D. "Perception of students" variables included:

1. The teacher's perception of student benefits from the innovation.
2. Student attitudes toward the innovation
3. The importance of considering student reactions when deciding to adopt an innovation.

E. "Perception of school procedural consequences" variables included:

1. Perceived changes in class procedures: the extent to which it was necessary to change class procedures because of the innovation.
2. Perceived changes in administrative procedures: the extent to which overall school procedures were altered to accommodate the innovation.

F. "Extra-institutional relations" variables included:

1. Orientation to non-peers: how many, out of five closest friends, were not teachers.
2. Peer-ascribed community status: the extent to which individual teachers were named by other teachers as (1) respected teachers in the community and (2) active in community affairs.

III. The communication behavior category included two sub-areas:

A. "General communication behavior" variables included:

1. The number of non-professional journals read.
2. General mass media exposure which covered newspaper, magazine and book reading habits plus commercial and educational radio and television viewing habits.

B. "Professional communication behavior" variables included:

1. Number of professional journals read regularly.
 2. Frequency of professional meeting attendance.
 3. Organizational memberships.
 4. Knowledge about local and state educational activities.
 5. Knowledge about how the school was using the innovation.
 6. Accuracy of information about how many innovations the school had adopted.
 7. The teacher's perception of how adequate was his knowledge about the innovation.
- IV. In the perception of innovation category, items called for:
1. Teacher opinions on the divisibility of the innovation.
 2. Desirability of limited trial use of the innovation.
 3. Advantages and disadvantages of the innovation.
- V. In the psychology and personality category, measures were used for:
1. Open-mindedness (dogmatism scale).
 2. Need for autonomy.
 3. Cosmopolite orientation.

These variables were all measured with scaled items.

Table 1 outlines the above categorization of independent variables and presents the hypothesized direction of the correlation (where appropriate) between each independent variable and each dependent variable.

The Questionnaire

After reviewing relevant literature, several questionnaire items were adapted from existing scales. Additional items were constructed. This combined list of items became the first draft of the instrument. Two graduate students at Michigan State University who had previous high

TABLE 1
CATEGORIZATION OF VARIABLES AND HYPOTHESES

Independent Variables	Predicted direction of correlation with dependent variables			
	1. Time of awareness	2. Time of adoption	3. Internalization	4. Self-perceived Change Orientation
I. Demographic				
1. Age	+	+	-	-
2. Educational level attained	+	+	+	+
3. Teaching salary	+	+	+	+
4. Non-teaching income	+		+	+
5. Number of courses taken in the natural and physical sciences	+	+		+
II. Institutional				
A. Role Perceptions				
1. Role satisfaction	+	+	+	+
2. Feelings of security	+	+	+	+
3. Self-rated teaching ability	+	+	+	+
4. Perceived peer-rating of teaching ability	+	+	+	+
5. Perceived principal-rating of teaching ability	+	+	+	+
6. Perceived student-rating of teaching ability	+	+	+	+
B. Perceptions of superiors and superior relations				

TABLE 1 CON'T.

Independent Variables	Dependent Variables			
	1	2	3	4
1. Perceived psychological distance between self and principal	-	-	-	-
2. Perceived psychological distance between other teachers and principal	-	-	-	-
3. Perceived source credibility of principal	+	+	+	+
4. Reported performance feedback from the principal	+	+	+	+
5. Perceived change orientation of the principal	+	+	+	+
6. Perceived vertical communication with the principal	+	+	+	+
7. Perceived level of participation in work-related problem-solving and decision-making	+	+	+	+
8. Perceived legitimacy of participation	+	+	+	+
9. Perceived equalitarian relationship with the principal	+	+	+	+
10. Perceived department chairman's support of the innovation	+	+	+	+
11. Perceived superintendent's support of the innovation	+	+	+	+
12. Perceived principal's support of the innovation	+	+	+	+
C. Perceptions of peers and peer relations				
1. Self-designated opinion leadership score	+	+	+	+
2. Peer-ascribed opinion leadership score	+	+	+	+
3. Perceived cohesiveness of school faculty	+	+	+	+

TABLE 1 CON'T.

Independent Variables	Dependent Variables			
	1	2	3	4
4. Group innovation internalization norm for each teacher's designated opinion leaders	+	+	+	+
5. Perceived frequency of general horizontal communication	+	+	+	+
6. Perceived frequency of horizontal communication about the innovation .	+	+	+	+
D. Perceptions of students				
1. Perceived student benefits from the innovation	+	+	+	+
2. Perceived importance of student reactions to the innovation	+	+	+	+
3. Perceived student attitude toward the innovation	+	+	+	+
4. Perceived student receptivity of the innovation (composite score; #1 & #3 above)	+	+	+	+
E. Perceptions of school procedural changes resulting from adoption of the innovation				
1. Perceived changes in class procedures		-	-	-
2. Perceived changes in administrative procedures		-	-	-
3. Perceived changes in class and administrative procedures (composite score; #1 & #2 above)		-	-	-
F. Extra-institutional relations				
1. Orientation to non-peers	+	-		+
2. Peer-ascribed community status based on respect as a teacher	+	+	+	+
3. Peer-ascribed community status based on activity in community affairs . .	+	+	+	+
4. Peer-ascribed community status (composite score; #2 & #3 above)	+	+	+	+

TABLE 1 CON'T.

Independent Variables	Dependent Variables			
	1	2	3	4
III. Communication Behavior				
A. General communication behavior				
1. General mass media exposure	+	+	+	+
2. Number of non-professional journals read regularly	+	+	+	+
B. Professional communication behavior				
1. Number of professional journals read regularly	+	+	+	+
2. Frequency of professional meeting attendance	+	+	+	+
3. Number of organizational memberships	+	+	+	+
4. Information level about local and state education activities	+	+	+	+
5. Accuracy of information about the number of school adopted innovations	+	+	+	+
6. Information level about school use of the innovation	+	+	+	+
7. Perceived adequacy of information about the innovation	+	+	+	+
IV. Perception of the Innovation				
1. Perceived divisibility of the innovation		-	-	-
2. Desirability of limited trial use of the innovation		-	-	-
V. Psychological and Personality				
1. Dogmatism	-		-	-
2. Need for autonomy	+	+	+	+
3. Cosmopolite orientation	+	+	+	+

school teaching experience critically examined these items. This step was primarily intended to adjust the clarity of the items. After modification and reorganization, the screened items were assembled as a preliminary form of the questionnaire. Four experienced researchers in education and communication examined the questionnaire to check definitions, examples, and format. The result of this scrutinization was the questionnaire used in the pretest school.

The final questionnaire used in the main study consisted of 57 pages with 200 items (Appendix C). In the introduction to the questionnaire, the general purpose of the study was described and the confidential nature of the individual's response was emphasized. The respondents were asked not to place their names on the questionnaire and were assured that the data would be used only by the research team.

Because of the length of the questionnaire, a response-set item was inserted.¹ It read, "On the average, a senior student in high school is about 17 or 18 years old." Concentration of responses in the first two categories, "agree very much" and "agree on the whole", would be an indication that teachers were accurately and meaningfully responding to the question. The final analysis showed that 100 percent of the School 1 respondents, 97.3 percent of the School 2 respondents, and 94.6 percent of the School 3 respondents selected positive response categories for this question. It seemed safe to assume that the responses obtained, generally speaking, were free from a general tendency to agree or disagree with questionnaire items regardless of their content.

The questionnaire began with behavioral items such as mass media exposure and prior adoption of innovations. Demographic items concluded the questionnaire.

¹The response-set item was number 88 in the questionnaire.

The Pretest

In order to select a school which had not adopted the innovation (schedule modification) used in the main study, but which had adopted an innovation that, in general, affected most of the teaching staff and students, a short mailed questionnaire was sent to 60 secondary school principals in Michigan inquiring about innovations adopted and the size of the teaching staff in each school. School P was selected as the pretest school for the following reasons:

1. It had a faculty of 33 teachers which was a sufficient number for pretesting (29 teachers actually participated in the pretest).
2. It was an innovative school which had adopted innovations such as independent study, language laboratory, programmed learning, new mathematics, and biological science curriculum services.
3. It had not adopted schedule modification which was the innovation used in the main study; thus, it did not conflict with the future selection of sample schools.

Independent study was utilized as the innovation in the pretest because it resembled schedule modification in its impact on the system as a whole.

A group-administered instrument was used. The teachers met in a conference room and were asked to complete the questionnaire while the research team was present to explain and discuss problems the teachers might have in supplying the data. A general oral explanation of the research project was given before the questionnaires were distributed.

Data from the pretest was utilized for ascertaining the internal consistency of scales. Inter-item correlations were calculated for each scale. Retention of scale items was based on the following criteria:

(1) whether the correlation was in the expected direction, and (2) how well each item correlated with all other items. As a result of this analysis some items were eliminated from the pretest scales and the items which remained became the scales used in the main study.¹

Data Collection

The three secondary schools utilized in the main study were selected on the basis of the following criteria:

1. Each had 30 or more teachers on the school staff.
2. Each of the three schools could be described as an innovative school. Selection of this type of school places restrictions upon the generalizability of the findings. Innovative schools may possess unique institutional attributes and may attract or only hire particular kinds of personnel to their faculty.
3. All three schools encompassed grades 9 through 12 and each had an approximate enrollment of 1,100 students at the time of data collection.
4. Each school had adopted schedule modification at least by the fall of 1965.

The general procedure used during the data collection phase of this study was as follows:

1. The research team, usually consisting of three members, arrived at the school about one hour earlier than the scheduled meeting time on the designated date. School 1 was visited on a Tuesday, School 2 on a Thursday and School 3 on a Friday. All questionnaires were administered in the afternoon and about one hour was necessary for completion.

¹For detail on both the pretest and main study inter-item correlations for each scale, see Lin (1966).

2. The research team usually toured the school building to familiarize themselves with the school environment. Questions were asked of the principal about the student body, size of staff and operational details of the innovation studied in the school.

3. At the scheduled hour, the teachers gathered in a conference room, a library, or the teachers' planning area. The principal introduced the research team to the teachers after which the team leader briefly explained the purposes of the study and thanked the teachers for their time and cooperation. Teachers were reminded not to discuss their responses among themselves and that the research team was available if they had any problems or desired clarification.

4. Group administration of the questionnaire in a captive situation was used for several reasons. First, it permitted maximum social control in the field situation. Second, it saved time for both the researchers and the teachers as compared to individual interviews. Third, it was economical. Fourth, it caused minimal disruption of the school schedule. Finally, experience with the pretest demonstrated the feasibility of the technique under these field conditions.

5. The instrument was usually completed within an hour. The range was 23 minutes to 80 minutes.

Some specific incidents should be mentioned.

In School 1, the first completed questionnaire took 30 minutes and the last took 80 minutes. The variance in completion time was compounded somewhat by the serving of refreshments and accompanying casual conversation among the teachers. There were 57 teachers on the school staff but only 45 completed a questionnaire.

In School 2, the first completed questionnaire took 23 minutes and the last took 55 minutes. There were 53 teachers on the school staff,

but only 37 completed a questionnaire. Thirty-one completed it in the scheduled time; six returned their questionnaires by mail the next day. At the beginning of the meeting, there were about 8 more teachers present but they left the room while the questionnaires were being distributed. The exact reasons why they left were not known, but the possibilities were: (1) the principal had told them that the session would take 45 minutes, whereas the researchers announced that it would take about 60 minutes; some of them might have felt they would not be able to finish; (2) a general resentment which these teachers might have toward such data-gathering.

In School 3, the first completion took 30 minutes and the last 65 minutes. There were 37 teachers on the school staff and all completed a questionnaire. All questionnaires were completed at the scheduled meeting.

School 1 and School 2 were visited in December, 1965, and School 3 in March, 1966.

In Schools 1 and 3, there was some confusion as to the term, "the principal," used in the questionnaire. In both cases, the individual who bore the title was chiefly responsible for external affairs, whereas, the assistant principal performed the usual functions of a principal in the school building. This was pointed out to the research team in several teachers' comments.

Sample Description

As can be seen in Table 2, there was no difference more than sampling error expectation for sex ($\chi^2=2.308$, with Yate's correction, d.f.=2), education level ($\chi^2=5.93$ with Yate's correction, d.f.=6), or income level ($\chi^2=11.59$ with Yate's correction, d.f.=6) among the three schools.

TABLE 2
CHARACTERISTICS OF RESPONDENTS IN THE THREE SCHOOLS

		School 1 N=45	School 2 N=37	School 3 N=37
Sex	Male	42.2%	56.8%	54.1%
	Female	55.6%	40.5%	35.1%
	No response	2.2%	2.7%	10.8%
		<u>100.0%</u>	<u>100.0%</u>	<u>100.0%</u>
Age	20-29	31.1%	67.5%	66.7%
	30-39	26.6%	13.5%	32.4%
	40-49	17.8%	13.5%	8.1%
	50+	20.0%	2.7%	2.7%
	No response	4.4%	2.7%	0%
	<u>100.0%*</u>	<u>100.0%</u>	<u>100.0%</u>	
Education	1-3 Years of College or			
	Bachelor's	37.8%	37.8%	27.0%
	Bachelor's +	33.3%	35.1%	27.0%
	Master's	17.8%	18.9%	27.0%
	Master's +	11.1%	2.7%	18.9%
No response	0%	8.1%	0%	
	<u>100.0%</u>	<u>100.0%</u>	<u>100.0%</u>	
Income	5000-6000	22.2%	51.3%	23.5%
	6001-7000	11.1%	13.5%	27.0%
	7001-8000	28.9%	16.2%	16.2%
	8001+	20.0%	5.4%	8.1%
	No response	17.8%	13.5%	24.3%
	<u>100.0%</u>	<u>100.0%</u>	<u>100.0%</u>	

*Some columns do not total 100% due to rounding error.

There were differences among the schools for teachers' age groups: School 1 tended to have older teachers than the other two schools ($\chi^2=14.6$ with Yate's correction, d.f.=6, $p=.05$).

The Innovation Investigated

Schedule modification was the innovation investigated in the present study. It contrasts sharply with conventional methods of school scheduling which are based upon a 1892 National Education Association recommendation that every subject should be taught in the same way and to the same extent to each student. In 1910, the NEA recommendation was the basis for establishment of the Carnegie Unit of Credit which dictated that each student take 120 hours of instruction per year to receive one credit. After 1910, conventional school scheduling became generally fixed to the Carnegie Unit with standardized 40 to 45 minute class periods, 4 or 5 times per week. "In 1954, 64 percent of America's high schools used the Carnegie Unit as the basis for graduation, and most of the remaining schools organized on a framework originally recommended in 1892" (Austin and Gividen, 1960).

Schedule modification, or flexible scheduling, is used to describe a number of ways for varying the length and placement of class periods in elementary and secondary schools. One of the first attempts at schedule modification was called the floating-period schedule in which one particular class period in the week was moved daily to a different position within the schedule. Adaptations introduced during the 1950's included the major and minor schedule, the "one-subject-at-a-time" plan, flexible activity, and block or group scheduling. About 1960, some U.S. schools began to utilize computers for flexible scheduling in order to achieve a more individually oriented program for each student. The

various schedule modification programs not only attempt to provide for individual student needs, but certain programs allow schedule adjustment according to the subject being taught, the methods and materials being used, and the requirements of individual teachers.

Schedule modification was defined in the questionnaire as follows:

For purposes of this study, schedule modification (flexible scheduling) is defined as a secondary school situation where 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 the students.

A survey of 60 Michigan high schools, conducted prior to the present investigation, indicated that 35 of the schools had adopted schedule modification. The degree and nature of schedule modification, however, varied considerably from one school to another.

Among the three sample schools, School 1 adopted the module system with units of 32, 48, 64 and 89 minutes in February 1965. School 2 started using 50-minute and 70-minute blocks in September 1965. School 3 adopted the module system with units of 45, 60, 75, 90 and 105 minutes in September 1964. Of the three schools, only School 1 utilized computer scheduling in their schedule modification program.

Two open-ended questions in the questionnaire asked teachers to cite the advantages and disadvantages of the use of schedule modification in their school. For both questions only the first three citations from each respondent were coded.

Table 3 shows the advantages cited by the teachers in each school. Better allocation and use of time was the most frequently cited advantage with some teachers indicating they were particularly satisfied with the use of time in the laboratories. The second most frequently mentioned advantage was that the innovation allowed greater choice of

subjects for students. Respondents pointed out that students became more interested in the courses because of the variety of time periods. The teachers also noted that the innovation allowed them to give more personal assistance to the students which resulted in the students having more opportunity to participate and fostering closer relationships between the teachers and students. A total of 168 citations were made by the respondents.

What about the perceived disadvantages created by the innovation? Table 4 shows that two major problems were considered most serious by the teachers. A large percentage of them cited student discipline problems as a result of the varied period lengths. In this category, the teachers mentioned that some students did not realize their responsibilities, that they did not use their time adequately, that their relationship with the teacher was weakened, and that they actually had too much freedom. The teachers also cited the problem of confusion and noise in the school building caused by the innovation. They further noted inadequate school facilities, including higher demand for record-keeping and programming problems. Some complained that the change was not thorough enough while a few others thought the change was too extensive and against tradition. A total of 118 citations were made.

TABLE 3
 PERCEIVED ADVANTAGES OF SCHEDULE
 MODIFICATION BY SCHOOL

Category	Number of Mentions			
	School 1	School 2	School 3	Total
1. More adequate use of time	13	17	24	54
2. More choice of subjects	18	4	10	32
3. More student interest	13	5	4	22
4. More personal assistance to students	13	5	3	21
5. More emphasis on learning	6	3	5	14
6. More student self-responsibility	5	4	0	9
7. Better and more student-oriented teachers	2	2	3	7
8. Smaller classes	2	1	1	4
9. Better use of school and community resources	1	0	1	2
10. Forcing changes in teaching methods	1	0	0	1
11. Reducing the domination of a few teachers	1	0	0	1
12. More school responsibility	1	0	0	1
Total	76	41	51	168

TABLE 4
 PERCEIVED DISADVANTAGES OF SCHEDULE
 MODIFICATION BY SCHOOL

Category	Number of Mentions			
	School 1	School 2	School 3	Total
1. More student discipline problems	33	14	7	54
2. More confusion and noise	7	12	7	26
3. More demand for equipment and facilities	3	0	6	9
4. Adjustment problems	5	1	2	8
5. Lack of student interest (especially in longer time periods)	1	0	5	6
6. More student failure	3	2	0	5
7. More demand on teachers (especially for preparations)	1	1	2	4
8. Not changed thoroughly	1	1	1	3
9. Changed too much	1	0	1	2
10. Impracticality for small classes	0	1	0	1
Total	55	32	21	118

CHAPTER III

INNOVATION AWARENESS

Distribution of Awareness Rate

Figure 1 shows that there was one respondent who reported he was not aware of the innovation at the time he completed the questionnaire. This is either an error or the true response of an extremely laggardly teacher.

