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AN INVESTIGATION OF TEACHER INNOVATION AND  
ATTITUDE TOWARD PARTICIPATION IN CURRICULUM  
PLANNING AND USE.

THE UNIVERSITY OF OKLAHOMA, PH.D., 1978

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THE UNIVERSITY OF OKLAHOMA

GRADUATE COLLEGE

AN INVESTIGATION OF TEACHER INNOVATION AND  
ATTITUDE TOWARD PARTICIPATION IN  
CURRICULUM PLANNING AND USE

A DISSERTATION

SUBMITTED TO THE GRADUATE FACULTY

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degree of

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BY

NORMSRI DANGHARN

Norman, Oklahoma

1978

AN INVESTIGATION OF TEACHER INNOVATION AND  
ATTITUDE TOWARD PARTICIPATION IN  
CURRICULUM PLANNING AND USE

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AN INVESTIGATION OF TEACHER INNOVATION AND  
ATTITUDE TOWARD PARTICIPATION IN  
CURRICULUM PLANNING AND USE

CHAPTER I

INTRODUCTION

Educators have long realized that innovations and curriculum changes are necessary to meet the constantly increasing demands on education. School systems of all sizes are spending a great deal of time and money in studying better ways and means of meeting the needs of the students they serve. A classroom teacher is a key person in educational practices. As Fox (1962, p. 41) stated, "From kindergarten up, teachers are, by function, agents for change."

Miles (1964, p. 13) defined the term change and innovation which are used in this study. Change is some noticeable alteration in the goals, structure, or process of a system which has occurred between two given times. Innovation is a deliberate, novel, specific change which is thought to be more efficacious in accomplishing the goal/s of a system. The term change, in this study, is used interchangeably with innovation.

The concept of teacher innovation for this study comes from the work of Bridges (1968). He defined teacher innovation in terms of teacher receptivity to change, or more specifically in terms of teacher willingness to try new curriculum ideas and practices.

The teacher's role in changing educational practices is crucial because the success or failure of an innovation is in large part dependent upon how it is implemented. Kardas and Talmage (1970) point out that curriculum innovation must be implemented by classroom teachers to assure desired change in the instructional program. Change will take place when teachers use the new curriculum guide as a point of departure for teaching.

The review of related literature indicated variables such as teacher's education, experience, and teaching grade level seem to be related to teacher innovation and curriculum attitude. It is recognized that implementation of any change in curriculum depends upon teachers' attitudes toward that change. In reviewing the literature it is shown that teachers are more willing to implement change when they are involved in the process of that change. As Shuster and Ploghoft (1970, p. 565) noted, teachers who participate in developing curriculum guides gain more first hand experience and are in a better position to initiate change in their own classroom.

### Definitions of Terms

Teacher innovation - As measured by the TRCM developed by Bridges (1968).

Curriculum - As defined by Beauchamp (1975). It is a written document intended to be used by teachers as a point of departure for developing teaching strategies.

Curriculum planning - As defined by Beauchamp (1968). It refers to all activities and processes utilized in the production of a new curriculum or of another curriculum.

Curriculum system - As defined by Beauchamp (1975). It is a system for decision making and action with respect to three primary curriculum functions: curriculum planning, curriculum implementing, and curriculum evaluating.

Curriculum engineering - As defined by Beauchamp (1975). It consists of the organization and processes necessary to make a curriculum system functional in schools.

Curriculum implementation - As defined by Beauchamp (1975). It refers to the processes utilized to get teachers to use the curriculum as a point of departure for developing teaching strategies for their unique groups of students.

### Statement of the Problem

The general problem for this research was: What is the relationship between teacher innovation and attitude toward participation in curriculum planning and use?

The study was designed to empirically investigate the relationship of teacher innovation and attitude toward participation in curriculum planning and use. The following research questions were investigated:

1. Is there a relationship between teacher innovation and attitude toward participation in curriculum planning and use?
2. Are there relationships between teacher innovation and formal education, grade level taught, total number of years of teaching experience, and number of years of teaching experience in the present school?

### Significance of the Study

The study examines the variables associated with teacher innovation and their relationships to attitudes toward participation in curriculum planning and use within the theoretical framework of the functions and the activities which comprise a system of curriculum engineering. Curriculum theory which is concerned with curriculum engineering can accommodate the empirical results of the

findings about the relationships of these variables being investigated. In Beauchamp's (1975) curriculum system model, participants' changed attitudes and commitment to act are some of the outputs of the system. The findings from this study may provide some empirical evidence of the curriculum system.