It is interesting to note that the awareness distribution approaches a normal curve centering around the median category of 13 to 18 months ago. More than two-thirds (68.7 percent) of the teachers became aware of the innovation within the two year period prior to data-gathering. Since the actual adoption of the innovation by the schools took place from six to eighteen months prior to the time of data collection, it seemed that the teachers tended to become aware of the innovation just prior to the time the school decided to adopt it or just about the time the school was going to adopt it.

Sources of Initial Awareness

Table 5 indicates that the supervisor seemed to be the most important source of information about the innovation. One fifth of the teachers in the sample learned of the innovation through him. The next two most frequent communication sources were college instructors and fellow teachers; they combined to supply more than one-third of the respondents with information about schedule modification. On the other hand, only one teacher was informed of the innovation through viewing

Figure 1. Innovation Awareness Rate For the Three Schools Combined

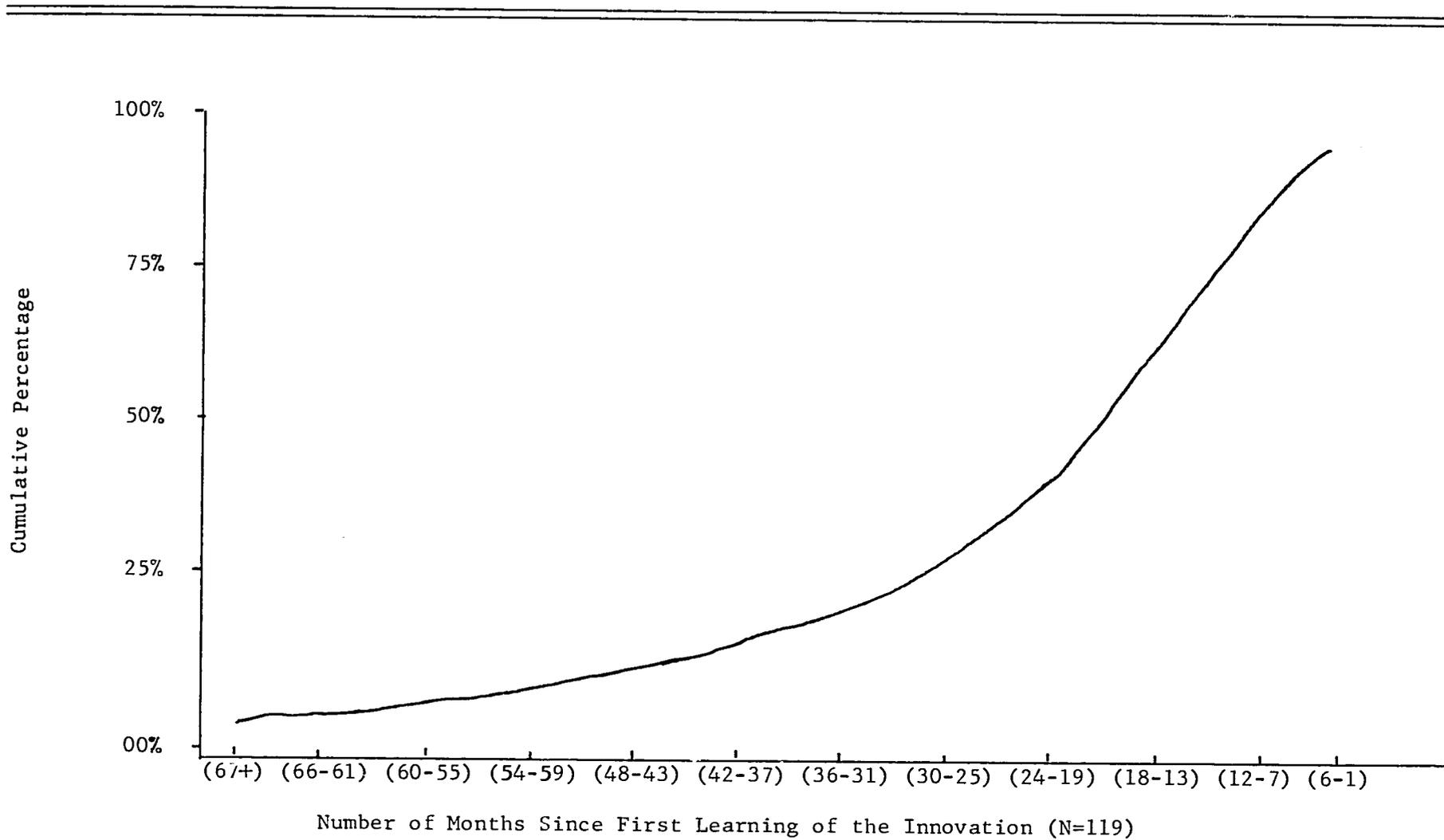


TABLE 5
SOURCES OF INITIAL AWARENESS ABOUT
SCHEDULE MODIFICATIONS

Communication Sources	Percentage of Respondents
I. INTERPERSONAL	
Supervisor	20.2
College Instructor	17.6
Fellow Teacher	17.6
Principal	9.2
Superintendent and Assistant Superintendent . .	3.4
High School Teacher	2.5
Job Interviewer	1.7
Fellow Student in College	<u>0.8</u>
Total Interpersonal Sources	73.0%
II. MASS MEDIA	
Journal Article	11.8
Educational Meeting	7.6
Books or Salesmen	2.5
Educational Film	0.8
Others	<u>1.7</u>
Total Mass Media Sources	24.4%
No Response	2.6%
Total	100.0% N=119

an educational film, and three others read about it in books or heard about it through salesmen.

The communication sources are divided into two general categories, interpersonal versus mass media sources (the first eight categories in Table 5 versus the last five categories). It can be seen that 73 percent of the respondents first heard about the innovation from interpersonal sources while only 24.4 percent of them learned of it from mass media sources. This finding suggests that either educators do not attend to the mass media for information about innovations or the mass media in education do not adequately report on innovations, or both. Since the most efficient way to transmit information widely is through mass media channels, this finding suggests the need to investigate and develop mass communication channels in education so that the spread of knowledge about new educational practices can be more rapid. This need was also reflected in the responses to a question which asked teachers to rank (1) books and/or magazines, (2) other educators, (3) non-educators and (4) mass media (radio, television, and newspapers) in terms of the importance of these sources in providing new educational ideas. Educators were rated as the most significant sources, books and magazines were second, followed by mass media and non-educators. The rankings, although expected, also point to the unrealized potential of mass media channels for diffusing new educational ideas because it appears that the present utilization of these channels is far from optimal.

However, the obvious impact of interpersonal channels should not be overlooked. Not only did the findings here indicate that interpersonal channels were predominant sources of initial information about the innovations, previous research (Rogers, 1962, pp. 217-20) indicates

that these channels are more important than mass media channels for influencing an individual's evaluation of an innovation. The suggestion of greater utilization of mass media channels in education does not imply subsequent less use of interpersonal channels. Both are important.

Correlates of Innovation Awareness

The next question for investigation was what factors might be related to a teacher being an early knower about the innovation; or, in another sense, what kind of teacher became aware of the innovation earlier than others. Correlations (Pearson product moment zero-order correlations) were calculated between innovation awareness scores (defined in terms of when a teacher became aware of schedule modification) and the independent variables described in the first chapter (see Appendix A for the complete findings).

Nine variables were positively correlated with innovation awareness:

1. Time of adoption of the innovation (0.32)¹
2. Age (0.24)
3. Perceived cohesiveness of the school faculty (0.23)
4. Perceived adequacy of information about the innovation (0.23)
5. Educational level attained (0.22)
6. Reported performance feedback from the principal (0.22)

¹See Chapter IV for a discussion of why time of adoption is not a meaningful variable in the context of this study; the reported correlation should be interpreted accordingly (numbers in parentheses are correlation coefficients).

7. Self-perceived change orientation (0.21)¹
8. Perceived frequency of horizontal communication about the innovation (0.20)
9. Teaching salary (0.18)

Two variables were negatively correlated with innovation awareness:

1. Perceived frequency of general horizontal communication (-0.20)
2. Perceived importance of student reactions to the innovation (-0.30)

An intuitively logical time sequence among certain of the variables would suggest that innovation awareness preceded adoption, horizontal communication about the innovation, and demand for adequate knowledge about the innovation. However, awareness and adoption could occur concurrently for some individuals. Horizontal communication about the innovation could precede awareness for that single message transaction in which certain individuals first learned of the innovation from a colleague. So even for these few variables, statements positing a time sequence were not without exceptions. Similarly, time-ordered relationships among other of the variables significantly correlated with awareness time were impossible to determine from the findings of this field study. Only statements of the co-variation of the variables at the time of data collection could, or should, be made.

Several demographic factors such as age, educational level, and teaching salary were associated with the time of initial awareness for the teachers. The remaining factors such as performance feedback from the principal, perceived faculty cohesiveness and self-perceived change orientation indicated that socio-psychological factors were related to awareness time.

¹Self-perceived change orientation was also treated elsewhere in this report as a dependent variable in this study.

The finding that educational level attained was significantly correlated with awareness time lends support to the emphasis on teachers pursuing further training. The positive relationship between age and awareness time was expected because older teachers were likely to have more years of teaching experience and therefore to have been exposed to the innovation earlier than younger teachers who may not yet have been employed as teachers at the time the innovation was first available; a majority of the teachers in this sample were 29 years of age or younger. Similarly, the positive correlation between salary level and awareness time was expected because older teachers with more years of teaching experience would have generally higher salaries than younger teachers. The correlation between salary level and age in this sample was 0.54, between salary level and level of education 0.26, and between age and level of education 0.28.

Another finding suggested that whether, and how frequently, the principal conferred with teachers on their role performance was related to the teachers' time of awareness about the innovation. The evaluation and encouragement offered in such principal-teacher sessions, as well as the frequency of these meetings, may have stimulated the teachers toward further improvement. Perhaps, too, the content of these sessions may have included discussion of innovations relevant to improved role performance which may have stimulated teachers to seek information about other educational innovations. In any event, this finding gives educational administrators a useful clue if they wish to improve the probability that teachers actively seek information about new educational practices.

The teacher's perception of the degree of interpersonal attraction among the teachers in the school (faculty cohesiveness) was also related

to innovation awareness time. This relationship may have resulted because the teacher who perceived the faculty as a cohesive group actively sought new information to maintain his conversational status with colleagues (the correlation between perceived cohesiveness and horizontal communication about the innovation was 0.25). No matter what the actual rationale may be, the perception of a cohesive, friendly atmosphere among the teachers was related to early knowledge about the innovation.

A self-perceived change orientation scale consisting of four items¹ was utilized in the main study to measure a teacher's general attitude toward new ideas in education. Change orientation was significantly related to innovation awareness, innovation internalization and a number of other "interpretable" variables. Since self-perceived change orientation was related to awareness and adoption times, the next question which should be raised is, "how can a person's willingness to accept change be increased?" A later chapter will deal more specifically with this question.

The two factors which were negatively correlated with innovation awareness presented interpretation difficulties. The reason why early knowers would communicate less frequently with other teachers was not readily apparent. One possibility may be that early knowers were perceived by other teachers as deviants from "traditional" educational norms and general communication with them was reduced (Rogers, 1962, pp. 193-207). A methodological clue was that the horizontal communication scale was rather weak² and its relationship with other variables,

¹The item correlations, all in the expected direction, ranged from .08 to .38.

²The correlation between the two scale items is 0.08.

including innovation awareness, might have been confounded. It appears that these relationships demand further investigation.

CHAPTER IV

INNOVATION ADOPTION

Decision-Making Processes

Rogers (1965) suggested that educational diffusion studies should attend to decision-making processes in order to determine at what level in the school system the decision to adopt or reject an innovation is made. This consideration was especially crucial in determining whether adoption time was an applicable and meaningful variable in the institutional context under study.

Four types of decision-making processes were specified by Rogers. The four represent a continuum ranging from voluntary individual decisions to organizational decisions demanding member compliance.

1. An optional decision is made when an individual is free to make a final adoption-rejection choice but may be influenced by the norms of the social system in reaching the decision.

2. A contingent decision is one in which an individual is allowed to make a choice to adopt or not only after the system of which he is a member has decided to adopt.

3. A collective decision results when members of a system as a whole participate in the decision to adopt or reject an innovation and once adoption is decided the individual members are required to comply.

4. An authority decision is one in which an individual has to adopt or reject as the result of an order by others.

With this classification in mind, the respondents were asked to indicate which kind of decision-making process they felt was involved in the adoption of schedule modification in their school. The results are shown in Table 6.

TABLE 6
 PERCEIVED DECISION-MAKING PROCESSES REGARDING
 SCHEDULE MODIFICATION

Type of Innovation Decision	School 1 (N=45)	School 2 (N=37)	School 3 (N=37)
1. A voluntary, personal decision (sub-type of optional)	6.7%	8.1%	5.4%
2. A decision upon which you had no influence but you had the choice of adopting or not (optional decision)	15.6%	10.8%	18.9%
3. A decision by consensus but you had the option of adopting it or not (contingent decision)	17.8%	29.7%	10.8%
4. A decision by consensus but you were required to adopt (collec- tive decision)	28.9%	5.4%	10.8%
5. A decision made for you and you were required to adopt (authority decision)	11.1%	8.1%	37.8%
6. Others	20.0%*	13.5%	10.8%
7. No response	<u>00.0%</u>	<u>24.3%</u>	<u>5.4%</u>
	100.0%**	100.0%	100.0%

*Of 9 respondents in this category, 6 indicated that the school had adopted schedule modification before they joined the staff.

**Total percentages may vary slightly from 100% due to rounding error.

It can be seen that many of the School 1 teachers perceived that the adoption decision in their school was collective, a large portion of the School 2 teachers perceived it as a contingent decision and more than one-third of the School 3 teachers thought it was a forced decision. A majority of the respondents in Schools 1 and 3 perceived that they were individually required to adopt the innovation after the school decided to adopt. The fact that many School 2 teachers felt that they had not been required to adopt the innovation may be partially explained by information presented in the next section; namely, that a large percentage of them apparently did not perceive that the school had adopted the innovation. It will be recalled that School 2 had adopted schedule modification with only two time blocks (50 and 70 minutes). It seems possible, therefore, that the innovation was not as visible to teachers in School 2 as it was in Schools 1 and 3, hence required adoption may not have seemed salient to them.

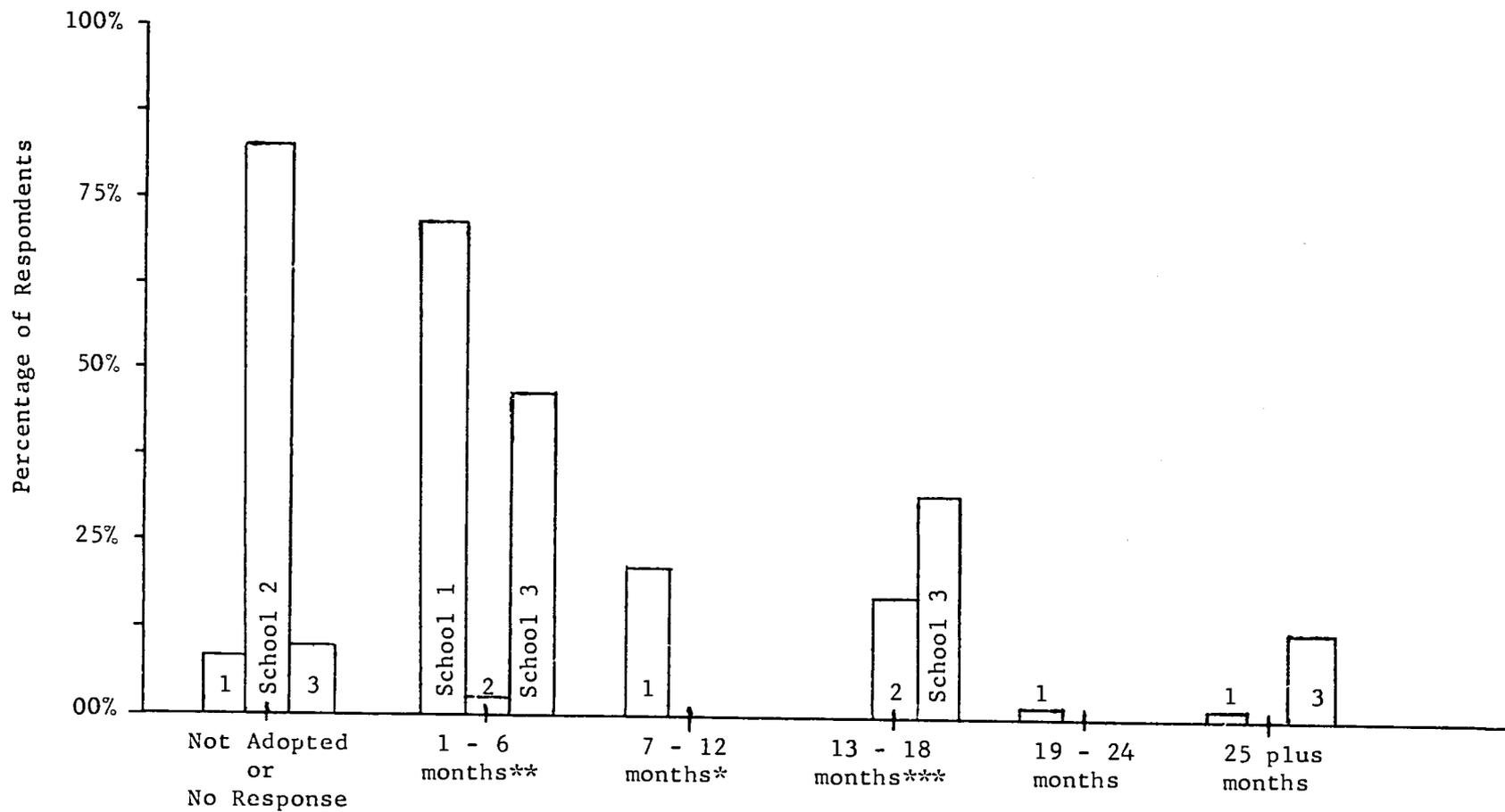
Since a large portion of the respondents indicated that they were not individually permitted to make the adoption decision, it became questionable if individual innovation adoption time was a meaningful index in this research context.

Distribution of Adoption Rate

The distribution of the innovation adoption rate in the three schools (in terms of how many months ago each teacher said he first used the innovation) is shown in Figure 2. As expected, little variability in adoption rate was obtained.

More noteworthy than the expected small degree of variability in adoption rate was the discrepancy between the time teachers perceived themselves to have first used the innovation and the time the school

Figure 2. Individual Adoption Rate for Schedule Modification



Number of Months Ago the Respondents Thought the Innovation Was Adopted by Their School

*School 1 official adoption time
 **School 2 official adoption time
 ***School 3 official adoption time

had actually adopted the innovation. In School 1, 78 percent of the respondents said either they had not adopted the innovation¹ or that they had adopted it only within the last six months. In fact, School 1 had adopted schedule modification 10 months previous to data collection. In School 2, the official adoption time was four months prior to the study yet 81 percent of the respondents indicated they had not adopted the innovation. In School 3, the official adoption time was 18 months prior to the study but 54 percent of the respondents said either they had adopted the innovation only within the past six months or that they had not adopted the innovation at all.

These discrepancies, which erred largely on the conservative side, suggested that there were factors associated with individual adoption time of schedule modification which were not ascertained by the instrument used in this study. This outcome cast further doubt on the use of individual adoption time as a meaningful variable in this analysis.

Problems

The previous discussion has illustrated theoretical as well as empirical difficulties encountered in using individual adoption time as a variable in the present research context; i.e., in a formal organization. First, it was clear that the decision to adopt schedule modification in each school was not accomplished individually by the teachers. For an innovation of this type, all teachers in the school theoretically "adopted" the innovation at the same time. Second,

¹"No Response" to the adoption time question were treated as "Not Adopted" responses.

because all teachers "adopted" at the same time, there should have been no variability in individual adoption time within a given school. There was, however, some variability in the time teachers in each school perceived themselves to have first used the innovation. While a portion of this variability might be due to inaccurate recall of the exact date of adoption, the magnitude of the proportion of discrepancies between individual and school adoption times suggests that other factors were operative in the situation.

Analysis of these problems has led the authors to re-examine the decision processes specified at the beginning of this chapter. The four types of decision-making processes are appropriate to the description of types of innovation decisions involving an individual as the unit of adoption in a societal structure, but appear to be an oversimplification of the types of innovation decisions which take place within the context of a formal organization. In the latter case, the adoption of an innovation may involve either the individual member or the organization as the functional unit of adoption. Compliant adoption behavior is expected on the part of the members when the organization is the functional unit of adoption. Furthermore, specification of the types of innovation decisions in organizations must take account of the nature of the authority structure of the organization because, under that structure, the unit of adoption and the decision-making unit may not always be the same.

A paradigm of innovation decisions in formal organizations can be outlined as follows:

I. THE INDIVIDUAL AS THE FUNCTIONAL UNIT OF ADOPTION (compliant adoption behavior is not required of all members)

<u>Type of Innovation Decision</u>	<u>Decision-Making Unit</u>
A. Optional	1. Individual member

- B. Contingent
 - 1. The organization (enabling decision)
 - a. by a collective enabling decision
 - or
 - b. by an authority enabling decision
 - 2. Individual members
 - a. by an optional adoption decision

II. THE ORGANIZATION AS THE FUNCTIONAL UNIT OF ADOPTION (compliant adoption behavior is required of all members)

<u>Type of Innovation Decision</u>	<u>Decision-Making Unit</u>
C. Collective	1. Members as an aggregate
D. Authority	1. Officers of the organization

Functional unit of adoption is defined as the level within the system at which the innovation is operationally adopted. Schedule modification, for example, is functionally adopted at an organizational level; i.e., generally the entire school must adopt at the same time because schedule modification involves class-period lengths which operate across the entire organization. If individual teachers were permitted to adopt schedule modification, the class-period system would be in a chaotic state. On the other hand, certain innovations can be adopted by individual members of an organization and utilized on an individual basis. For example, individual teachers in a school may be free to adopt class discussion as a teaching method and may adopt it without requiring adoption by other teachers in the school or in their own department.

When the organization is the functional unit of adoption, the decision to adopt requires that all members comply with that decision. Adoption time is simultaneous for all members of the organization at the time the innovation is put into practice. When the individual is

the functional unit of adoption, compliant adoption behavior across the entire organization is not required and there can be individual differences in adoption time.¹

Within these two broad categories defining the unit of adoption, optional and contingent types of decisions are appropriate to individual adoption, and collective and authority types of decisions are appropriate to organizational adoption.

1. An optional innovation decision is made by an individual member of the organization without requiring that other members of the organization make a similar decision. The individual may, however, be influenced by the norms of the organization or his work group, and/or by suggestions from superiors. The decision of an individual teacher to use class discussion as a teaching method would be an example of an optional decision.

2. A contingent innovation decision is a special case involving decision-making at two levels. First, the organization must decide to provide the innovation or at least to tolerate its use within the organization. Then the individual member is allowed to make the decision to adopt or reject the innovation as far as his personal use is concerned. The organizational decision enables the individual member to adopt the innovation. An example of a material innovation involving a contingent decision would be the use of instructional films in classes. The school must first decide to provide expensive motion

¹Superficially, it may appear that innovations might be "typed" according to the unit of adoption and the decision-making processes applicable to each. While it may be possible to type certain innovations along these lines, one should exercise discretion in so doing. The unit of adoption and the decision-making process for a given innovation may vary from organization to organization according to idiosyncracies of the organization, its officers or members.

picture projectors before the teachers can use films in their classes. The decision at the school level enables the teachers to individually adopt or reject the use of instructional films (assuming, of course, that the school does not order teachers to use films at the same time the decision to provide projectors is made). An example of a non-material innovation involving a contingent decision might be the inclusion of sex education lectures in biology classes. Because of the controversial nature of the subject in some communities, the school administration may feel that the school should first decide whether or not individual biology teachers will be permitted to include sex education lectures in their classes, but leave the final adoption decision up to the individual teacher on a voluntary basis.

The enabling decision made at the organizational level may be accomplished in one of two ways. As a group, the members of the organization may make the decision (collective enabling decision)¹ or the officers of the organization may make the decision (authority enabling decision).

3. A collective innovation decision involves functional adoption of the innovation at the organizational level and is reached when members of the organization participate in making the decision which then becomes binding upon all members of that organization. For example, the decision to adopt schedule modification might be submitted to a vote of the entire school faculty or to a representative committee of the faculty.

¹A number of sub-types of collective decisions, either of the enabling or adoption type, could be specified depending on the extent of member participation in the decision; e.g., committee representation, direct vote, etc.

4. An authority innovation decision also involves functional adoption of the innovation at the organizational level, but is reached when the officers of the organization make the decision and impose adoption of the innovation upon all of the members.

The essential difference between collective and authority decisions is member participation in the decision-making process. In an authority decision, the individual member has no legitimate influence on the decision.

The degree of innovativeness of an individual has usually been measured by comparing the individual's adoption time for a given innovation to the adoption time of others in his social system. Reformulation of the paradigm of innovation decisions in formal organizations clearly indicates that when the organization is the functional unit of adoption, individual adoption time does not differentiate members of the organization in terms of their degree of innovativeness. For a given organization, all members "adopt" at the same time. However, when the individual is the functional unit of adoption, individual adoption time is free to vary and can be used as a meaningful variable in organizational research, subject to the conditions discussed in the remainder of this chapter.

A second problem encountered in using individual adoption time as a variable in the present research was the large proportion of responses which indicated individual adoption of the innovation after the point in time at which the school had adopted the innovation and a few responses which indicated individual adoption before school adoption. Theoretically, the former group of respondents should have indicated adoption of schedule modification at the time it was adopted by the school because the school was the functional unit of adoption.

A portion of this variability in individual adoption time within a school might be explained by inaccurate recall. The remaining variability in the present responses could be due to employment mobility of the teachers. The adoption time item in the present research instrument simply asked, "I first used schedule modification (if you have) in _____(month) _____ (year)." Teachers who were employed by the schools in the present study after their school had adopted schedule modification might have responded in terms of adoption behavior upon date of employment. Other teachers who had been previously employed in another school which had also adopted the innovation may have responded in terms of their use of the innovation while employed in the other school.

The problems involved with employment mobility of organizational members are not crucial when the organization is the functional unit of adoption because individual adoption time is not a meaningful variable under that condition. However, when adoption of the innovation under study involves a contingent decision then individual adoption time while in the study school is a meaningful variable. In this circumstance, questionnaire items should be worded so that responses are in terms of adoption of the innovation while employed in the present organization. Moreover, when the date of employment is after the date of the enabling decision made by the organization, adoption time scores should be adjusted to account for these differences in employment time among individuals within a given organization. In other words, individual differences in degree of innovativeness (i.e., adoption time scores) should be measured in terms of the duration of time from the organization's enabling decision to individual adoption or from time of employment to individual adoption, whichever occurred most recently.

A related problem is also apparent when the innovation under study involves an optional decision. Individual differences in the number of years of vocational experience may partially account for the relative lateness of adoption by individuals who have only recently entered the vocation for which the innovation is appropriate (see footnote in Rogers, 1962, pp. 165-6). For example, if a given educational innovation has been "available" for adoption for ten years, teachers who have less than ten years of teaching experience could not have adopted the innovation when it was first available. Therefore, the measure of their innovativeness, since it is based on the earliness-lateness of their adoption time in relation to the adoption time of their peers, will not accurately reflect their relative degree of innovativeness. Adoption time scores for innovations involving optional decisions should be adjusted to correct for individual differences in number of years of vocational experience when the number of years of experience is less than the number of years during which the innovation has been available for adoption.¹

¹One method for adjusting these scores would be to take the mean of the adoption times reported by the innovator category in the sample (defined as the first 2½ percent to adopt) and use that date as the baseline for adjustment. Then, for respondents who entered the vocation after that date, the following formula would adjust their individual adoption time score to account for their fewer years of vocational experience:

$$\text{adjusted adoption time score} = \frac{\text{number of years since adoption}}{\text{number of years of vocational experience}} \times \text{number of years since innovator's mean adoption date}$$

Careful attention should be given to the history of the innovation under study in order to determine the accuracy of adoption times reported by innovators.

Other diffusion researchers should be aware of the problems involved in utilizing individual adoption time as a variable in an institutional context. The decision-making process for each innovation under study should be determined before attempting to use individual adoption time as a variable when organizational members are taken as the unit of analysis. For innovations involving optional or contingent types of decisions, date of employment in the organization under study and number of years of vocational experience should be determined for each member and, when appropriate, used to adjust individual adoption time scores.

CHAPTER V

INNOVATION INTERNALIZATION

Conceptual Definition

Innovation internalization is defined as the extent to which a teacher perceived the innovation as relevant and valuable to his role performance in the school. In other words, it is the degree of a teacher's attitudinal acceptance of a specific innovation. A four-item scale¹ was devised to measure this variable. Because the variable was "new" in diffusion research,² two questions were considered: (1) was the variable meaningful from the teachers' viewpoint, and (2) if so, what utility might it have for bringing educational change processes into perspective?

The first question was attacked from two angles. The first approach was to examine the relationship between the variable and the advantages and disadvantages of the innovation perceived by the teachers. It was assumed that a high internalization score should be related to a high ratio of advantages over disadvantages; i.e., a teacher who had internalized the innovation would perceive more advantages of the innovation than disadvantages. To evaluate this assumption, the ratio between the total number of advantages and

¹Each of the four items had seven response categories permitting the highest possible score to be 28. The higher the score, the greater was the degree of internalization.

²To the authors' knowledge, this is the first study to utilize this variable in an educational change context.

disadvantages listed by teachers in each school was calculated (see Tables 3 and 4 for the classification of advantages and disadvantages):

<u>School</u>	<u>Number of Advantages Cited</u>	<u>Number of Disadvantages Cited</u>	<u>Ratio (A:D)</u>
1	76	55	1.4: 1
2	41	32	1.3: 1
3	51	31	1.6: 1

Relatively speaking, this index seemed to indicate that School 3's teachers perceived more advantages over disadvantages than did teachers in School 1 or 2. Next, the extent of innovation internalization in the three schools was determined to see if this same tendency would hold. The means and standard deviations of the internalization scores for each school were calculated and the difference between the means tested.

Internalization Scores for the Three Schools¹

	<u>School 1</u>	<u>School 2</u>	<u>School 3</u>
Mean	21.44	19.92	22.22
Standard Deviation	4.05	3.63	2.59

The difference between the mean internalization scores for Schools 2 and 3 was statistically significant; School 3 teachers had a higher mean internalization score than teachers in School 2. School 3 had the highest ratio of advantages to disadvantages, and School 2 had the lowest ratio, partially supporting the assumption upon which the comparison was based.

It was concluded, based on this check, that the variable, innovation internalization, was a meaningful index in this research context.

¹For Schools 2 and 3: $t=3.15$, $d.f.=72$, $p=0.01$ (Walker and Lev, 1953, pp. 155-156). Differences for Schools 1 and 2, and 1 and 3 were not significant.

Correlates of Innovation Internalization

The second, more direct, approach to the question of the validity of the variable, innovation internalization, was simply to see if the variable had any variation and to investigate how meaningful its relationship was with the factors with which it was significantly correlated. The utility of the variable for studying educational change is indicated by the number of factors with which it was significantly correlated.

Twenty variables were positively correlated with innovation internalization, as compared to 11 variables which were significantly correlated with innovation awareness (see Chapter III). Furthermore, all of the correlations were theoretically interpretable.

1. Perceived student benefits from the innovation (0.60)¹
2. Perceived student receptivity to the innovation (0.60)
3. Self-perceived change orientation (0.50)
4. Perceived student attitude toward the innovation (0.40)
5. Perceived adequacy of information about the innovation (0.37)
6. Perceived superintendent's support of the innovation (0.28)
7. Self-designated opinion leadership score (0.27)
8. Perceived legitimacy of participation (0.27)
9. Number of organizational memberships (0.26)
10. Perceived frequency of horizontal communication about the innovation (0.25)
11. Educational level attained (0.25)
12. Number of professional journals read regularly (0.22)

¹Numbers in parentheses are Pearson product moment zero-order correlation coefficients.

13. Information level about local and state education activities (0.21)
14. Non-teaching salary (0.21)
15. Innovation internalization norm for each teacher's designated opinion leaders (0.20)
16. Self-rated teaching ability (0.20)
17. Perceived source credibility of the principal (0.19)
18. Perceived principal-rating of teaching ability (0.19)
19. Perceived level of participation in work-related problem-solving and decision-making (0.18)
20. Information level about school use of the innovation (0.18)

One variable was negatively correlated with innovation internalization: Desirability of limited trial use of the innovation (-0.18)

In terms of a logical time sequence for these variables, four might have occurred after the teacher became aware of the innovation; namely, adequacy of information about the innovation, horizontal communication about the innovation, perceived student benefits from the innovation, and desirability of limited trial use of the innovation. Additionally, four of the variables could occur only after the school had adopted the innovation: student receptivity to the innovation, student attitude toward the innovation, information level about school use of the innovation, and internalization norm for each teacher's opinion leaders.¹

Taking the teacher's perceptions of the educational efficacy of an innovation as an index of the consequences of that innovation, the data indicate a strong positive relationship between this variable and the degree of internalization of the innovation. In other words, teachers

¹This variable was derived from the internalization scores of each teacher's designated opinion leaders.

who think an innovation has beneficial consequences for their students tend to have a more positive attitude toward the innovation. It must be pointed out, however, that this relationship may be reciprocal; that is, the variables may be mutually interdependent. In any event, it is evident that innovation internalization is a crucial factor in educational change research and that teacher perceptions of student benefits from an innovation are predictive of the resulting success or failure of an innovation in a school.

A number of other factors were also related to the degree of internalization of an innovation by teachers. The nature of self-perceived change orientation will be investigated further in a later chapter. Several communication variables, such as perceived adequacy of innovation information, knowledge of school use of the innovation and knowledge of local and state educational activities, were associated with innovation internalization.

Several variables involving aspects of interpersonal relationships formed a set of related factors. These included self-designated opinion leadership, group internalization norm for the innovation, horizontal communication about the innovation (among the teachers), participation in school problem-solving and decision-making and perceived legitimacy of the participation. These factors seemed to suggest that interpersonal information exchange tended to foster understanding of the innovation and to reinforce confidence in the innovation. The importance of teacher participation in school decision-making processes was relevant, especially when that participation was not perceived as superficial. More important than the simple fact of participation was the teachers' perception that their participation was legitimate and not a "busy-work" exercise in problem-solving and decision-making.

Certain relationships with administrators were related to the teachers' acceptance of the innovation. For the particular innovation in this study, perceptions of the degree to which the superintendent supported the innovation and evaluation of the credibility of the principal were most significant.

Self-perception of teaching ability was also related to innovation internalization. The data indicated that the better a teacher thought his own teaching ability was, the more likely he was to have a positive attitude toward the innovation.

A few demographic factors, such as educational level attained and level of non-teaching income, were related to innovation internalization. The relationship of level of education to innovation internalization emphasizes the value of encouraging teachers to continue their education. The finding that the higher the non-teaching income, the greater the internalization of the innovation was difficult to interpret without further investigation. Perhaps when a teacher has some supplemental income beyond his teaching salary, he feels more secure and the uncertainty involved in confronting change becomes less threatening. This hunch was reinforced by the significant correlations found between non-teaching income and:

1. Feelings of security ($r=0.21$)
2. Self-rating of teaching ability ($r=0.26$)
3. Perceived peer-rating of teaching ability ($r=0.21$)
4. Perceived principal-rating of teaching ability ($r=0.25$)
5. Perceived student-rating of teaching ability ($r=0.25$)

In conclusion, it is assumed that there is sufficient evidence from the present study to posit innovation internalization as a significant concept for the study of innovation diffusion in education.

Analysis of the correlates of innovation internalization suggest that information exposure relevant to the innovation and to state and local education activities, the degree of a teacher's change orientation, the nature of interpersonal relations in the school, support from superiors, self-perception of teaching ability, educational level attained, non-teaching income, and professional communication behavior, all were related to the degree of teachers' attitudinal acceptance of the innovation.