The cause and effect directionality between teacher innovation and attitude toward participation in curriculum planning and use cannot be logically inferred from the study but the results may contribute to the growing body of empirical evidence that may suggest relationships between these variables. This information may have implications for (a) characteristics of persons involved and (b) selection of personnel. Finally, for the administrator, the study may furnish an empirical basis for decisions concerning selection of personnel to involve in curriculum innovation and curriculum development.

### Rationale and Hypotheses

The theoretical framework of teacher innovation was drawn from the work of Miles (1964) and Bridges (1968). The theoretical framework of curriculum was based on the work of Beauchamp (1964, 1968, 1975).

The concept of teacher innovation used in this study came from the work of Bridges (1968). He provided a rationale for the teachers' key role in the implementation

stage of an innovation process. Miles (1964) wrote that a major factor in the success of an innovation in an educational setting is the opinions of users (teachers). Bridges (1968) developed an instrument for measuring teachers' receptivity to the trial of an innovation. His Teacher Receptivity to Change Measure was employed in this study for obtaining teacher innovation. Basically, this is the willingness to try new curriculum ideas and practices. Bridges (1968) assumed that the willingness would be reflected in the behavior manifested by the teacher under certain kinds of conditions. The behaviors selected ranged from strongly against the use of a new practice on a trial basis to initiating a request to use the new practice on a trial basis. Conditions under which the teacher's behavior might indicate a general readiness to change included a number of circumstances associated with the new practice: (a) the extent to which the new idea was already a proven practice, (b) the amount of work involved in trying the practice, and (c) the amount of role change involved during the trial use.

The personal characteristics of members, as perceived by Giacquinta (1973), appears to have some effects on the process of change in schools. Rogers (1962) listed a number of characteristics of innovative persons which were found from various studies of adoption of innovations. Innovative persons are generally young, have relatively

high social status (high prestige ratings, high education, and high income), are cosmopolitan in outlook, use impersonal and cosmopolitan sources of information, exert opinion leadership, and are likely to be viewed as deviants by their peers and themselves. Rogers also proposed a model to explain why individuals do or do not adopt innovations. He identified five critical stages in the adoption process: awareness, interest, trial, evaluation, and adoption.

Beauchamp's approach to curriculum engineering provided the theoretical rationale for this study. Curriculum engineering consists of all processes necessary to make a curriculum system functional in schools (1968, p. 109). A curriculum system as described by Beauchamp (1975, pp. 135-141) has three primary functions: (a) to produce a curriculum, (b) to implement it, (c) to appraise the effectiveness of the curriculum and the curriculum system. He suggested a model for a curriculum system which is composed of three essential parts: (a) a body of input data, (b) the necessary content and processes for the maintenance of the system, and (c) the output of the system. The function of input data is to provide energy for the content and processes that maintain the steady state of the system. The content and processes for the maintenance are characterized by basic functions which are essential for the curriculum system to be maintained. The outputs are

feedback data such as: a curriculum, increased knowledge by participants, changed attitudes, and commitment to act.

The use of the curriculum, according to Beauchamp (1964), could be perceived best by studying levels of the complete educational activity of the school. These levels are: (a) the curriculum planning level, (b) the teaching-learning level, and (c) the evaluation level. He further stated that the two principal uses of the curriculum are: (a) to guide the work of the teacher, (b) to predict what change in pupils will take place because of what the school does.

It is considered that curriculum planning is the most frequently practiced curriculum engineering function at the school district level. The current research evidence in curriculum led Beauchamp (1975) to generalize that "for maximum curriculum implementation the curriculum should be planned by those who are to implement it" (p. 175). Fleming (1963, p. 11) asserted that it is essential to have teachers retain a central role in curriculum planning. Oliver (1965) and Shumsky (1965) also indicated that teachers can make contributions to curriculum planning and curriculum improvement. Beauchamp (1964, p. 269) noted that teachers have three basic professional functions: (a) to participate in planning the curriculum that is to be their point of departure for teaching, (b) to teach, (c) to



evaluate what was planned and taught and to interpret those results.

Macdonald (1968) stated that teacher participation is crucial in the curriculum development subsystem since the implementation of plans is almost completely dependent upon teachers (p. 215). Curriculum implementation, as indicated by Beauchamp (1975, p. 166), is facilitated if teachers who are to use the curriculum participate in its planning.

Langenbach (1969) applied a curriculum system model described by Macdonald (1968) and Beauchamp (1964, 1968) to develop an instrument to measure teachers' attitudes toward curriculum use and planning. He found a significant difference in attitude toward curriculum use and planning by teachers who participated in curriculum planning and those who did not. His Curriculum Attitude Inventory was used in this study.