CHAPTER VI

GENERAL CHANGE ORIENTATION AND INSTITUTION-BUILDING

Relationships Between Change Orientation, Innovation Awareness and Innovation Internalization

The present study included two measures of the teacher's attitude toward change:

1. One measure dealt with attitude toward a specific innovation and was called innovation internalization.
2. Another measure was concerned with attitude toward change in general and was called change orientation.

The findings, reported in previous chapters, that change orientation was significantly correlated with both innovation awareness ($r=0.21$) and innovation internalization ($r=0.50$), prompted further analyses.

An instrument designed to measure an individual's change orientation would provide vital information for planning the introduction of an innovation into a system. It could be utilized before an innovation is introduced, providing information about the member's receptivity to change and the likelihood of successful introduction of the innovation into the system. And by learning what factors might be related to a teacher's change orientation, procedures for altering the level of change orientation could be initiated, provided that these factors were manipulable.

Because the three variables, change orientation, innovation awareness, and innovation internalization (presumably in this time sequence),

are inter-related, either change orientation or innovation internalization might be abandoned if the two variables were found to overlap considerably. Conceptually, it was assumed the two variables were different: one dealt with general attitude toward change at any point in time; the other dealt with the attitude toward a specific innovation after it was known of or adopted.

Eighteen variables were significantly correlated with change orientation (12 positively and 6 negatively) as compared to 21 variables which were significantly correlated with innovation internalization. Of the variables correlated with either variable, only six were correlated with both. The six were perceived student benefits from the innovation, perceived student receptivity to the innovation, perceived student attitude toward the innovation, perceived adequacy of information about the innovation, perceived level of participation in work-related problem-solving and decision-making, and perceived source credibility of the principal. Considering that the correlation between change orientation and innovation internalization was relatively low and that only six of 33 variables were correlated with both, it seemed safe to conclude that the two are distinct concepts which deserve separate attention in studying the diffusion of educational innovations.¹

The 12 variables positively related to change orientation were:

1. Perceived student benefits from the innovation (0.55)²

¹Further verification of this assertion is underway involving testing the difference of the correlations between each of the 33 independent variables and the two dependent variables, while taking account of the relationship between the two dependent variables (McNemar, 1962, p. 140).

²Numbers in parentheses are Pearson product moment zero-order correlation coefficients.

2. Innovation internalization (0.50)
3. Perceived student receptivity to the innovation (0.48)
4. Perceived change orientation of the principal (0.42)
5. Perceived adequacy of information about the innovation (0.30)
6. Role satisfaction (0.28)
7. Perceived level of participation in work related problem-solving and decision-making (0.27)
8. Reported performance feedback from the principal (0.26)
9. Perceived student attitudes toward the innovation (0.24)
10. Perceived cohesiveness of the school faculty (0.23)
11. Innovation awareness (0.21)
12. Perceived source credibility of the principal (0.20)

The six variables negatively related to change orientation were:

1. Perceived psychological distance between other teachers and the principal (-0.26)
2. Age (-0.23)
3. Dogmatism (-0.23)
4. Peer-ascribed community status based on respect as a teacher (-0.20)
5. Perceived psychological distance between self and principal (-0.19)
6. Peer-ascribed opinion leadership (-0.18)

The negative correlation with age indicated that the younger a teacher was, the more likely he was to be change-oriented. The correlation between change orientation and dogmatism was negative, a finding in line with other research evidence that the more open-minded a person is, the more likely he is to be change-oriented.

Relevance of Institutional Structure
to Change Orientation

The most striking finding in relation to the concept, change orientation, was that 12 of the significantly correlated variables were classified as institution-related. In addition, adequacy of information about the innovation is an institutionally manipulable variable. This evidence was even more noteworthy considering that, of the remaining variables, age is not manipulable and dogmatism is presumably a measure of an individual's belief system and is relatively difficult to manipulate. These findings imply that in any attempt to alter a teacher's change orientation, attention should be focused upon the interpersonal relationships of the institution within which the teacher is a member.

A large number of the variables related to change orientation centered around the perception of a superior (the principal) and the relationship between the teacher and his superior, as seen from the teacher's viewpoint. How socially close the teacher felt he was to the principal and how close he felt other teachers in the school were to the principal, were both important in terms of the teacher's change orientation. Further, the teacher's perception of how change-oriented the principal seemed to be was related to his own change orientation. The frequency with which the principal provided the teacher with evaluations of his teaching performance was relevant to the willingness of the teacher to accept change.

Significantly related to the teacher's willingness to accept change was his perceived level of participation in decision-making within the school. Lewin (1958) and Pelz (1958) argued that group decision is an effective method for affecting change in an individual because the

degree of involvement is stronger than if made by the individual in isolation or if made by someone else and forced upon him. The process of group decision, defined as decision about individual goals in a setting of shared norms regarding such goals, seems to be a factor which helps overcome individual resistance to change (Coch and French, 1948; Vroom, 1960). Findings from the Maier and Hoffman study (1964) imply that a sense of shared participation in the solution of problems directly affecting group members is a more meaningful method of motivating change than the offering of external incentives. In an educational institution where it may be more difficult to offer financial and other extra benefits than in an industrial institution, faculty discussion and participation in decision-making may be the most efficient and effective way of ensuring acceptance of change. Once a group has arrived at a decision to act, the members, even though they may act as individuals, take on the group decision and act in accordance with it (Levine and Butler, 1952).

The element of group cohesiveness is intricately interwoven with group processes. It was found in this investigation that the teacher's degree of change orientation was positively related to his perception of how cohesive he thought the school faculty to be. The individual who perceives himself to be in a cohesive situation will direct his behavior to maintaining that cohesiveness and eliminating differences (Back, 1958). The greater the perception of cohesiveness within a group and the greater the pressure to change, the greater will be the actual change in the individual toward the group norm (Festinger and Thibaut, 1951). Therefore it might be concluded that in an innovative school, such as the three included in this study, the greater the perceived cohesiveness of the faculty, the more pressure there is on the individual teacher to be change-oriented.

It was also found in this investigation that the more satisfied a teacher was with his role as a teacher, the more likely he was to be change-oriented. After reviewing research on worker satisfaction and performance, Tannenbaum (1966) concludes that "persons who dislike their jobs or working conditions usually withdraw in one way or another." Again because the three schools included in this study were innovative schools, the stronger an individual's attraction to his role as a teacher in the school, the more pressure he would be under to conform to the change-oriented norms of the school.

The findings that peer-ascribed opinion leadership and peer-ascribed community status based on respect as a teacher were both negatively related to change orientation are difficult to interpret without further evidence. The correlation between ascribed opinion leadership and ascribed community respect was 0.75. This finding implies that teachers in the schools sought opinions from teachers whom they also perceived to be of high status in the community in which the school was located. Whether being considered an opinion leader preceded being considered a respected teacher in the community or not, is an empirical question. In any event, it appeared that the more traditional teachers (i.e., less change-oriented) were more likely to be opinion leaders in the schools in this study. The finding was even more striking considering that the three schools were all relatively innovative.

The findings presented in this chapter provide some useful insights into strategy for reducing resistance to change in a school. The optimal way to improve teachers' general attitudes toward change seems to lie within the social structure of the institution. This potential linkage between the institution and the individual has implications for future institution-building research and planning. There are now reasons to posit the importance of improving social relationships

between administrators and teachers, creating a friendly and cohesive atmosphere among the teachers, and trying to make the teachers feel satisfied with their role.¹ While these objectives may not be easily accomplished, they do suggest where operational attention might be focused if institution building through change is to be more readily achieved.

¹Empirical support for the notion that high morale is related to high productivity has been mixed. Findings from this study imply, however, that high morale may be related to willingness to accept change within an institutional context. This hypothesis appears worthy of further investigation.

CHAPTER VII

CONCLUSION

Summary and Strategy for the Diffusion of Educational Change

The present study was an exploratory investigation of the process of the diffusion of an educational innovation among the teachers in three high schools in Michigan. The main purposes of the study were to examine factors associated with innovation assimilation in schools and to serve as the pilot study for a similar investigation in Thailand. A questionnaire assessing demographic, institutional, general and professional communication behavior, perception of the innovation, psychological and personality variables was developed. Schedule modification was the innovation investigated. Innovation awareness, innovation adoption, and innovation internalization were selected as the main dependent variables. In the analysis, it was found that innovation adoption was not a meaningful concept in this particular institutional context, and that the change orientation of the teacher was a more meaningful variable. Specifically:

1. Innovation awareness: 73 percent of the teachers first heard about schedule modification from personal sources such as their supervisors, college instructors, fellow teachers or principals. Mass media sources, including books, magazines, radio, television and journals, although generally regarded as important sources of information about new educational ideas and practices, played a small part in informing the teachers about schedule modification. Based on these findings, it is suggested that research and development on the utilization of mass

media channels in education be strengthened and that school administrators be more aware of their important role in feeding information on educational innovations to teachers.

It was also found that the factors associated with a teacher's becoming aware of the innovation at any early stage included his age, his educational level, his perception of how the teachers got along in his school, the extent to which the principal informed him of how he was doing as a teacher, his change orientation, and his salary level. These findings lead to the recommendations that greater emphasis be put on:

- (1) increasing teachers' opportunities for continuing education,
- (2) creating a friendly, positive atmosphere among the teachers in a school,
- (3) making sure that the principal spends time discussing teaching performance problems with all teachers individually, and
- (4) further investigating the possibility of developing positive attitudes toward change among teachers.

The latter item will be discussed further in a later section.

2. Innovation adoption: Although different decision-making processes relative to adoption of the innovation were perceived by the teachers in the three schools, it was generally found that the decision was involuntary on the part of the teacher. The data also showed marked discrepancies between the adoption times which were officially recorded for each school and the adoption time recalled by respondents in that school. As a result, it is suggested that in future educational change research, the type of decision-making involved in the adoption of the innovation under study be determined first. If the organization

rather than the individual member was the unit of adoption, individual innovation adoption behavior becomes a meaningless variable. Only when individual members are the functional unit of adoption can individual adoption time be utilized as a meaningful variable. For example, schedule modification is an innovation which is adopted system-wide and individual teachers must accept it once the system decides to adopt. On the other hand, an innovation like school library assignments for students involves a contingent adoption decision in which the school first decides to provide a library, but actual library assignments may be left up to the individual teacher. The school decision enables teachers the option of individually adopting library assignments. In this case and in the case of an optional adoption decision where the individual has the complete adoption-rejection choice, individual adoption time can be an meaningful variable.

3. Innovation internalization: The teacher seemed to think schedule modification meant more adequate use of time, more choice of subjects for students, more student interest, more personal assistance rendered to students, and more emphasis on learning and achievement. As disadvantages, they pointed out that the innovation caused more student discipline problems, more confusion and noise, more demand for equipment and facilities, and some adjustment problems for both the teachers and the students. The advantages outweighed the disadvantages, and in general the teachers indicated a favorable attitude toward the innovation. It was found that innovation internalization, defined as the extent to which the teacher perceived the innovation as relevant and valuable to his role performance, was a meaningful concept to the teachers and hence for educational change research. A large number of variables (21) were found to be related to the extent teachers internally accepted

the innovation. Possible "antecedent" variables included the teachers' . . .

change orientation
 level of knowledge about the innovation
 information on local and state educational activities
 involvement in the school decision-making processes
 perceived superior support for the innovation
 self-perception of teaching ability
 educational background
 non-teaching income
 frequent reading of professional journals

Therefore, it is recommended that in order to increase the likelihood of teachers' internal acceptance of a school-adopted innovation:

- (1) teachers should be provided with information relevant to the innovation and to educational activities in general,
- (2) the superintendent and principal should explicitly demonstrate full support for the innovation,
- (3) a positive norm toward the innovation should be created among the teachers' opinion leaders,
- (4) teachers should be provided an opportunity for meaningful participation in school decision-making,
- (5) opportunities to take additional courses should be provided, and
- (6) there should be adequate availability of professional educational journals and similar materials.

4. Change orientation: Since change orientation was found to be related to both innovation awareness and innovation internalization, this

general concept was further investigated as a measure of the extent to which a teacher was willing to accept educational change. Change orientation was found to be related to age (younger), dogmatism (open-minded), and a number of institutional variables.

Based on these findings it is recommended that emphasis be placed on the social-structural aspects of the institution in order to lessen potential resistance to change. To accomplish this goal, it is suggested that the relationship between the principal and teachers be improved as much as possible by:

- (1) having the principal openly demonstrate his interest in and support for educational change,
- (2) having the principal frequently discuss teaching performance with individual teachers,
- (3) enhancing the principal's image as a credible source of information (measured in terms of competence, trustworthiness, and dynamism),
- (4) encouraging a friendly and understanding relationship between the principal and the teachers, and
- (5) providing teachers with the opportunity to participate meaningfully in school decisions which may affect them.

Further, it is recommended that effort be made to promote a cohesive atmosphere among teachers in a school.

Toward a Theory of Institution Building

It has been assumed throughout the present research that the development and introduction of change into an institution¹ is a necessary, if

¹An organization, or institution, can be defined as a system with the following attributes: (1) a number of offices with specified functions; (2) the offices are structured along hierarchial lines; (3) at

not sufficient, ingredient in the process of institution building. Investigation of how change is introduced into a system, how the members of the system react to the change, and the consequences of the change, are all within the research domain of innovation diffusion and information dissemination.¹ A model specifically applicable to the study of diffusion and dissemination processes in institutions has been proposed (Lin, 1966). Following is a brief description of the model and discussion of the evidence which the present study has contributed toward its further definition (see Figure 3).

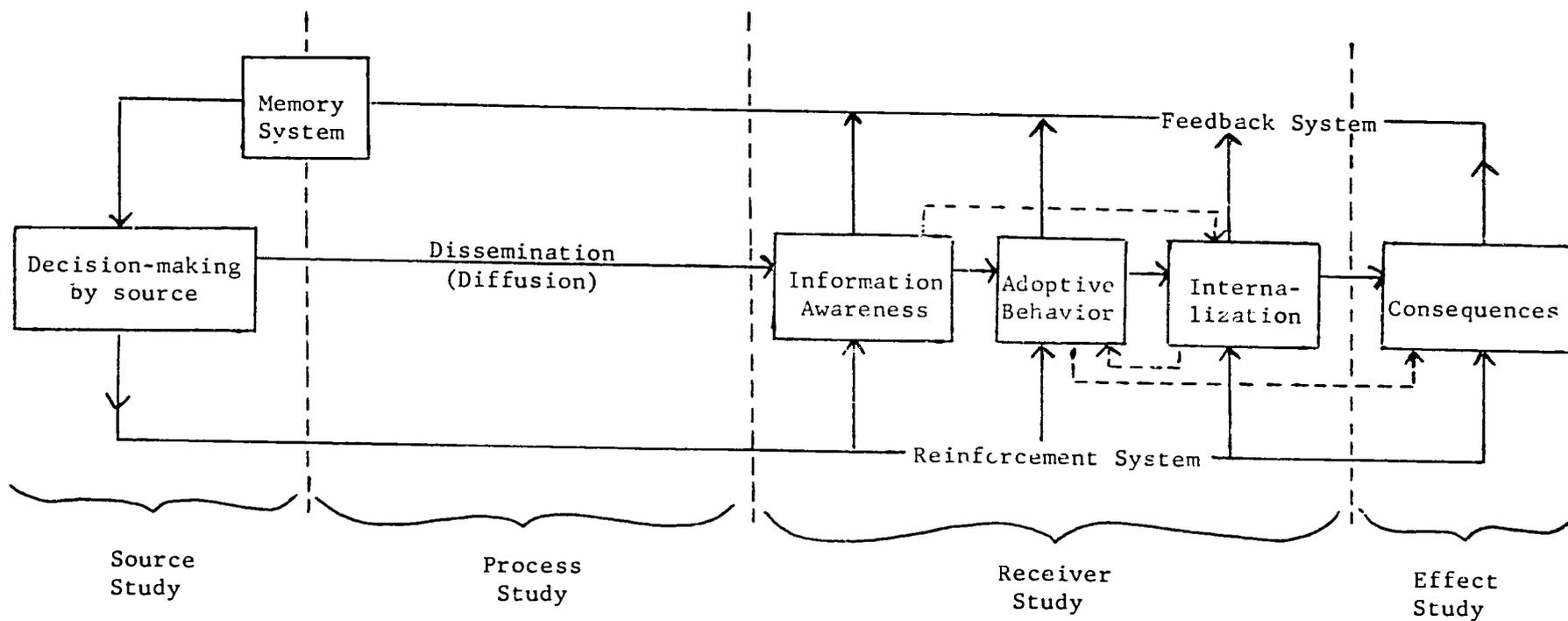
The model is comprised of five basic parts:

1. Source: In an institution, the source is usually a high level office which has decision-making and message construction functions in terms of initiating and regulating change in the institution.
2. The dissemination or diffusion process: In an institution, this process encompasses (a) the sequence of offices through which information

the top of the hierarchial structure are a limited number of offices in charge of all functions and products of the system; (4) within each office are specific positions which have specific roles in terms of the functions and products of the system; (5) rewards and punishments are regulated according to established rules which usually specify the required competence of the occupant of the position; (6) operational communication and interaction, except in infrequent, deliberately arranged occasions, takes place along the lines of hierarchial structure (Lin, 1966). Although these attributes may not be found in some social systems commonly referred to as "organizations," they constitute the fundamental features which make organizations differentiable from other types of systems.

¹Diffusion is defined in a limited sense as the process of message transmission from one component of a system through a second and later components of the system; the second, and each succeeding, component acting as both receiver and transmitter of the message. Dissemination is a similar process but has three more ingredients: (1) the system within which the transmission takes place is well defined; (2) the transmission is a deliberate effort on the part of the source component; (3) the description and control of the transmission process within the system is more or less complete and precise (Lin, 1966).

Figure 3. A Model of Innovation Dissemination in an Institution*



—→ Time order relationships
 - - - → Alternate time order relationships

*Adopted from Lin (1966).

is transmitted, (b) the input and output behavior of these offices, and (c) the linkages (channels) between offices.