If a curriculum system is perceived as consisting of three elements: input, content and processes, and output, Beauchamp's model of curriculum system can be utilized to illustrate the essence of the prescriptive statements about the curriculum system. Teacher participation in curriculum planning can be perceived as the content and process of a curriculum system which accepts input and produces output. The prescriptive statements in the literature

suggest that some of the outputs of a curriculum system that has teacher participation are an increase in teachers' positive attitudes toward curriculum use and planning and commitment to act.

Coffey and Golden (1957, pp. 98-99) pointed out that process of change is likely to be met with less resistance when the persons whom the change affects have participated in the process. Change can develop most productively through collaboration and participation. Taba (1962, p. 451) also agreed that persons who are using the curriculum will resist any change unless they have some part in determining it. Argyris (1962, p. 92) recognized the importance of participation. He stated that "participation is desired (from those affected by the change) in order to (a) decrease resistance to change, (b) develop the most effective processes for a lasting change within the organization, and (c) represent more adequately the needs of the participants involved in the change." Therefore, teachers will be more likely to be innovative (less resistance to change) if they are involved in the change. The primary hypothesis is that:

H<sub>1</sub> There is a significant relationship between teacher innovation as measured by the Teacher Receptivity to Change Measure (TRCM) and

teachers' attitudes toward participation in curriculum planning and use as measured by the Curriculum Attitude Inventory (CAI).

The review of related literature showed that there is little consensus on the demographic characteristics of innovative teachers. The following studies were concerned with change, curriculum planning and implementing, and selected biographical variables.

Urick and Frymier (1963) reported that there was a significantly greater percentage of teachers who held master's degrees in the group identified as most willing to consider curriculum change. Dempsey (1962) analyzed internal and external barriers and readiness to change in judging barriers to curriculum change by teachers K-12. The following significant findings were reported: teachers with master's degrees see fewer internal and fewer external barriers to change than those without master's degrees; secondary school teachers see fewer external barriers to change than do elementary school teachers; teachers with less years of teaching experience perceived fewer internal and external barriers to change than those with more years of teaching experience; and teachers who are not tenured see fewer barriers to curriculum change than those who are tenured.

Carson, et al. (1967) reported that teachers with fewer years of experience adapt more readily to changes in role expectation and behaviors. Lynn (1973) found the number of years of teaching experience in the same environmental setting and the total teaching experience are negatively related to teacher innovation but age, formal education, and teaching grade level are not related to the teacher innovation. Wiley's study (1965) was more specific about the experience level. He reported that curriculum workers could expect to find teachers with fewer than ten years of teaching experience more ready for curriculum change than those with more than ten years of experience.

A study by Willsey (1971) was concerned with selected demographic characteristics of high school teachers identified as innovative teachers. He concluded that as far as the demographic characteristics considered were concerned, no distinction could be made between high innovative teachers and low innovative teachers.

Ancillary hypotheses in this study were based on the relationship between teacher innovation and some demographic variables. These demographic variables were teachers' formal education, teaching grade level, total teaching experience, and teaching experience in the present school. The hypotheses were:

- H<sub>2</sub> There is a significant relationship between teacher innovation as measured by the TRCM and formal education.
- H<sub>3</sub> There is a significant relationship between teacher innovation and teaching grade level.
- H<sub>4</sub> There is a significant relationship between teacher innovation and total teaching experience.
- H<sub>5</sub> There is a significant relationship between teacher innovation and teaching experience in the present school.

#### Organization of the Remainder of the Study

The remainder of the study will be organized in five chapters. Chapter II will contain a review of literature related to the subjects of innovations in schools and curriculum.

Chapter III will describe the design of the study, the development of the instruments, the procedures for collecting data, and the statistical methods.

Chapter IV present the findings of the study.

Chapter V will discuss conclusions, implications, and recommendations for further study.

## CHAPTER II

### REVIEW OF RELATED LITERATURE

Selections from the literature that have provided a background for the present investigation are reviewed in this chapter. The first part is concerned with the writings and studies dealing with innovation; the second, with curriculum planning and implementation.

#### Innovation

A number of writings and studies have been concerned with innovation. Giacquinta (1973) reported that the empirical study of innovation began with anthropologists, and shortly thereafter, rural sociologists, medical sociologists, and educationists. The focus of most studies in various fields has been on simple technological innovations and their diffusion and adoption among aggregates of individuals. Educational research that dealt with the study of innovation began in the 1940's. The majority of educational studies were conducted at Columbia University's Teacher College, under the sponsorship of Mort (Rogers, 1962, p. 39).

Ross (1958) analyzed 150 studies of educational innovations. It was found that one-third of the studies dealt with community, and one-third with administrative mechanisms and arrangements. The other third were about equally divided among staff characteristics, expenditure analysis, and administrative setting.

Mitchell (1972) revealed that studies dealing with persons important in effecting educational change have generally focused on the chief school administrator. Miles (1964) reviewed the studies of educational innovations. He reported that most of the studies were concerned with the adoption of innovations in large units. Rejection or adoption of innovations by individuals has not received a great deal of attention. However, in studies by Mort (1953), Eichholz (1961), Carlson (1965), Rogers (1962), McLimans (1967), Bridges and Reynolds (1968), and Lynn (1973), the characteristics of individual acceptors and rejectors were undertaken. The individuals in these studies were mostly school superintendents and other school administrators except the last four writers who dealt with teachers.

Giacquinta (1973) reviewed the literature on change which provided him the basis for two tentative propositions about organizational change. He noted:

The first is that extent of change in any school's organization and the speed with which it occurs depend

upon multiple factors: the nature of the innovation introduced, the tactics used to introduce it, the characteristics of the individual school members who must carry it out, the properties of the school structure in which it is introduced. The second proposition is that an attempt to change a school organizationally, when successful, proceeds in three basic stages: initiation of the innovation, implementation, and incorporation as a stable part of the organizational structure (p. 179).

From a review of research efforts on the adoption process in several fields of study Rogers (1962) identified five characteristics of innovations that may affect the rate of adoption:

1. Relative advantage--the degree to which an innovation is superior to ideas it supersedes.
2. Compatability--the degree to which an innovation is consistent with existing values and past experiences of the adopters.
3. Complexibility--the degree to which an innovation is relatively difficult to understand and use.
4. Divisibility--the degree to which an innovation may be tried on a partial or limited basis.
5. Communicability--the degree to which an innovation may be explained and communicated to others. (pp. 124-134)

Miles (1964, pp. 635-639) noted the possible special relevance of a number of characteristics of innovation for schools: (a) educational organizations tend to stress costs and their reduction as the basis for justifying adoption of innovations; (b) an innovation's divisibility may be a more important attribute influencing rates of change in schools than in other types of organization, since



highly divisible innovations may make cost a less formidable obstacle; and (c) innovations associated with materials are more likely to be adopted.

Many writers in educational innovations such as Carlson (1965), Owens (1970), and Miles (1964) agreed with Mort (1958) who commented, "Educational change proceeds very slowly" (p. 32). Furthermore, he added, ". . . the average school . . . lags 25 years behind the best practice" (1957, p. 181). Miles (1964) discussed barriers to change in educational organizations. He concluded from several research and writings on innovation:

The diffusion rates in educational systems may be slower than those found in industrial, agricultural, or medical systems for several reasons: the absence of valid scientific research findings; the lack of change agents to promote new educational ideas; and the lack of economic incentive to adopt innovations (since educational products do not have immediate economic pay-off, and educational practitioners are paid on the basis of longevity and personal educational attainment rather than on net output, itself very difficult to measure). (p. 634)

Rogers (1962) proposed a model to explain why individuals do or do not adopt innovations. He identified five critical stages in the adoption process:

1. Awareness Stage

At this stage the individual is exposed to the innovation but lacks complete information about it. He/she is aware of the innovation, but is not yet motivated to seek further information.

2. Interest Stage

The individual becomes interested in the new idea

and seeks additional information about it. He/she favors the innovation in a general way, but he/she has not yet judged its utility in terms of his/her own situation.

### 3. Evaluation Stage

The individual mentally applies the innovation to his/her present and anticipated future situation, then decides whether or not to try it. If the individual feels the advantages of the innovation outweigh the disadvantages, he/she will decide to try the innovation.

### 4. Trial Stage

The individual uses the innovation on a small scale in order to determine its utility in his/her own situation.

### 5. Adoption Stage

The individual decides to continue the full use of the innovation. The main functions of the adoption stage are consideration of the trial results and the decision to ratify sustained use of the innovation. (pp. 81-86)

The process of introducing innovations emphasizing commitment, as viewed by Giacquinta (1973), maintained that the greater the commitment or desire on the part of school personnel to making change, the greater the change to be expected.