3. The receiver of information: In terms of institutional change, the receiver is defined as the member whose function or role is directly affected by the change initiated by a source. At least three elements (how and when he becomes aware of information about an innovation, how and when he adopts the innovation, and the extent of his attitudinal commitment to the innovation) deserve attention.¹

4. The consequences of adoption: Assessment of the consequences of an institutional change includes the effects of information about a change and of the change itself on the members, on the functions and products of the organization, on the immediate environment (suprasystem) and on society.

5. The control system: It consists of three elements: the feedback system, the memory (storage) system, and the reinforcement system.

A brief functional description of the model begins with the source. When a change or a set of potential changes is presented to the source from either external or internal planners, he has to decide, first of all, if change should be initiated. Then, he has to select the procedures for initiating the change(s) which, through past experience and/or empirical evidence, is expected to bring about the optimal intended effect in the institution. The source has the responsibility of constructing messages to inform the members about the planned change (the source may delegate this task to an office). These messages are

¹The time order of adoption behavior and internalization is an interesting research topic. Further research should attempt to determine the conditions under which adoption behavior precedes or follows internalization.

disseminated in the institution through various branches (offices) along the hierarchical chain (it should be noted that, for some changes, the dissemination process does not follow the hierarchical structure because mass media as well as personal channels are utilized). The receiving member is exposed to this information with an expectation of adoption behavior. A member may either attitudinally commit himself to the change or he may resist it. The extent of his internalization of the change reflects his attitudinal position. A series of consequences of the change follow from the adoption behavior of the member(s). Information concerning the discrepancy between the actual consequences and those expected is one of the control functions facilitated by the feedback system. This system may alert the source to possible undesirable side-effects the change may foster in the members, in their roles and functions, in the products of the organization, or in the relevant suprasystem. This information is fed into the memory system and processed for presentation to the source. The source evaluates this information and may make another series of decisions which involve adjusting the dissemination-reinforcement process and the enactment of the change.

In the present study, it was found that information awareness and innovation internalization were indeed significant variables in school systems where an innovation was introduced. Evidence was found regarding the relationships between the decision-making process and innovation adoption, between the source (the principal) and the receiver (the teacher), and among innovation awareness, internalization and receiver characteristics. Consequences of a change and feedback problems were touched on only lightly. In general, the model was useful for the present research and suggests a potential guideline for future institution-building research.

Discussion

While the empirical findings and theoretical insights gleaned from the present investigation are encouraging, a great deal remains to be learned about the process of institutional change, particularly in educational institutions. The following comments are offered with a view toward encouraging the advancement of research in this area.

1. This study should be replicated in different types of educational institutions (e.g., non-innovative secondary schools, elementary schools, colleges) and in other types of institutions (e.g., industrial or business organizations).

2. Cross-cultural replication would have practical and theoretic value. The present investigators currently are involved in a comparable study, under the same sponsorship, of the diffusion of educational innovations in Thailand--the first attempt of its kind in that cultural setting. Cross-cultural comparison of the present findings, to be reported within a year, promise to yield greater theoretical insight into the processes of institution building.

3. Emphasis should be put on study of the consequences resulting from adoption of innovations in an institution, as well as on the components and functions of institutional feedback and reinforcement systems. The latter largely have been ignored in previous research.

Any educational innovation should be evaluated in terms of its impact, positive and negative, upon the students and the school system as a whole. Innovation diffusion studies usually have been undergirded by the assumption that innovation or change is by definition desirable. The assumption is hypothetical and implies prejudgement of the positive and negative consequences of the change. Certain instances of resistance

to change may be justifiable. Thus, study of the consequences of change should occupy a priority position in future research efforts (Rogers, 1965).

The problems involving speedy and accurate feedback on the progress and effects of change programs are only too obvious in most institutions. Past diffusion research has attended primarily to the problem of how to diffuse information and change down to the members of the institution, but has seldom investigated the processes involved in the feedback of information and reaction to the source or originator of the change. If planned change programs are to be more than "blind" dissemination efforts, evidence is necessary on the total change process which includes the functions of feedback and reinforcement systems.

4. The present study, plus the results of the Thailand study, should provide a springboard for further exploration of the proposed model. A detailed, comprehensive study, involving a national sample of educational institutions at all levels, would be both theoretically and socially significant. The study currently underway in Thailand, involving a national sample of secondary schools, demonstrates the feasibility of such an undertaking, at least in that setting.

The present study, although exploratory in nature, has provided some insight into the process of innovation diffusion and assimilation among teachers in innovative secondary schools. Further investigations are anticipated which will contribute to the development of theory and practice in institution building through change.

BIBLIOGRAPHY

- Administrative Science Quarterly, Vol. 10, No. 1, June, 1965.
- Allport, Floyd H. Theories of Perception and the Concept of Structure. New York: John Wiley & Sons, 1964.
- Austin, David B. and Noble Gividen. The High School Principal and Staff Develop The Master Schedule. New York: Bureau of Publications, Teachers College, Columbia University, 1960.
- Barnard, Chester I. The Functions of the Executive. Cambridge, Mass.: Harvard University Press, 1938.
- Bass, Bernard M. Organizational Psychology. Boston: Allyn & Bacon, 1965.
- Berlo, David K., James B. Lemert, and Robert J. Mertz. "Dimensions for Evaluating the Acceptability of Message Sources," Unpublished paper, Department of Communication, Michigan State University, 1966.
- Blumer, Herbert. "Attitudes and Social Act," Social Problems, Vol. 3, 1955, pp. 59-65.
- Caplow, Theodore, and John J. Raymond. "Factors Influencing the Selection of Pharmaceutical Products," Journal of Marketing, Vol. 19, 1954, pp. 18-23.
- Carlson, Richard O. Adoption of Educational Innovations. Eugene, Oregon: Center for the Advanced Study of Educational Administration, University of Oregon, 1965.
- _____ (ed.). Change Processes in the Public Schools. Eugene, Oregon: Center for the Advanced Study of Educational Administration, University of Oregon, 1965.
- Changing Times. "Are Schools Changing Too Much Too Fast?", Vol. 20, No. 9, 1966.
- Coch, Lester, and John R.P. French, Jr. "Overcoming Resistance to Change," Human Relations, Vol. 1, 1948, pp. 512-532.
- Coleman, A. Lee. Some Aspects of Human Relations in Soil Conservation. Washington, D.C.: U.S.D.A., B.A.E. Unpublished report, 1946.
- Coleman, A. Lee, and C. Paul March. "Differential Communication Among Farmers in a Kentucky County," Rural Sociology, Vol. 20, 1955, pp. 93-101.
- Coleman, James S., et al. "The Diffusion of an Innovation," Sociometry, Vol. 20, 1957, pp. 253-270.
- _____. The Adolescent Society. New York: Free Press of Glencoe, 1961.
- Committee on Work in Industry, National Research Council. Fatigue of Workers: Its Relation to Industrial Production. New York: Reinhold, 1941.

- Comrey, Andrew L., Wallace, High, and Robert C. Wilson. "Factors Influencing Organizational Effectiveness. VI: A Survey of Aircraft Workers," Personnel Psychology, Vol. 8, 1955, pp. 79-100.
- Costello, Timothy W., and Sheldon S. Zalkind. Psychology in Administration. New Jersey: Prentice-Hall, 1963.
- Couch, Carl J. "Communication and Change," Unpublished report, Institute for Extension Personnel Development, Michigan State University, 1964.
- Deutsch, Karl W. "On Communication Models in the Social Sciences," Public Opinion Quarterly, Vol. 16, 1952, pp. 356-380.
- Deutschmann, Paul J. "A Model for Machine Simulation of Information and Attitude Flow," Unpublished paper, San Jose, Costa Rica: Program Interamericano de Informacion Popular, 1962.
- Deutschmann, Paul J., and Wayne Danielson. "Diffusion of the Major News Story," Journalism Quarterly, Vol. 37, 1960, pp. 345-355.
- Deutschmann, Paul J., and Orlando Fals Borda. Communication and Adoption Patterns in an Andean Village. San Jose, Costa Rica: Programa Interamericano de Informacion Popular, 1962.
- Etzioni, Amitai (ed.). Complex Organizations: A Sociological Reader. New York: Holt, Rinehart and Winston, 1964.
- Festinger, Leon and J. Thibault. "Interpersonal Communication in Small Groups," Journal of Abnormal and Social Psychology, Vol. 46, 1951, pp. 92-99.
- Fleishmann, E., E. Harris, and H. Buitt. Leadership and Supervision in Industry: An Evaluation of a Supervisory Training Program. Columbus, Ohio: Ohio State University Bureau of Educational Research, 1955.
- French, John P., Joachim Israel, and Dagfinn As. "An Experiment on Participation in a Norwegian Factory," Human Relations, Vol. 13, 1960, pp. 3-19.
- Friedrich, Carl J. "Some Observations on Weber's Analysis of Bureaucracy," in Robert Merton (ed.), Reader in Bureaucracy. New York: Free Press, 1952, pp. 27-33.
- Garvey, William D., and Belver C. Griffith. Reports of the American Psychological Association's Project on Scientific Information Exchange in Psychology. Washington, D.C.: American Psychological Association, Vol. 1, 1963 and Vol. 2, 1965.
- _____. "Scientific Communication: The Dissemination System in Psychology and a Theoretical Framework for Planning Innovations," American Psychologist, Vol. 20, 1965, pp. 157-164.
- Greenberg, Bradley S. "Diffusion of News of the Kennedy Assassination," Public Opinion Quarterly, Vol. 28, 1964, pp. 225-232.
- Greenberg, Bradley S., and Edwin Parker (eds.). The Kennedy Assassination and the American Public. Stanford, California: Stanford University Press, 1965.

- Griffiths, Daniel E. "Administrative Theory and Change in Organization," in Matthew B. Miles (ed.), Innovation in Education. New York: Bureau of Publications, Teachers College, Columbia University, 1964, pp. 425-436.
- _____. Behavioral Science and Educational Administration, The 63rd Yearbook of the National Society for the Study of Education. Chicago: University of Chicago Press, 1964.
- Guion, Robert M. "Industrial Morale: The Problems of Terminology," Personnel Psychology, Vol. 11, 1958, pp. 59-64.
- Hagerstrand, Torsten. The Propagation of Innovation Waves. Lund, Sweden: Lund Studies in Geography, 1952.
- _____. "A Monte Carlo Approach to Diffusion," European Journal of Sociology, Vol. 6, 1965, pp. 43-67.
- Hall, Milton. "Supervising People: Closing the Gap Between What We Think and What We Do," Advanced Management, Vol. 12, 1947, pp. 129-135.
- Havelock, Ronald G., and Kenneth D. Benne. "An Exploratory Analysis of Knowledge Utilization," Mimeographed report, Center for Research on the Utilization of Scientific Knowledge, University of Michigan, 1965.
- Homans, George. The Human Group. New York: Harcourt, Brace, & World, Inc., 1950.
- _____. Social Behavior: Its Elementary Forms. New York: Harcourt, Brace and World, Inc., 1961.
- Karlsson, Georg. Social Mechanisms: Studies in Sociological Theory. New York: Free Press, 1958.
- Katz, Elihu, and Herbert Menzel. "On the Flow of Scientific Information in the Medical Profession," Mimeographed report, Columbia University Bureau of Applied Social Research, 1954.
- Katz, Elihu. "Notes on the Unit of Adoption in Diffusion Research," Sociological Inquiry, Vol. 32, No. 1, 1962, pp. 3-9.
- _____. "The Social Itinerary of Technical Change: Two Studies on the Diffusion of Innovation," in W. Schramm (ed.), Studies of Innovation and of Communication to the Public. Stanford, California: Stanford University Institute for Communication Research, 1962.
- Katz, Daniel, and Robert L. Kahn. The Social Psychology of Organizations. New York: John Wiley, 1966.
- Kelman, Herbert C. "Processes of Opinion Change," Public Opinion Quarterly, Vol. 25, 1961, pp. 57-78.
- Kutner, Bernard, Carol Wilkins, and Penny Rechtman Yarrow. "Verbal Attitudes and Overt Behavior Involving Racial Prejudices," Journal of Abnormal and Social Psychology, Vol. 47, 1952, pp. 649-652.
- La Piere, Richard T. "Attitudes versus Actions," Social Forces. Vol. 13, 1934, pp. 230-237.

- Lemert, James B. "Dimensions of Source Credibility," Paper presented to the Association for Education in Journalism, Department of Communication, Michigan State University, 1963.
- Levine, Jacob, and John Butler. "Lecture versus Group Decision in Changing Behaviors," in D. Cartwright, and A. Zander (eds.), Group Dynamics. Evanston, Ill.: Row Peterson, 1952, pp. 280-286.
- Leu, D.J., and H.C. Rudman. Preparation Programs For School Administrators, College of Education, Michigan State University, 1963.
- Levinson, David J. "Reciprocation: The Relationship Between Man and Organization," Administrative Science Quarterly, Vol. 9, 1965, pp. 370-390.
- Lewin, Kurt. "Group Decision and Social Change," in Maccoby, Newcomb and Hartley, Readings in Social Psychology, 3rd ed. New York: Holt, Rinehart and Winston, 1958, pp. 197-211.
- Likert, Rensis. New Patterns of Management. New York: McGraw-Hill, 1961.
- Lin, Nan. Innovation Internalization in a Formal Organization, Unpublished Ph.D. Dissertation, Department of Communication, Michigan State University, 1966.
- Lionberger, Herbert F. "The Diffusion of Farm and Home Information As an Area of Sociological Research," Rural Sociology, Vol. 17, 1952, pp. 132-140.
- _____. Adoption of New Ideas and Practices: A Summary of the Research Dealing With the Acceptance of Technological Change in Agriculture, With Implications For Action in Facilitating Social Change. Ames, Iowa: Iowa State University Press, 1960.
- McNemar, Quinn. Psychological Statistics. New York: John Wiley, 1963.
- Maccoby, N., A.K. Romney, J.S. Adams, and Eleanor E. Maccoby. "Critical Periods in Seeking and Accepting Information," Paris-Stanford Studies in Communication. Stanford California: Institute for Communication Research, Stanford University, 1962.
- Maier, N.R.F., L.R. Hoffman. "Financial Incentives and Group Decision in Motivating Change," Journal of Social Psychology, Vol. 64, 1964, pp. 369-378.
- Mandell, Milton M., and Pauline Duckworth. "The Supervisor's Job: A Survey," Personnel, Vol. 31, 1955, pp. 456-462.
- Mann, F.C. "Studying and Creating Change: A Means to Understanding Social Organization," in C. Arensberg, et al. (eds.), Research in Industrial Human Relations. New York: Harper and Row, 1957.
- March, J.G. Handbook of Organizations. Chicago: Rand & McNally Co., 1966.
- Mechanic, David. "The Power to Resist Change Among Low-Ranking Personnel," Personnel Administration, Vol. 26, 1963, pp. 5-11.
- Merton, Robert K., et al. Reader in Bureaucracy. New York: Free Press, 1952.
- _____. Social Theory and Social Structure. New York: Free Press, 1957.

- Miles, Matthew B. (ed.). Innovation in Education. New York: Bureau of Publications, Teachers College, Columbia University, 1964.
- Miller, James G. "Living Systems," Behavioral Science, Vol. 10, No. 3 and No. 4, 1965, pp. 193-237, 337-411.
- Mort, Paul R., and Francis G. Cornell. Adaptability of Public School Systems. New York: Bureau of Publications, Teachers College, Columbia University, 1938.
- North Central Rural Sociology Subcommittee for the Study of Diffusion of Farm Practices. How Farm People Accept New Ideas. Ames, Iowa: Iowa Agricultural Extension Service Special Report, 1955.
- Parsons, Talcott. The Social System. New York: Free Press, 1951.
- Parsons, Talcott, and Edwards A. Shils (eds.). Toward a General Theory of Action. New York: Harper and Row, 1951.
- Pelz, Edith B. "Some Factors in 'Group Decision'," in Maccoby, Newcomb and Hartley (eds.), Readings in Social Psychology, 3rd ed. New York: Holt, Rinehart & Winston, 1958, pp. 212-213.
- Pitts, Forest R. "Problems in Computer Simulation of Diffusion," Regional Science Association Papers, Vol. 2, 1962.
- Powell, Fredric A. "Open- and Closed-Mindedness and the Ability to Differentiate Source and Message," Journal of Abnormal and Social Psychology, Vol. 65, 1962, pp. 47-52.
- Rahim, S.A. The Diffusion and Adoption of Agricultural Practices: A Study in a Village in East Pakistan. Comilla: Pakistan Academy for Village Development, 1961.
- Rogers, Everett M. Diffusion of Innovations. New York: Free Press, 1962.
- _____. "Toward a New Model for Educational Change," Paper presented at the Conference on Strategies for Educational Change, Washington, D.C., Department of Communication, Michigan State University, 1965.
- Rogers, Everett M., and David G. Cartano. "Methods of Measuring Opinion Leadership," Public Opinion Quarterly, Vol. 26, 1962, pp. 435-441.
- Rogers, Everett M., and F. Floyd Shoemaker. Diffusion of Innovations: A Communication and Cross-Cultural Approach, Draft of revised edition, 1966.
- Rokeach, Milton. The Open and Closed Mind. New York: Basic Books, 1960.
- Ross, D.H. Administration for Adaptability. New York: Metropolitan School Study Council, 1958.
- Roy, Donald. "Efficiency and the 'Fix': Informal Group Relations in a Piece-Work Machine Shop," American Journal of Sociology, Vol. 60, 1954, pp. 255-266.
- Ryan, Bryce, and Neal C. Gross. "The Diffusion of Hybrid Seed Corn in Two Iowa Communities," Rural Sociology, Vol. 8, 1943, pp. 15-24.

- Seashore, Stanley E. Group Cohesiveness in the Industrial Work Group. Ann Arbor, Michigan: Survey Research Center, Institute for Social Research, University of Michigan, 1954.
- Simon, Herbert A. "Decision-Making and Administrative Organization," Public Administration Review, Vol. 4, 1944, pp. 16-25.
- _____. Administrative Behavior. New York: Macmillan Company, 1945.
- Tannenbaum, Arnold S. Social Psychology of the Work Organization. Belmont, California: Wadsworth Publishing Company, 1966.
- Troldahl, Verling C., and Fredric A. Powell. "A Short Form Dogmatism Scale for Use in Field Studies," Social Forces, Vol. 44, 1965.
- Vidulich, Robert N., and Iban P. Kaiman. "The Effects of Information Source Status and Dogmatism Upon Conformity Behavior," Journal of Abnormal and Social Psychology, Vol. 63, 1961, pp. 639-642.
- Vroom, Victor H. Some Personality Determinants of the Effects of Participation. Englewood Cliffs, New Jersey: Prentice-Hall, 1960.
- Walker, Helen M., and Joseph Lev. Statistical Inference. New York: Holt, Rinehart and Winston, 1953.
- Weber, Max. The Theory of Social and Economic Organization. England: Oxford University Press, 1947, pp. 329-340.
- Wiener, Norbert. The Human Use of Human Beings. New York: Houghton Mifflin Company, 1950.
- Winick, Charles. "The Diffusion of an Innovation Among Physicians in a Large City," Sociometry, Vol. 24, 1961, pp. 384-396.
- Wilkening, Eugene A. "A Socio-psychological Approach to the Study of the Acceptance of Innovations in Farming," Rural Sociology, Vol. 15, 1950, pp. 352-364.