Gross, et al. (1971) revealed that some advocates of participation of subordinates viewed participation as necessary throughout the total planned change process while others argued that participation of subordinates was necessary for only certain decisions. Furthermore, Gross and others pointed out the advantages of participation of

subordinates in the process of change as follows: (a) participation leads to higher staff morale, and higher morale is necessary for successful implementation; (b) participation leads to greater commitment, and a high degree of commitment is required for effecting change; (c) participation leads to greater clarity about an innovation, and clarity is necessary for implementation; (d) participation will reduce initial resistance to change and thereby facilitate successful implementation; and (e) subordinates will tend to resist any innovation that they are expected to implement if it is initiated solely by their superordinates (p. 25).

It was recognized that a classroom teacher is in a key position to exert considerable influence on the fate of an innovation in the implementation stage. Bridges (1968) viewed the organizational reality of educational settings stating that a major factor in the success of an innovation is the opinion of users (teachers). Bridges and Reynolds (1968) stated that "Decisions to continue or terminate an innovation often are based on the enthusiasm and comments of teachers" (p. 1). Teachers generally implement change in their classrooms, isolated from the view of peers and supervisors. This relative role invisibility is a major source of unintended power for teachers (Bridges, 1968, p. 1).

Bridges developed an instrument for measuring teacher innovation. His instrument, Teacher Receptivity to Change Measure (TRCM), was utilized in the study by Bridges and Reynolds (1968). They found that teachers with open belief were significantly more receptive to change than teachers with closed systems, but they did not find any relationship between teacher receptivity to change and biographical variables: sex, age, experience, and tenure. Lynn (1973) used the TRCM in her study. She reported experience and tenure were significantly correlated with teacher innovation, but age, formal education, teaching level were not significantly correlated with teacher innovation.

Washington (1974) studied the differences between innovative and traditional elementary school teachers in their perceptions of semantic differential concepts reflecting receptivity to change. He reported that innovative teachers as compared to traditional teachers were younger staff members with fewer years of experience and with shorter periods of association with their school.

In the study of the resistance to the adoption of audio-visual aids by elementary school teachers, Eichholz and Rogers (1964) concluded that the attitudes of rejectors were not related to the grade level taught or to the number of years of teaching experience.

Townley (1973) examined the personality characteristics of innovative teachers. His conclusions were:

(a) success or failure of innovation rests with the classroom teachers; (b) an innovative teacher is more intelligent, emotionally stable, venturesome, tender-minded, imaginative, forthright, self-assured, experimenting, and creative; (c) it would be well to introduce first those innovations most favored by teachers; and (d) openness-to-change would seem to be more related to personality than to the other factors studied.

Marsten (1976) attempted to determine whether age, sex, training, level of instruction and the general innovative climate of the school are related to innovations. His findings were: (a) it is not possible to identify innovative teachers by sex, age, teaching experience, membership in professional organizations, teaching level, or tenure; (b) innovative teachers tend to have more university degrees, read more professional journals, attend more conferences and travel more widely than non-innovative teachers; (c) both innovative and non-innovative teachers perceive their climates to be mildly supportive of innovations; and (d) the innovative teachers willingly cooperate with other teachers but generally develop innovations individually.

McLimans (1967) constructed the Teacher Innovativeness Index which was based on innovative characteristics

found from previous studies of innovation. She administered this Teacher Innovativeness Index, the Decision Point Analysis, and the Curriculum Implementation Index to sixty teachers. The findings were: teacher innovation and curriculum implementation correlated negatively at the .01 level; teacher innovation and the implementation of curriculum change showed a negative correlation but was not significant; a total implementation score was correlated negatively with teacher innovation, but it was not significant; self-contained classroom teachers implemented the written curricular plans to the greatest extent; and teachers who had been in the system from 9 to 14 years were most likely to implement the curricular plans.

#### Curriculum Planning and Curriculum Implementation

The literature in the area of curriculum increasingly focuses on an important role of teachers in curriculum planning. As Oliver (1965) stated, "One of the most significant fact in curriculum making is the discovery that teachers can make contributions to curricular planning" (p. 53). Cook and Doll (1973) also viewed teachers as participants in curriculum making when they noted, "The responsibility of constructing the curriculum rests more nearly on classroom teachers, alone or in committees, than on any other group" (p. 186). Beauchamp (1975, p. 149)

recognized the advantages of having teachers involved in curriculum planning. He revealed that the effectiveness of curriculum decision making will be improved because of the recency of experience of the teachers in classroom and because teachers will be able to exert leadership in implementation when the planning is completed.

Participation in curriculum development has been perceived by some advocates as a professional responsibility. Oliver (1965, p. 55) and Beauchamp (1964, p. 282) pointed out that teachers' participation in curriculum planning and improvement was considered as part of their professional responsibility.

Research in curriculum has indicated that teachers who participated in curriculum planning are more likely to use the curriculum as a point of departure for developing instructional strategies and to be more willing and enthusiastic to do so (Beauchamp, 1975, p. 206). This generalization led Beauchamp to propose that curriculum engineering is markedly facilitated when the arena for planning and implementing are the same. He wrote:

The more removed the arena for curriculum planning is from the arena in which the implementation effort is directed, the less identity teachers feel with curriculum and the more they resist its implementation.  
(p. 206)

Saylor and Alexander (1974, p. 58) viewed curriculum implementation as the central job of the teacher.

Beauchamp (1964, p. 357) noted that in the stage of curriculum implementation, teachers, superintendents, and principals were key persons. This point of view was also supported by Havighurst (1964, p. 97) who found schools where the principals showed a responsibility for the use of curriculum guides, the guides were generally used.

The need for curricular change and the place of the teacher in carrying out this change were observed by Krug (1960, p. 548) who noted change must and will occur, but the process of making changes should be one of orderly and reflective study and decision-making. He further indicated that there should be continuous planning in every school and by every teacher.

Teacher participation in curriculum change was recognized by some advocates. Coffey and Golden (1957, p. 98) revealed that change is likely to be met with less resistance when the persons whom the change affects have participated in the process of that change. Along the same line, Doll (1965, p. 225) stated that participation would create higher morale, maintenance of interest, and willingness to change.

Saylor and Alexander (1966, p. 438) pointed out the importance of teacher participation when they wrote:

Unless the teacher is an active participant in the planning process of his school and school system, he generally has difficulty in implementing the plans made



there. Furthermore, he may even resist plans in which he was not involved.

The followings were the review of some empirical studies which were primarily concerned with curriculum planning and curriculum implementation.

McQuigg (1962) designed a study to obtain the opinions of school administrators and classroom teachers concerning teacher participation in curriculum development committee work. Teachers and administrators from the sixteen school systems in Colorado participated in the study. He found that teachers and administrators agreed that teachers should be required to serve on curriculum committees, and a majority of teachers approved of a reduced teaching load for teachers serving on curriculum committees. The majority of teachers viewed the ability to make changes more easily, enthusiasm for changes, and a better picture of the overall program were characteristic of their work as a result of curriculum committee participation.

Kardas and Talmage (1970) studied characteristics of teacher participation in curriculum planning and reported acts of implementation. They were able to find a positive relationship of degree of participation with years of experience, years of experience in the present school system, number of children in the family, salary, and participation in in-service education. Degree of participation

was positively correlated with implementation. Later, the investigators applied the stepwise regression procedure to their study. They found that teachers who most likely to implement the school system's curriculum would be primary teachers in self-contained classrooms, holding some hours beyond the B.A. degree, have small families, prefer the role in curriculum activities as grade consultant and curriculum writers, understand their curriculum responsibilities, receive professional growth points for participation, prefer a continuation of school personnel leading curriculum activities, and score high on Bowers Teacher Opinion Inventory (1961) and on the Participation Inventory (Johansen, 1965).

Johansen (1965) investigated the relationship between teachers' perceptions of sources and types of authoritative influence in curriculum decision-making and curriculum implementation. He concluded that teacher participation in curriculum planning and the perception by teachers that they were influential in curriculum planning increased the likelihood of curriculum implementation. Duet (1972) utilized the same instruments that Johansen did and received similar results. He found a significant relationship between teacher participation on curriculum committees and their implementation practices.

Krey (1968) analyzed factors relating to teachers'

perceptions of curricular implementation activities and to the extent of curricular implementation. He reported that official curricular plans were implemented to a greater extent by those teachers who: (a) recognized their need for curriculum implementation activities; (b) had greater opportunities for participation in planning curriculum implementation activities; (c) recognized their professional obligation to curricular implementation activities; and (d) had greater opportunities for participation in evaluating curricular implementation activities. Teachers perceived themselves to be limited participants in planning and evaluating curricular implementation activities. Teachers with fifteen to nineteen years of experience and those teachers employed the longest in the school system with the most years of experience had favorable perceptions of curricular implementation activities.

Poll (1970) studied selected factors related to the implementation of centrally prepared guides. The relationships were found between implementation and level of academic training, grade level taught, years of teaching experience, and teachers' willingness to participation in curriculum planning activities.

Salinger (1966) found that teachers used curriculum guides to plan lessons and get ideas for units. Primary school teachers tended to use their curriculum guides

more than fourth to sixth grade teachers. Involvement in the development of guides did not necessarily lead to increased use of guides. Salinger's findings supported Heusner's (1963) study which reported that teacher participation in the construction of curriculum guides did not necessarily increase utilization unless satisfactory conditions were present relative to such factors as recognition, time, role, and organization.