APPENDICES

APPENDIX A
SUMMARY OF FINDINGS

Independent Variables	Correlation ¹ With Dependent Variables		
	1. Time of awareness	2. Internalization	3. Self-Perceived Change Orientation
I. Demographic			
1. Age	0.24**	-0.13	-0.23*
2. Educational level attained . . .	0.22*	0.25**	0.09
3. Teaching salary	0.18*	-0.06	-0.11
4. Non-teaching income	0.07	0.21*	0.04
5. Number of courses taken in the natural and physical sciences . .	0.01	-0.02	0.13
II. Institutional			
A. Role Perceptions			
1. Role satisfaction	0.13	0.15	0.28**
2. Feelings of security	0.09	-0.07	0.03
3. Self-rated teaching ability	0.13	0.20*	0.10
4. Perceived peer-rating of teaching ability	0.16	0.14	0.08
5. Perceived principal-rating of teaching ability	0.09	0.19*	0.09

¹Pearson product moment zero-order correlation coefficient.

*Significantly different from zero at the five percent level, two alternative test, N=119.

**Significantly different from zero at the one percent level, two-alternative test, N=119.

Independent Variables	Dependent Variables		
	1.	2.	3.
6. Perceived student-rating of teaching ability	0.13	0.17	0.07
B. Perceptions of Superiors and Superior Relations			
1. Perceived psychological distance between self and principal	-0.03	-0.01	-0.19*
2. Perceived psychological distance between other teachers and principal	0.04	-0.09	-0.26**
3. Perceived source credibility of principal	0.03	0.19*	0.20*
4. Reported performance feedback from the principal	0.22*	0.15	0.26**
5. Perceived change orientation of the principal	0.02	0.16	0.42**
6. Perceived vertical communication with the principal	-0.11	-0.02	0.06
7. Perceived level of participation in work-related problem-solving and decision-making	0.09	0.18*	0.27**
8. Perceived legitimacy of participation	0.13	0.27**	0.17
9. Perceived equalitarian relationship with the principal	0.06	-0.01	0.15
10. Perceived department chairman's support of the innovation	0.08	0.12	0.02
11. Perceived superintendent's support of the innovation	0.00	0.28**	0.07
12. Perceived principal's support of the innovation	0.09	0.10	-0.04
C. Perceptions of Peers and Peer Relations			
1. Self-designated opinion leadership score	0.12	0.27**	0.15
2. Peer-ascribed opinion leadership score	0.12	0.05	-0.18*

Independent Variables	Dependent Variables		
	1.	2.	3.
3. Perceived cohesiveness of school faculty	0.23*	0.17	0.23*
4. Group innovation internalization norm for each teacher's designated opinion leaders . .	-0.07	0.20*	0.13
5. Perceived frequency of general horizontal communication . . .	-0.20*	0.15	0.02
6. Perceived frequency of horizontal communication about the innovation	0.20*	0.25**	0.14
D. Perceptions of Students			
1. Perceived student benefits from the innovation	0.11	0.60**	0.55**
2. Perceived importance of student reactions to the innovation	-0.30**	-0.03	-0.03
3. Perceived student attitude toward the innovation	0.00	0.40**	0.24**
4. Perceived student receptivity to the innovation (composite score; 1 & 3 above)	0.07	0.60**	0.48**
E. Perceptions of School Procedural Changes Resulting from Adoption of the Innovation			
1. Perceived changes in class procedures	0.06	0.05	0.02
2. Perceived changes in administrative procedures	0.03	-0.09	0.03
3. Perceived changes in class and administrative procedures (composite score; 1 & 2 above)	0.05	-0.03	0.03
F. Extra-Institutional Relations			
1. Orientation to non-peers	0.05	-0.06	-0.04
2. Peer-ascribed community status based on respect as a teacher	0.11	0.03	-0.20*
3. Peer-ascribed community status based on activity in community affairs	0.13	0.17	0.06

Independent Variables	Dependent Variables		
	1.	2.	3.
4. Peer-ascribed community status (composite score; 2 & 3 above)	0.14	0.12	-0.09
III. Communication Behavior			
A. General Communication Behavior			
1. General mass media exposure	0.12	0.01	0.02
2. Number of non-professional journals read regularly	0.11	0.03	-0.03
B. Professional Communication Behavior			
1. Number of professional jour- nals read regularly	0.01	0.22*	0.10
2. Frequency of professional meeting attendance	-0.09	0.17	0.01
3. Number of organizational mem- berships	0.11	0.26**	0.01
4. Information level about local and state education activities	-0.03	0.21*	-0.03
5. Accuracy of information about the number of school-adopted innovations	0.16	0.07	0.08
6. Information level about school use of the innovation	0.03	0.18*	0.09
7. Perceived adequacy of informa- tion about the innovation	0.23*	0.37**	0.30**
IV. Perception of the Innovation			
1. Perceived divisibility of the innovation	0.13	-0.12	-0.10
2. Desirability of limited trial use of the innovation	0.12	-0.18*	-0.13
V. Psychological and Personality			
1. Dogmatism	-0.09	-0.14	-0.23*
2. Need for autonomy	0.06	-0.06	0.01
3. Cosmopolite orientation	0.05	0.10	0.06

Dependent variable correlations: $r_{12}=0.08$, $r_{13}=0.21$, $r_{23}=0.50$

APPENDIX B

VARIABLE LIST FOR THE QUESTIONNAIRE

Variables	Questionnaire Item Number(s)
DEPENDENT VARIABLES	
I. Time of Awareness	14
II. Time of Adoption	16
III. Internalization	11, 13, 28, 29
IV. Self-Perceived Change Orientation	104-107
INDEPENDENT VARIABLES	
I. Demographic	
1. Age	198
2. Educational level attained . .	200
3. Teaching salary	195
4. Non-teaching income	196
5. Number of courses taken in the Natural and physical sciences	173
II. Institutional	
A. Role Perceptions	
1. Role satisfaction	100-103
2. Feelings of security . . .	93-95
3. Self-rated teaching ability	108-117
4. Perceived peer-rating of teaching ability	131-140
5. Perceived principal-rating of teaching ability	146-155
6. Perceived student-rating of teaching ability	174-183
B. Perceptions of superiors and superior relations	
1. Perceived psychological dis- tance between self and principal	66-71

Variables	Questionnaire Item Number(s)
2. Perceived psychological distance between other teachers and principal . .	60-65
3. Perceived source credibility of principal	184-193
4. Reported performance feedback from the principal . .	72-75
5. Perceived change orientation of the principal . . .	76-79
6. Perceived vertical communication with the principal	80, 81
7. Perceived level of participation in work-related problem-solving and decision-making	82, 83
8. Perceived legitimacy of participation	84-86
9. Perceived equalitarian relationship with the principal	87, 89, 90
10. Perceived department chairman's support of the innovation	18
11. Perceived superintendent's support of the innovation .	19
12. Perceived principal's support of the innovation . .	20
C. Perceptions of peers and peer relations	
1. Self-designated opinion leadership score	122-127
2. Peer-ascribed opinion leadership score	118-120
3. Perceived cohesiveness of school faculty	96-99
4. Group innovation internalization norm for each teacher's designated opinion leader .	118-120, 11, 13, 28, 29
5. Perceived frequency of general horizontal communication	91, 92

Variables	Questionnaire Item Number(s)
6. Perceived frequency of horizontal communication about the innovation . . .	24
D. Perceptions of Students	
1. Perceived student benefits from the innovation	21
2. Perceived importance of student reactions to the innovation	12
3. Perceived student attitude toward the innovation . . .	22
4. Perceived student receptivity to the innovation (composite score; 1 & 3 above)	21, 22
E. Perceptions of school procedural changes resulting from adoption of the innovation	
1. Perceived changes in class procedures	27
2. Perceived changes in administrative procedures . . .	30
3. Perceived changes in class and administrative procedures (composite score; 1 & 2 above)	27, 30
F. Extra-institutional relations	
1. Orientation to non-peers .	141
2. Peer-ascribed community status based on respect as a teacher	129
3. Peer-ascribed community status based on activity in community affairs	130
4. Peer-ascribed community status (composite score; 2 & 3 above)	129, 130
III. Communication Behavior	
A. General communication behavior	
1. General mass media exposure	1-8

Variables	Questionnaire Item Number(s)
2. Number of non-professional journals read regularly . .	170
B. Professional communication behavior	
1. Number of professional journals read regularly . .	168
2. Frequency of professional meeting attendance	167
3. Number of organizational memberships	166
4. Information level about local and state education activities	156-160
5. Accuracy of information about the number of school adopted innovations	9
6. Information level about school use of the innovation	34, 36
7. Perceived adequacy of information about the innovation	23
IV. Perception of the Innovation	
1. Perceived divisibility of the innovation	25
2. Desirability of limited trial use of the innovation	26
V. Psychological and Personality	
1. Dogmatism	37-56
2. Need for autonomy	57-59
3. Cosmopolite orientation . . .	162-165
OTHER ITEMS	
1. Response Set Item	88
2. Advantages and Disadvantages of the Innovation	31-33
3. Sources of Innovation Information	171
4. Decision-Making Processes	194

APPENDIX C

THE QUESTIONNAIRE

Michigan State University Opinion Survey of Secondary Educators

With support from the Ford Foundation, four major universities and the Agency for International Development, Michigan State University is conducting a study to investigate the opinions of secondary educators on various crucial educational issues. The emphasis of the study is upon communication behavior and diffusion processes in the school systems.

We were interested in the types and groups of opinions that secondary educators may have rather than individual characteristics. Please do not place your name on the questionnaire. Your opinions will be read and studied by the Michigan State University research team only and will be kept in strictest confidence.

Please help this important study by carefully and honestly completing each item. Significant and meaningful results can be achieved only if you do not skip any items.

Thank you for your cooperation.

Donald J. Leu, Co-Director
Everett M. Rogers, Co-Director
Nan Lin, Research Associate
Fred Mortimore, Research Associate
Natalie Sproull, Research Associate

Michigan State University
December, 1965

PLEASE CIRCLE THE NUMBER OF THE APPROPRIATE RESPONSE FOR EACH ITEM AND
FILL IN THE CORRESPONDING FIGURES.

Example:

I went to see a movie yesterday.

1. No 2. Yes

How many features? 1

You may begin now. If you have any questions, raise your hand and
one of us will be happy to speak with you.

1. I read newspaper(s) yesterday

1. No 2. Yes

How many? _____

2. I listened to radio yesterday

1. No 2. Yes

If the answer is yes, the program(s) I listened to
are:

- _____ music
_____ weather
_____ sports
_____ educational activities
_____ local news
_____ national and international news
_____ drama and/or comedy

3. I watched TV yesterday

1. No 2. Yes

The programs I watched were:

- _____ musicals
_____ weather
_____ sports
_____ educational activities
_____ local news
_____ national and international news
_____ drama and/or comedy

4. I read from one or more books yesterday (do not include school
materials).

1. No 2. Yes

I read from _____ (number of books) books.

5. I read magazines yesterday (do not include school materials).

1. No 2. Yes

How many? _____

6. I listened to the educational radio station yesterday.

1. No 2. Yes

The programs I listened to were:

- _____ music
- _____ weather
- _____ sports
- _____ educational activities
- _____ local news
- _____ national and international news
- _____ drama and/or comedy

7. I watched ETV yesterday.

1. No 2. Yes

The programs I watched were:

- 1. _____ 3. _____
- 2. _____ 4. _____

8. I read non-professional journals and/or periodicals yesterday.

1. No 2. Yes

They were:

- 1. _____ 3. _____
- 2. _____ 4. _____

9. Circle the ones in this list which are being used in your school.

- 1. Independent study.
- 2. Language laboratory.
- 3. Use of television.
- 4. Large group instruction.
- 5. Team-teaching.
- 6. Schedule modifications.
- 7. Non-graded school.
- 8. Programmed learning.
- 9. Instructional Materials Center
- 10. Computer scheduling.
- 11. New math.
- 12. B.S.C.S.

10. Among those which we haven't adopted, I have heard quite a bit about _____ (number) of them.

FOR THE FOLLOWING ITEMS, YOU MAY CIRCLE THE NUMBER OF THE ONE (AND ONLY ONE) CATEGORY WHICH YOU FEEL IS APPROPRIATE.

Example:

Teenagers in this country are very energetic compared with those in other countries.

- 1. strongly agree 4. somewhat disagree
- 2. somewhat agree 5. strongly disagree
- 3. not sure

For purposes of this study, schedule modification (flexible scheduling) is defined as a secondary school situation where class size, length of class meetings, number and spacing of classes are varied according to or assessment of the nature of the subject, type of instruction, and ability and interest of students.

11. Schedule modification could constitute an improvement in educational practices in any school.

- 1. agree very much 5. disagree a little
- 2. agree on the whole 6. disagree on the whole
- 3. agree a little 7. disagree very much
- 4. don't know

12. I think student reaction to any new method introduced into the schools should influence the decision to continue using it.

- 1. a great deal 4. very little
- 2. somewhat 5. not at all
- 3. not sure

13. I think schedule modification represents an improvement in educational practices at my school.

- 1. agree very much 5. disagree a little
- 2. agree on the whole 6. disagree on the whole
- 3. agree a little 7. disagree very much
- 4. don't know

14. I first heard about schedule modification in _____ (month) _____ (year).

15. To the best of my recollection, I first heard about schedule modification from . . .

- 1. A college instructor 5. A journal article
- 2. A fellow teacher 6. A book or equipment salesman
- 3. A supervisor 7. Other (Please specify)
- 4. At an education meeting _____

16. I first used schedule modification (if you have) in _____ (month) _____ (year).

17. I have since

- 1. increasingly utilized it
- 2. maintained using it
- 3. decreased using it
- 4. quit using it in _____ (month) _____ (year)

18. I think that my department chairman supports schedule modification
- | | |
|-------------------|------------------|
| 1. wholeheartedly | 4. not very much |
| 2. somewhat | 5. not at all |
| 3. not sure | |
19. I think our superintendent supports schedule modification
- | | |
|-------------------|------------------|
| 1. wholeheartedly | 4. not very much |
| 2. somewhat | 5. not at all |
| 3. not sure | |
20. I think the principal supports schedule modification
- | | |
|-------------------|------------------|
| 1. wholeheartedly | 4. not very much |
| 2. somewhat | 5. not at all |
| 3. not sure | |
21. My personal view regarding use of schedule modification is that the students . . .
- | | |
|---------------------|--------------------------|
| 1. benefit greatly | 4. do not benefit much |
| 2. benefit somewhat | 5. do not benefit at all |
| 3. not sure | |
22. Since we began using schedule modification my students' attitude toward it has been, on the whole,
- | | |
|---------------------------|----------------------------|
| 1. extremely enthusiastic | 4. not very enthusiastic |
| 2. quite enthusiastic | 5. not at all enthusiastic |
| 3. so, so | |
23. If asked to judge my knowledge of schedule modification I would consider myself to be . . .
- | | |
|----------------------------|-----------------------------|
| 1. extremely well informed | 4. not very well informed |
| 2. quite well informed | 5. not at all well informed |
| 3. about average | |
24. Compared with an average teacher in the school, I think I have discussed schedule modification with my fellow teachers in the school
- | | |
|---------------------|------------------------|
| 1. much oftener | 4. a little less often |
| 2. a little oftener | 5. much less often |
| 3. about as often | |
25. I believe it is quite possible to implement schedule modification using only a very small number of students before the decision is made to fully adopt it.
- | | |
|-----------------------|--------------------------|
| 1. agree very much | 5. disagree a little |
| 2. agree on the whole | 6. disagree on the whole |
| 3. agree a little | 7. disagree very much |
| 4. don't know | |

26. I believe that before implementing any new method in the schools, it is desirable to use this new method on a limited basis.

- | | |
|-----------------------|--------------------------|
| 1. agree very much | 5. disagree a little |
| 2. agree on the whole | 6. disagree on the whole |
| 3. agree a little | 7. disagree very much |
| 4. don't know | |

27. Adopting schedule modification requires substantial changes in the procedure of conducting the class.

- | | |
|-----------------------|--------------------------|
| 1. agree very much | 5. disagree a little |
| 2. agree on the whole | 6. disagree on the whole |
| 3. agree a little | 7. disagree very much |
| 4. don't know | |

28. I think schedule modification is unnecessary in our educational system.

- | | |
|-----------------------|--------------------------|
| 1. agree very much | 5. disagree a little |
| 2. agree on the whole | 6. disagree on the whole |
| 3. agree a little | 7. disagree very much |
| 4. don't know | |

29. To me, schedule modification is one of the worst things to come into our educational system.

- | | |
|-----------------------|--------------------------|
| 1. agree very much | 5. disagree a little |
| 2. agree on the whole | 6. disagree on the whole |
| 3. agree a little | 7. disagree very much |
| 4. don't know | |

30. The administrative procedures would have to be changed in order to adopt schedule modification into any school.

- | | |
|-----------------------|--------------------------|
| 1. agree very much | 5. disagree a little |
| 2. agree on the whole | 6. disagree on the whole |
| 3. agree a little | 7. disagree very much |
| 4. don't know | |

31. What are the disadvantages that you thought schedule modification would bring into the school?

32. What are the advantages that you thought schedule modification would bring into the school?

33. After weighing these possible problems, what was your personal conclusion?

1. schedule modification should be continued.
2. schedule modification should be discontinued.