Kardas (1969) reported that satisfaction with the teaching profession increased the likelihood that a teacher who participated in curriculum planning would implement curriculum guides.

Langenbach (1969) attempted to answer the question: Can teachers be distinguished from one another on the basis of their attitudes toward curriculum use and planning? The Curriculum Attitude Inventory was used to obtain scores on curriculum attitude from 274 teachers.

A significant difference was found in teachers' attitudes toward curriculum use and planning between those who had participated in curriculum planning and those who had not. A significant difference was also found among scores of teachers with certain combination of grade levels and experiential levels. It was found that teachers who taught in 7 to 12 grade with 3 to 10 years of experience were likely to score higher on the Curriculum Attitude

Inventory than other teachers at the respective levels of the participation factor. None of the teaching grade levels or years of teaching experience yielded a significant difference in the score.

A study of teacher attitudes toward curriculum change, done by Banning (1954), was reported that attitudes of teachers toward curriculum change were more favorable if: (a) teachers felt they were making a contribution to the change; (b) they shared in policy making; (c) they had harmonious relations with pupils; and (d) they were active participants in community life.

#### Summary

The review of related literature indicated that there was little consensus on the demographic characteristics of innovative teachers, and little attempt had been made to determine what these characteristics might be. Both empirical and non-empirical studies indicated that teacher participation in curriculum planning tended to enhance the possibility of curriculum utilization. No studies were found that attempted to investigate the relationship between teacher innovation and curriculum attitude.

## CHAPTER III

### METHODS AND PROCEDURES

In this chapter the selection of the subjects, variables, a description of the instruments used, the procedures for gathering the data, and the methods of data analysis are described.

#### Selection of the Subjects

The subjects of this study were public school teachers from a medium sized town in a southwestern state and experienced teachers who enrolled in graduate courses at a state university. The total group represents both the sample and the population; i.e., because of the lack of random selection, the only group to which the generalizations from the study will apply is this original group. A larger population could be all experienced teachers, depending on the extent to which those involved in the study were representatives of all experienced teachers. Estimates of their representativeness were not made. One hundred twenty public school teachers and 155 experienced teachers, graduate students from a state university, were willing to

participate in the study. The total number of teachers was 275, which was an appropriate size for a multiple correlational study (Kerlinger and Pedhazur, 1973, p. 447). There were 251 usable questionnaires from the total of 275 returned questionnaires. It was 91% of the total. The unit of analysis was the individual teacher data.

### Variables

The variables were scores on the TRCM, scores on the CAI, formal education, teaching grade level, teaching experience, and experience in the present school. Independent variables and dependent variables were selected under each of five hypotheses.

For  $H_1$  the independent variables were the scores on the CAI and the dependent variables were the scores on the TRCM.

$H_1$  There is a significant relationship between teacher innovation as measured by the TRCM and teachers' attitudes toward participation in curriculum planning and use as measured by the CAI.

In  $H_2$ ,  $H_3$ ,  $H_4$ , and  $H_5$  the independent variables were the scores on the TRCM and the dependent variables were formal education, teaching grade level, total teaching experience, and experience in the present school respec-

tively.

- H<sub>2</sub> There is a significant relationship between teacher innovation and formal education.
- H<sub>3</sub> There is a significant relationship between teacher innovation and teaching grade level.
- H<sub>4</sub> There is a significant relationship between teacher innovation and total teaching experience.
- H<sub>5</sub> There is a significant relationship between teacher innovation and teaching experience in the present school.

#### Instrumentation

Two instruments used in this investigation were the Teacher Receptivity to Change Measure (TRCM) and the Curriculum Attitude Inventory (CAI).

#### The Teacher Receptivity to Change Measure

This instrument was developed by Bridges (1968). Items in the instrument were derived from some of the properties of an innovation, cited by Miles (1964), as affecting an innovation's initiation and continued use. The form of the TRCM on which teachers' responses are recorded is the "Teacher Reaction Questionnaire" (see Appendix B). The TRCM is composed of ten statements of possible innovative practices to which a teacher is asked to respond with



answers (a) through (e), with (a) and (b) indicating a positive response to change and (c), (d), and (e) indicating a negative response. A score of 5 was assigned to an a response, 4 to a b response, 3 to a c response, 2 to a d response, and 1 to an e response.

Bridges (1968) administered the TRCM to 100 junior high teachers and later to 100 elementary teachers. The coefficient of reproducibility was .85 while the minimal marginal reproducibility coefficient was .638.