34. Do you know approximately how many kinds of class period lengths are being used in your school?

1. No
2. Yes

There are:

_____ minute class
 _____ minute class
 _____ minute class
 _____ minute class

35. Do you happen to know what subject areas have meeting lengths varying from a typical 50-minute class?

1. No
2. Yes

They are:

36. Do you know when your school started using schedule modification?

1. No
2. Yes

Please specify the month and year.

in _____ (month), _____ (year)

37. In this complicated world of ours the only way we can know what's going on is to rely on leaders or experts who can be trusted.

- | | |
|-----------------------|--------------------------|
| 1. agree very much | 5. disagree a little |
| 2. agree on the whole | 6. disagree on the whole |
| 3. agree a little | 7. disagree very much |
| 4. don't know | |

38. My blood boils whenever a person stubbornly refuses to admit he's wrong.

- | | |
|-----------------------|--------------------------|
| 1. agree very much | 5. disagree a little |
| 2. agree on the whole | 6. disagree on the whole |
| 3. agree a little | 7. disagree very much |
| 4. don't know | |

39. There are two kinds of people in this world, those who are for the truth and those who are against the truth.
- | | |
|-----------------------|--------------------------|
| 1. agree very much | 5. disagree a little |
| 2. agree on the whole | 6. disagree on the whole |
| 3. agree a little | 7. disagree very much |
| 4. don't know | |
40. Most people just don't know what's good for them.
- | | |
|-----------------------|--------------------------|
| 1. agree very much | 5. disagree a little |
| 2. agree on the whole | 6. disagree on the whole |
| 3. agree a little | 7. disagree very much |
| 4. don't know | |
41. Of all the different philosophies which exist in this world, there is probably only one which is correct.
- | | |
|-----------------------|--------------------------|
| 1. agree very much | 5. disagree a little |
| 2. agree on the whole | 6. disagree on the whole |
| 3. agree a little | 7. disagree very much |
| 4. don't know | |
42. The highest form of government is a democracy and the highest form of democracy is a government run by those who are most intelligent.
- | | |
|-----------------------|--------------------------|
| 1. agree very much | 5. disagree a little |
| 2. agree on the whole | 6. disagree on the whole |
| 3. agree a little | 7. disagree very much |
| 4. don't know | |
43. The main thing in life is for a person to want to do something important.
- | | |
|-----------------------|--------------------------|
| 1. agree very much | 5. disagree a little |
| 2. agree on the whole | 6. disagree on the whole |
| 3. agree a little | 7. disagree very much |
| 4. don't know | |
44. I'd like it if I could find someone who would tell me how to solve my personal problems.
- | | |
|-----------------------|--------------------------|
| 1. agree very much | 5. agree a little |
| 2. agree on the whole | 6. disagree on the whole |
| 3. agree a little | 7. disagree very much |
| 4. don't know | |
45. Most of the ideas which get printed nowadays aren't worth the paper they are printed on.
- | | |
|-----------------------|--------------------------|
| 1. agree very much | 5. disagree a little |
| 2. agree on the whole | 6. disagree on the whole |
| 3. agree a little | 7. disagree very much |
| 4. don't know | |

46. Man on his own is a helpless and miserable creature.

- | | |
|-----------------------|--------------------------|
| 1. agree very much | 5. disagree a little |
| 2. agree on the whole | 6. disagree on the whole |
| 3. agree a little | 7. disagree very much |
| 4. don't know | |

47. It is only when a person devotes himself to an ideal or cause that life becomes meaningful.

- | | |
|-----------------------|--------------------------|
| 1. agree very much | 5. disagree a little |
| 2. agree on the whole | 6. disagree on the whole |
| 3. agree a little | 7. disagree very much |
| 4. don't know | |

48. Most people just don't give a "damn" for others.

- | | |
|-----------------------|--------------------------|
| 1. agree very much | 5. disagree a little |
| 2. agree on the whole | 6. disagree on the whole |
| 3. agree a little | 7. disagree very much |
| 4. don't know | |

49. To compromise with our political opponents is dangerous because it usually leads to the betrayal of our own side.

- | | |
|-----------------------|--------------------------|
| 1. agree very much | 5. disagree a little |
| 2. agree on the whole | 6. disagree on the whole |
| 3. agree a little | 7. disagree very much |
| 4. don't know | |

50. It is often desirable to reserve judgment about what's going on until one has had a chance to hear the opinions of those one respects.

- | | |
|-----------------------|--------------------------|
| 1. agree very much | 5. disagree a little |
| 2. agree on the whole | 6. disagree on the whole |
| 3. agree a little | 7. disagree very much |
| 4. don't know | |

51. The present is all too often full of unhappiness. It is only the future that counts.

- | | |
|-----------------------|--------------------------|
| 1. agree very much | 5. disagree a little |
| 2. agree on the whole | 6. disagree on the whole |
| 3. agree a little | 7. disagree very much |
| 4. don't know | |

52. The United States and Russia have just about nothing in common.

- | | |
|-----------------------|--------------------------|
| 1. agree very much | 5. disagree a little |
| 2. agree on the whole | 6. disagree on the whole |
| 3. agree a little | 7. disagree very much |
| 4. don't know | |

53. In a discussion I often find it necessary to repeat myself several times to make sure I am being understood.
- | | |
|-----------------------|--------------------------|
| 1. agree very much | 5. disagree a little |
| 2. agree on the whole | 6. disagree on the whole |
| 3. agree a little | 7. disagree very much |
| 4. don't know | |
54. While I don't like to admit this even to myself, my secret ambition is to become a great man, like Einstein, or Beethoven or Shakespeare.
- | | |
|-----------------------|--------------------------|
| 1. agree very much | 5. disagree a little |
| 2. agree on the whole | 6. disagree on the whole |
| 3. agree a little | 7. disagree very much |
| 4. don't know | |
55. Even though freedom of speech for all groups is a worthwhile goal, it is unfortunately necessary to restrict the freedom of certain political groups.
- | | |
|-----------------------|--------------------------|
| 1. agree very much | 5. disagree a little |
| 2. agree on the whole | 6. disagree on the whole |
| 3. agree a little | 7. disagree very much |
| 4. don't know | |
56. It is better to be a dead hero than to be a live coward.
- | | |
|-----------------------|--------------------------|
| 1. agree very much | 5. disagree a little |
| 2. agree on the whole | 6. disagree on the whole |
| 3. agree a little | 7. disagree very much |
| 4. don't know | |
57. When I have a problem I like to think it through myself first without help from others.
- | | |
|-----------------------|--------------------------|
| 1. agree very much | 5. disagree a little |
| 2. agree on the whole | 6. disagree on the whole |
| 3. agree a little | 7. disagree very much |
| 4. don't know | |
58. Everybody is responsible for his own life and no one else can live the life for him, so I make my own decisions and judgments.
- | | |
|-----------------------|--------------------------|
| 1. agree very much | 5. disagree a little |
| 2. agree on the whole | 6. disagree on the whole |
| 3. agree a little | 7. disagree very much |
| 4. don't know | |
59. I go ahead and do things which I believe are right, regardless of what other people would think.
- | | |
|-----------------------|--------------------------|
| 1. agree very much | 5. disagree a little |
| 2. agree on the whole | 6. disagree on the whole |
| 3. agree a little | 7. disagree very much |
| 4. don't know | |

60. The principal refuses to explain his actions to us teachers.
- | | |
|-----------------------|--------------------------|
| 1. agree very much | 5. disagree a little |
| 2. agree on the whole | 6. disagree on the whole |
| 3. agree a little | 7. disagree very much |
| 4. don't know | |
61. The principal acts without consulting teachers first.
- | | |
|-----------------------|--------------------------|
| 1. agree very much | 5. disagree a little |
| 2. agree on the whole | 6. disagree on the whole |
| 3. agree a little | 7. disagree very much |
| 4. don't know | |
62. He makes teachers feel at ease when speaking with him.
- | | |
|-----------------------|--------------------------|
| 1. agree very much | 5. disagree a little |
| 2. agree on the whole | 6. disagree on the whole |
| 3. agree a little | 7. disagree very much |
| 4. don't know | |
63. He is friendly and can be easily approached by teachers.
- | | |
|-----------------------|--------------------------|
| 1. agree very much | 5. disagree a little |
| 2. agree on the whole | 6. disagree on the whole |
| 3. agree a little | 7. disagree very much |
| 4. don't know | |
64. He is usually very warm and understanding when he talks with the teachers.
- | | |
|-----------------------|--------------------------|
| 1. agree very much | 5. disagree a little |
| 2. agree on the whole | 6. disagree on the whole |
| 3. agree a little | 7. disagree very much |
| 4. don't know | |
65. He mixes with the teachers very well even when there is no official business involved.
- | | |
|-----------------------|--------------------------|
| 1. agree very much | 5. disagree a little |
| 2. agree on the whole | 6. disagree on the whole |
| 3. agree a little | 7. disagree very much |
| 4. don't know | |
66. My principal usually doesn't explain his decisions to me about matters in which I am involved.
- | | |
|-----------------------|--------------------------|
| 1. agree very much | 5. disagree a little |
| 2. agree on the whole | 6. disagree on the whole |
| 3. agree a little | 7. disagree very much |
| 4. don't know | |

67. He acts on things which may involve me without consulting me first.

- | | |
|-----------------------|--------------------------|
| 1. agree very much | 5. disagree a little |
| 2. agree on the whole | 6. disagree on the whole |
| 3. agree a little | 7. disagree very much |
| 4. don't know | |

68. He makes me feel at ease when speaking with him.

- | | |
|-----------------------|--------------------------|
| 1. agree very much | 5. disagree a little |
| 2. agree on the whole | 6. disagree on the whole |
| 3. agree a little | 7. disagree very much |
| 4. don't know | |

69. He is friendly to me and I can easily approach him.

- | | |
|-----------------------|--------------------------|
| 1. agree very much | 5. disagree a little |
| 2. agree on the whole | 6. disagree on the whole |
| 3. agree a little | 7. disagree very much |
| 4. don't know | |

70. He is usually very warm and understanding when he talks to me.

- | | |
|-----------------------|--------------------------|
| 1. agree very much | 5. disagree a little |
| 2. agree on the whole | 6. disagree on the whole |
| 3. agree a little | 7. disagree very much |
| 4. don't know | |

71. He gets along with me very well even when there is no official business involved.

- | | |
|-----------------------|--------------------------|
| 1. agree very much | 5. disagree a little |
| 2. agree on the whole | 6. disagree on the whole |
| 3. agree a little | 7. disagree very much |
| 4. don't know | |

72. As compared with other teachers, the principal talks to me about my class room work . . .

1. much more frequently
2. more frequently
3. just about the same amount as he does other teachers
4. less frequently
5. much less frequently

73. He gives me encouragement in my work . . .

1. very frequently
2. quite frequently
3. just about the same amount as he does other teachers
4. quite infrequently
5. never

74. He offers suggestions to help improve my teaching performance . . .

1. very frequently
2. quite frequently
3. just about the same amount as he does other teachers
4. quite infrequently
5. never

75. He lets me know if he has heard any criticisms about my teaching performance . . .

1. very frequently
2. quite frequently
3. just about the same amount as other teachers
4. quite infrequently
5. never

How well do you think the principal would agree with the following four statements?

76. "Personally, I feel I can adjust to changes easily."

- | | |
|--------------------------------|-----------------------------------|
| 1. he would agree very much | 5. he would disagree a little |
| 2. he would agree on the whole | 6. he would disagree on the whole |
| 3. he would agree a little | 7. he would disagree very much |
| 4. he would not be sure | |

77. "Most changes introduced in the last ten years have contributed very little in promoting education in our schools."

- | | |
|--------------------------------|-----------------------------------|
| 1. he would agree very much | 5. he would disagree a little |
| 2. he would agree on the whole | 6. he would disagree on the whole |
| 3. he would agree a little | 7. he would disagree very much |
| 4. he would not be sure | |

78. "If we want to maintain a healthy, stable educational system we must keep it the way it is and resist the temptations to change."

- | | |
|--------------------------------|-----------------------------------|
| 1. he would agree very much | 5. he would disagree a little |
| 2. he would agree on the whole | 6. he would disagree on the whole |
| 3. he would agree a little | 7. he would disagree very much |
| 4. he would not be sure | |

79. "I really believe we could have done a much better job, or at least done just as well, if things hadn't been changed so much in our schools."

- | | |
|--------------------------------|-----------------------------------|
| 1. he would agree very much | 5. he would disagree a little |
| 2. he would agree on the whole | 6. he would disagree on the whole |
| 3. he would agree a little | 7. he would disagree very much |
| 4. he would not be sure | |

80. Compared with an average teacher he talks to me about discipline problems . . .
1. much more frequently
 2. more frequently
 3. about the same amount
 4. less frequently
 5. much less frequently
81. Compared with an average teacher, he talks to me about the problems of teaching my subject matter(s) . . .
1. much more frequently
 2. more frequently
 3. about the same amount
 4. less frequently
 5. much less frequently
82. I don't think I can influence the decisions of the principal regarding things about which I am concerned.
- | | |
|-----------------------|--------------------------|
| 1. agree very much | 5. disagree a little |
| 2. agree on the whole | 6. disagree on the whole |
| 3. agree a little | 7. disagree very much |
| 4. don't know | |
83. The principal usually asks my opinion when a problem comes up that involves my work.
- | | |
|-----------------------|--------------------------|
| 1. agree very much | 5. disagree a little |
| 2. agree on the whole | 6. disagree on the whole |
| 3. agree a little | 7. disagree very much |
| 4. don't know | |
84. It is unusual for me to take part in discussions which result in decisions regarding school problems and activities.
- | | |
|-----------------------|--------------------------|
| 1. agree very much | 5. disagree a little |
| 2. agree on the whole | 6. disagree on the whole |
| 3. agree a little | 7. disagree very much |
| 4. don't know | |
85. It isn't really the job of the teachers to take part in any decision-making discussions regarding the school matters.
- | | |
|-----------------------|--------------------------|
| 1. agree very much | 5. disagree a little |
| 2. agree on the whole | 6. disagree on the whole |
| 3. agree a little | 7. disagree very much |
| 4. don't know | |
86. If the superintendent or the principal wants to get anything done, he should go ahead, without asking teachers, with what he thinks will benefit the school.
- | | |
|-----------------------|--------------------------|
| 1. agree very much | 5. disagree a little |
| 2. agree on the whole | 6. disagree on the whole |
| 3. agree a little | 7. disagree very much |
| 4. don't know | |

87. The principal and I don't have any close friendship.
- | | |
|-----------------------|--------------------------|
| 1. agree very much | 5. disagree a little |
| 2. agree on the whole | 6. disagree on the whole |
| 3. agree a little | 7. disagree very much |
| 4. don't know | |
88. On the average, a senior student in high school is about 17 or 18 years old.
- | | |
|-----------------------|--------------------------|
| 1. agree very much | 5. disagree a little |
| 2. agree on the whole | 6. disagree on the whole |
| 3. agree a little | 7. disagree very much |
| 4. don't know | |
89. The principal likes me to talk with him the way a person chats with his buddy.
- | | |
|-----------------------|--------------------------|
| 1. agree very much | 5. disagree a little |
| 2. agree on the whole | 6. disagree on the whole |
| 3. agree a little | 7. disagree very much |
| 4. don't know | |
90. The relationship between my principal and me is more or less like a partnership.
- | | |
|-----------------------|--------------------------|
| 1. agree very much | 5. disagree a little |
| 2. agree on the whole | 6. disagree on the whole |
| 3. agree a little | 7. disagree very much |
| 4. don't know | |
91. Compared with an average teacher, I talk with other teachers about non-academic school activities . . .
1. much more frequently
 2. more frequently
 3. just about the same amount
 4. less frequently
 5. much less frequently
92. Compared with an average teacher, I talk with other teachers about discipline problems . . .
1. much more frequently
 2. more frequently
 3. just about the same amount
 4. less frequently
 5. much less frequently
93. I really don't feel secure and relaxed as a teacher in this school.
- | | |
|-----------------------|--------------------------|
| 1. agree very much | 5. disagree a little |
| 2. agree on the whole | 6. disagree on the whole |
| 3. agree a little | 7. disagree very much |
| 4. don't know | |

94. Compared with an average teacher, I would say I get along well with other teachers.
- | | |
|-----------------------|--------------------------|
| 1. agree very much | 5. disagree a little |
| 2. agree on the whole | 6. disagree on the whole |
| 3. agree a little | 7. disagree very much |
| 4. don't know | |
95. I really feel at home in this school as nothing makes me nervous or uneasy.
- | | |
|-----------------------|--------------------------|
| 1. agree very much | 5. disagree a little |
| 2. agree on the whole | 6. disagree on the whole |
| 3. agree a little | 7. disagree very much |
| 4. don't know | |
96. I feel I am really a part of this faculty.
- | | |
|-----------------------|--------------------------|
| 1. agree very much | 5. disagree a little |
| 2. agree on the whole | 6. disagree on the whole |
| 3. agree a little | 7. disagree very much |
| 4. don't know | |
97. If I had a chance to do the same kind of teaching for the same pay in another school, I would consider moving.
- | | |
|-----------------------|--------------------------|
| 1. agree very much | 5. disagree a little |
| 2. agree on the whole | 6. disagree on the whole |
| 3. agree a little | 7. disagree very much |
| 4. don't know | |
98. The teachers in this school get along with one another better than those in other schools in this district.
- | | |
|-----------------------|--------------------------|
| 1. agree very much | 5. disagree a little |
| 2. agree on the whole | 6. disagree on the whole |
| 3. agree a little | 7. disagree very much |
| 4. don't know | |
99. The teachers really help each other on the job in this school as compared with teachers in other schools in this district.
- | | |
|-----------------------|--------------------------|
| 1. agree very much | 5. disagree a little |
| 2. agree on the whole | 6. disagree on the whole |
| 3. agree a little | 7. disagree very much |
| 4. don't know | |
100. Generally speaking, I don't like being a teacher.
- | | |
|-----------------------|--------------------------|
| 1. agree very much | 5. disagree a little |
| 2. agree on the whole | 6. disagree on the whole |
| 3. agree a little | 7. disagree very much |
| 4. don't know | |

101. I like my teaching job in this school.
- | | |
|-----------------------|--------------------------|
| 1. agree very much | 5. disagree a little |
| 2. agree on the whole | 6. disagree on the whole |
| 3. agree a little | 7. disagree very much |
| 4. don't know | |
102. I am far from satisfied with the school environment here.
- | | |
|-----------------------|--------------------------|
| 1. agree very much | 5. disagree a little |
| 2. agree on the whole | 6. disagree on the whole |
| 3. agree a little | 7. disagree very much |
| 4. don't know | |
103. I have some very good reasons to refute the general feeling that anyone can be a teacher.
- | | |
|-----------------------|--------------------------|
| 1. agree very much | 5. disagree a little |
| 2. agree on the whole | 6. disagree on the whole |
| 3. agree a little | 7. disagree very much |
| 4. don't know | |
104. Personally, I feel I can adjust to changes easily.
- | | |
|-----------------------|--------------------------|
| 1. agree very much | 5. disagree a little |
| 2. agree on the whole | 6. disagree on the whole |
| 3. agree a little | 7. disagree very much |
| 4. don't know | |
105. If we want to maintain a healthy and stable educational system we must keep it the way it is and resist the temptations to change.
- | | |
|-----------------------|--------------------------|
| 1. agree very much | 5. disagree a little |
| 2. agree on the whole | 6. disagree on the whole |
| 3. agree a little | 7. disagree very much |
| 4. don't know | |
106. Most changes introduced in the last ten years have contributed very little in promoting education in our schools.
- | | |
|-----------------------|--------------------------|
| 1. agree very much | 5. disagree a little |
| 2. agree on the whole | 6. disagree on the whole |
| 3. agree a little | 7. disagree very much |
| 4. don't know | |
107. I really believe we could have done a much better job or at least done just as well if things hadn't been changed so much in our schools.
- | | |
|-----------------------|--------------------------|
| 1. agree very much | 5. disagree a little |
| 2. agree on the whole | 6. disagree on the whole |
| 3. agree a little | 7. disagree very much |
| 4. don't know | |

108. How would you rate yourself in teaching ability compared with secondary teachers in general?
- | | |
|-------------------|----------------------|
| 1. outstanding | 5. average |
| 2. among the best | 6. below average |
| 3. good | 7. among the poorest |
| 4. above average | |
109. Where would you rank your ability to become a teacher on closed circuit television?
- | | |
|-------------------|----------------------|
| 1. outstanding | 5. average |
| 2. among the best | 6. below average |
| 3. good | 7. among the poorest |
| 4. above average | |
110. Where would you rank your ability to be a supervising teacher for a student teacher?
- | | |
|-------------------|----------------------|
| 1. outstanding | 5. average |
| 2. among the best | 6. below average |
| 3. good | 7. among the poorest |
| 4. above average | |
111. How would you rate your ability to get along with students compared with teachers in general?
- | | |
|-------------------|----------------------|
| 1. outstanding | 5. average |
| 2. among the best | 6. below average |
| 3. good | 7. among the poorest |
| 4. above average | |
112. How would you rate your ability to enrich instruction (go beyond the book) compared with teachers in general?
- | | |
|-------------------|----------------------|
| 1. outstanding | 5. average |
| 2. among the best | 6. below average |
| 3. good | 7. among the poorest |
| 4. above average | |
113. Where would you rank your methods of teaching compared with other secondary teachers?
- | | |
|-------------------|----------------------|
| 1. outstanding | 5. average |
| 2. among the best | 6. below average |
| 3. good | 7. among the poorest |
| 4. above average | |
114. How would you rate yourself in teaching ability compared with other teachers who have the same number of years of teaching experience?
- | | |
|-------------------|----------------------|
| 1. outstanding | 5. average |
| 2. among the best | 6. below average |
| 3. good | 7. among the poorest |
| 4. above average | |

115. Where would you rank your methods of classroom discipline compared with other secondary teachers?

- | | |
|-------------------|----------------------|
| 1. outstanding | 5. average |
| 2. among the best | 6. below average |
| 3. good | 7. among the poorest |
| 4. above average | |

116. How would you rate yourself in ability to teach your major subject compared with other teachers of that subject?

- | | |
|-------------------|----------------------|
| 1. outstanding | 5. average |
| 2. among the best | 6. below average |
| 3. good | 7. among the poorest |
| 4. above average | |

117. Where would you rank your ability to teach an accelerated class?

- | | |
|-------------------|----------------------|
| 1. outstanding | 5. average |
| 2. among the best | 6. below average |
| 3. good | 7. among the poorest |
| 4. above average | |

118. Among the teachers in the school, name three whom you respect most as teachers.

- A. _____
 B. _____
 C. _____

119. Name three teachers whose opinions you most frequently seek when you have problems related to your teaching performance.

- A. _____
 B. _____
 C. _____

120. Name three teachers in your school whose opinions on crucial educational issues are usually very valuable to you.

- A. _____
 B. _____
 C. _____

121. Check the topics in the following list which you have heard about and/or discussed with other people in your school during the last six months.

- | | |
|--|---|
| <input type="checkbox"/> independent study | <input type="checkbox"/> non-graded school |
| <input type="checkbox"/> language laboratory | <input type="checkbox"/> programmed learning |
| <input type="checkbox"/> use of TV in classrooms | <input type="checkbox"/> instructional materials center |
| <input type="checkbox"/> large group instruction | <input type="checkbox"/> computer scheduling |
| <input type="checkbox"/> team-teaching | <input type="checkbox"/> new math |
| <input type="checkbox"/> schedule modifications | <input type="checkbox"/> B.S.C.S. |

Please answer the following six questions in terms of the items you checked in the previous question.

122. During the past six months have you told anyone in your school about any of the above topics?
1. No 2. Yes
123. Compared with your circle of friends in the school are you (a) more or (b) less likely to be asked for opinions about these topics?
- _____ more
 _____ less
 _____ same amount
124. Thinking back to your last discussion about any of the topics, (a) were you asked for your opinion or (b) did you ask someone else?
- _____ I was asked
 _____ I asked someone else
 _____ same amount
125. When you and your colleagues discuss any of these topics, what part do you play? (a) mainly listen or (b) try to convince them of your ideas?
- _____ mainly listen
 _____ try to convince
 _____ same amount
126. Which of these happens more often, (a) you tell your colleagues about these topics, or (b) they tell you about these topics?
- _____ I tell them
 _____ they tell me
 _____ same amount
127. Do you have the feeling that you are generally regarded by your colleagues as a good source of opinion about these topics?
1. No 2. Yes
128. Please name below the five people who you believe are the most active and widely known citizens in this school district.
1. _____
 2. _____
 3. _____
 4. _____
 5. _____

Place an (x) in front of the names of those (if any) who are connected in any way with the school system.

129. Please name below the three most widely known and respected teachers in this community.

1. _____
2. _____
3. _____

130. Please name below the three teachers in this school who are, in your opinion, most active in community affairs.

1. _____
2. _____
3. _____

Please answer the following questions on the basis of how you think your colleagues feel about you.

131. How would your teaching colleagues rate you in teaching ability compared with secondary teachers in general?

- | | |
|-------------------|----------------------|
| 1. outstanding | 5. average |
| 2. among the best | 6. below average |
| 3. good | 7. among the poorest |
| 4. above average | |

132. Where would your teaching colleagues rank you in ability to become a teacher on closed circuit television?

- | | |
|-------------------|----------------------|
| 1. outstanding | 5. average |
| 2. among the best | 6. below average |
| 3. good | 7. among the poorest |
| 4. above average | |

133. Where would your teaching colleagues rank your ability to be a supervising teacher for a student teacher?

- | | |
|-------------------|----------------------|
| 1. outstanding | 5. average |
| 2. among the best | 6. below average |
| 3. good | 7. among the poorest |
| 4. above average | |

134. How would your teaching colleagues rate your ability to get along with students compared with teachers in general?

- | | |
|-------------------|----------------------|
| 1. outstanding | 5. average |
| 2. among the best | 6. below average |
| 3. good | 7. among the poorest |
| 4. above average | |

135. How would your teaching colleagues rate your ability to enrich instruction (go beyond the book) compared with teachers in general?

- | | |
|-------------------|----------------------|
| 1. outstanding | 5. average |
| 2. among the best | 6. below average |
| 3. good | 7. among the poorest |
| 4. above average | |

136. Where would your teaching colleagues rank your methods of teaching compared with other secondary teachers?
- | | |
|-------------------|----------------------|
| 1. outstanding | 5. average |
| 2. among the best | 6. below average |
| 3. good | 7. among the poorest |
| 4. above average | |
137. How would your teaching colleagues rate you in teaching ability compared with other teachers who have the same number of years of teaching experience?
- | | |
|-------------------|----------------------|
| 1. outstanding | 5. average |
| 2. among the best | 6. below average |
| 3. good | 7. among the poorest |
| 4. above average | |
138. Where would your teaching colleagues rank your methods of classroom discipline compared with other secondary teachers?
- | | |
|-------------------|----------------------|
| 1. outstanding | 5. average |
| 2. among the best | 6. below average |
| 3. good | 7. among the poorest |
| 4. above average | |
139. How would your teaching colleagues rate you in ability to teach your major subject compared with other teachers of that subject?
- | | |
|-------------------|----------------------|
| 1. outstanding | 5. average |
| 2. among the best | 6. below average |
| 3. good | 7. among the poorest |
| 4. above average | |
140. Where would your teaching colleagues rank your ability to teach an accelerated class?
- | | |
|-------------------|----------------------|
| 1. outstanding | 5. average |
| 2. among the best | 6. below average |
| 3. good | 7. among the poorest |
| 4. above average | |
141. How many of your five (5) closest friends are also employed as teachers?
- | | |
|----------|----------|
| 1. _____ | 4. _____ |
| 2. _____ | 5. _____ |
| 3. _____ | |
142. How many of this number are also employed as teachers in this school?
- | | |
|------------------|-----------------|
| 1. one of them | 4. four of them |
| 2. two of them | 5. all of them |
| 3. three of them | |
143. In general, do you consider yourself favorably disposed toward new educational practices?
- | | |
|-------|--------|
| 1. No | 2. Yes |
|-------|--------|

144. In general, do you think that administrators in this school are favorably disposed toward new educational practices?

1. No 2. Yes

145. In general, do you think that your fellow teachers are favorably disposed toward new educational practices?

1. No 2. Yes

Please answer the following questions on the basis of how you think your principal feels about you.

146. How would your principal rate you in teaching ability compared with secondary teachers in general?

- | | |
|-------------------|----------------------|
| 1. outstanding | 5. average |
| 2. among the best | 6. below average |
| 3. good | 7. among the poorest |
| 4. above average | |

147. Where would your principal rank your ability to become a teacher on closed circuit television?

- | | |
|-------------------|----------------------|
| 1. outstanding | 5. average |
| 2. among the best | 6. below average |
| 3. good | 7. among the poorest |
| 4. above average | |

148. Where would your principal rank your ability to be a supervising teacher for a student teacher?

- | | |
|-------------------|----------------------|
| 1. outstanding | 5. average |
| 2. among the best | 6. below average |
| 3. good | 7. among the poorest |
| 4. above average | |

149. How would your principal rate your ability to get along with students compared with teachers in general?

- | | |
|-------------------|----------------------|
| 1. outstanding | 5. average |
| 2. among the best | 6. below average |
| 3. good | 7. among the poorest |
| 4. above average | |

150. How would your principal rate your ability to enrich instruction (go beyond the book) compared with teachers in general?

- | | |
|-------------------|----------------------|
| 1. outstanding | 5. average |
| 2. among the best | 6. below average |
| 3. good | 7. among the poorest |
| 4. above average | |

151. Where would your principal rank your methods of teaching compared with other secondary teachers?
- | | |
|-------------------|----------------------|
| 1. outstanding | 5. average |
| 2. among the best | 6. below average |
| 3. good | 7. among the poorest |
| 4. above average | |
152. How would your principal rate you in teaching ability compared with other teachers who have the same number of years of teaching experience?
- | | |
|-------------------|----------------------|
| 1. outstanding | 5. average |
| 2. among the best | 6. below average |
| 3. good | 7. among the poorest |
| 4. above average | |
153. Where would your principal rank your methods of classroom discipline compared with other secondary teachers?
- | | |
|-------------------|----------------------|
| 1. outstanding | 5. average |
| 2. among the best | 6. below average |
| 3. good | 7. among the poorest |
| 4. above average | |
154. How would your principal rate you in ability to teach your major subject compared with other teachers of that subject?
- | | |
|-------------------|----------------------|
| 1. outstanding | 5. average |
| 2. among the best | 6. below average |
| 3. good | 7. among the poorest |
| 4. above average | |
155. Where would your principal rank your ability to teach an accelerated class?
- | | |
|-------------------|----------------------|
| 1. outstanding | 5. average |
| 2. among the best | 6. below average |
| 3. good | 7. among the poorest |
| 4. above average | |
156. Do you happen to know what the main issue is about in the Amish school controversy in Hillsdale County, Michigan?
1. No 2. Yes
- What is it? _____
- _____
- _____
157. Do you happen to know who the Muskegon County Superintendent of Schools is?
1. No 2. Yes
- Who is it? _____

158. Do you happen to know who the president and executive secretary of the Michigan Educational Association are?

1. No 2. Yes

Who are they? The President is _____
and the Executive Secretary is _____

159. Do you happen to know the method of selection of the Superintendent of Public Instruction in Michigan?

1. No 2. Yes

What is it? _____

160. How many members are there on the State Board of Education?

_____ members (approximately)

161. Please rank the following in order of whose opinion of your teaching ability is more important to you. (1 = most important; 2 = second; 5 = least important)

Students _____
Principal _____
Teaching colleagues _____
Myself _____
Parents of students _____

162. Rhodesia is a city ____/country ____ in:

_____ Southeast Asia
_____ Australia
_____ Africa
_____ Middle East
_____ Latin America
_____ Don't know

163. The Prime Minister of Canada is _____.

Don't know _____

164. U Thant is:

_____ Prime Minister of Red China
_____ U.N. Ambassador from Viet Nam
_____ Foreign Minister of Japan
_____ Secretary General of U.N.
_____ Don't know

165. Have you ever travelled outside the U.S.?

1. No 2. Yes

If yes, please list below the countries you have visited, purpose and the number of days spent in each:

<u>Country</u>	<u>Number of Days</u>
_____	_____
_____	_____
_____	_____
_____	_____

166. Please list below all of the organizations in which you have held membership at one time or other during the last five (5) years.

167. Compared with other teachers in this school, I have attended professional education meetings which involve educators from more than one district . . .

1. very frequently
2. quite frequently
3. about the same amount
4. seldom
5. rarely

168. Please list below the professional journals (regardless of the academic area to which the journal is addressed) which you read regularly.

169. Please list below the professional journals (regardless of the academic area to which the journal is addressed) which you read occasionally.

170. Please list below the non-professional periodicals which you read regularly.

171. Most of my insights and new ideas regarding education result from (please rank in order of importance from 1 = most important to 4 = least important):

- books and/or magazines on education _____
- discussions with other educators _____
- discussions with non-educators _____
- radio, television and/or newspapers (mass media) _____

172. Please list subjects taught in the last five years and semesters taught.

Subject	Number of Semesters
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

173. Please list the number of courses in physical or natural sciences that you have taken in college (specify the course level).

Number of Courses	Subject	Course Level (Fr., Soph., Jr., Sr., or graduate)
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

174. How would your students rate you in teaching ability compared with secondary teachers in general?

- | | |
|-------------------|----------------------|
| 1. outstanding | 5. average |
| 2. among the best | 6. below average |
| 3. good | 7. among the poorest |
| 4. above average | |

175. Where would your students rank your ability to become a teacher on closed circuit television?

- | | |
|-------------------|----------------------|
| 1. outstanding | 5. average |
| 2. among the best | 6. below average |
| 3. good | 7. among the poorest |
| 4. above average | |

176. Where would your students rank your ability to be a supervising teacher for a student teacher?
- | | |
|-------------------|----------------------|
| 1. outstanding | 5. average |
| 2. among the best | 6. below average |
| 3. good | 7. among the poorest |
| 4. above average | |
177. How would your students rate your ability to get along with students compared with teachers in general?
- | | |
|-------------------|----------------------|
| 1. outstanding | 5. average |
| 2. among the best | 6. below average |
| 3. good | 7. among the poorest |
| 4. above average | |
178. How would your students rate your ability to enrich instruction (go beyond the book) compared with teachers in general?
- | | |
|-------------------|----------------------|
| 1. outstanding | 5. average |
| 2. among the best | 6. below average |
| 3. good | 7. among the poorest |
| 4. above average | |
179. Where would your students rank your methods of teaching compared with other secondary teachers?
- | | |
|-------------------|----------------------|
| 1. outstanding | 5. average |
| 2. among the best | 6. below average |
| 3. good | 7. among the poorest |
| 4. above average | |
180. How would your students rate you in teaching ability compared with other teachers who have the same number of years of teaching experience?
- | | |
|-------------------|----------------------|
| 1. outstanding | 5. average |
| 2. among the best | 6. below average |
| 3. good | 7. among the poorest |
| 4. above average | |
181. Where would your students rank your methods of classroom discipline compared with other secondary teachers?
- | | |
|-------------------|----------------------|
| 1. outstanding | 5. average |
| 2. among the best | 6. below average |
| 3. good | 7. among the poorest |
| 4. above average | |
182. How would your students rate you in ability to teach your major subject compared with other teachers of that subject?
- | | |
|-------------------|----------------------|
| 1. outstanding | 5. average |
| 2. among the best | 6. below average |
| 3. good | 7. among the poorest |
| 4. above average | |

195. What was your income as a teacher here last year?

5000 or below _____	6501-7000 _____
5001-5500 _____	7001-7500 _____
5501-6000 _____	7501-8000 _____
6001-6500 _____	above 8501 _____

196. How much over and above your teaching salary did you earn from other sources last year?

none _____	2001-2500 _____
below 500 _____	2501-3000 _____
501-1000 _____	3001-3500 _____
1001-1500 _____	3501-4000 _____
1501-2000 _____	4000 or above _____

197. Sex:

1. Male 2. Female

198. Age:

1. 20-24	6. 45-49
2. 25-29	7. 50-54
3. 30-34	8. 55-59
4. 35-39	9. 60 or over
5. 40-44	

199. What subjects are you currently teaching?

Subject	How Many Periods?	Grade Level
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

200. Educational background:

1. High school diploma
2. 1-3 years college
3. Bachelors Degree (majors) _____
4. Bachelors Degree + (majors) _____
5. Masters Degree (majors) _____
6. Masters Degree + (majors) _____
7. Graduate Diploma/Education (majors) _____
8. Doctors Degree (majors) _____
9. Other (specify) _____

We would appreciate any comment that you may have concerning the items in this questionnaire. Thank you again for your patience and cooperation.