Two validation studies by Bridges (1968) have been undertaken for this instrument. One investigation used principals as judges of teacher receptivity to change while the other study based on colleagues' opinions. Results from the two studies showed that teachers' scores on the TRCM corresponded with the principals' and colleagues' judgement. An F value of 23.65 and degrees of freedom of 1, 49, significant beyond .001 was obtained in the first study and an F value of 8.65 and degrees of freedom of 1, 31, significant at the .01 level in the second study.

### The Curriculum Attitude Inventory

The Curriculum Attitude Inventory (CAI) developed by Langenbach (1969, see Appendix B) is a 50 item questionnaire on which teachers respond to questions about attitudes toward participation in the use and planning of curriculum.

Teachers were asked to identify their age, sex, level taught, education, years of experience, and years of experience in the present school.

If a respondent answered a one, two, three with an item that had been indicated within the one to three range by the scoring key, then the item was scored one. If the respondent answered in the four to six range for the same item, the item was scored zero.

Langenbach (1969) applied Hoyt's analysis of variance technique to estimate reliability and obtained an  $r = .54$ , when administered to a relatively homogeneous group, and  $.66$  when administered to a less homogeneous group.

A validation study was conducted by asking a group of principals to nominate teachers in their schools who had positive attitudes and negative attitudes toward curriculum planning and use. The two groups of teachers then responded to the CAI. It was found that 43 items had discriminating power at the  $.10$  level and 7 items had discriminating power at the  $.15$  level (Langenbach, 1969).

#### Procedures for Collection of Data

Upon receiving a permission to conduct the study from the assistant superintendent of the school district, the investigator requested cooperation from each principal to encourage teachers at each school to participate in this

study. Appointments were set with the principals so that questionnaires would be distributed to the participating teachers through intra-school delivery methods. There were 120 teachers who were willing to participate. After the teachers completed the questionnaires, they could return them in sealed envelopes to the school secretary for the investigator to pick up.

There were 155 experienced teachers who enrolled in graduate courses in college of education at a state university and willing to participate in the study. The instructors who gave permission to use their classes administered the questionnaires to those who wanted to respond. After the questionnaires were completed, they were returned to the instructors for the investigator to pick up.

#### Methods of Data Analysis

Two statistical methods, canonical correlation analysis and multiple regression analysis, were used to test hypotheses.

The primary concern of the investigation was the significance and nature of the relationship between teacher innovation as measured by the TRCM and teachers' attitudes toward participation in curriculum planning and curriculum use as measured by the CAI. There were 10 items on the TRCM and 50 items on the CAI. The study was designed to

find the relationship between 10 scores (variables) on the TRCM and 50 scores (variables) on the CAI. Canonical correlation analysis was chosen to test  $H_1$ .

Canonical correlation analysis was first introduced by Hotelling (1935). It is multiple regression analysis with any number of independent variables and any number of dependent variables. The basic idea of canonical correlation is that, through least squares analysis, two linear composites are formed, one for the independent variables, and one for the dependent variables to maximize the intersubset relationship. The correlation between these two composites is the canonical correlation (Kerlinger and Pedhazur, 1973, p. 342).

Cooley and Lohnes (1971) described the analysis beginning with a partitioning of  $R$ , the matrix of intercorrelations for the variables, into four submatrices:

$$R = \left[ \begin{array}{c|c} R_{11} & R_{12} \\ \hline R_{21} & R_{22} \end{array} \right]$$

where  $R_{11}$  = intercorrelations among the predictors

$R_{22}$  = intercorrelations among the criteria

$R_{12}$  = intercorrelations of predictors with criteria

$R_{21}$  = the transpose of  $R_{12}$

The canonical equation can be written:

$$(R_{22}^{-1}R_{21}R_{11}^{-1}R_{12} - \lambda_i I)b_i = 0$$

The solution involves finding latent roots for which  $R_{22}^{-1}R_{21}R_{12} - \lambda I = 0$ .

Bartlett (1947) offered procedure for testing the significance of canonical correlations. The  $\chi^2$  approximation for the distribution of  $\Lambda$  provides a test for the null hypothesis (Kerlinger and Pedhazur, 1973, p. 380):

$$\chi^2 = - \left[ N - 1 - .5(p + q + 1) \right] \log_e \Lambda$$

where  $N$  = number of subjects

$p$  = number of dependent variables

$q$  = number of independent variables

$$\Lambda = (1 - R_{c1}^2)(1 - R_{c2}^2) \dots (1 - R_{cq}^2)$$

$R_c^2$  = squared canonical correlation

The degrees of freedom for the first root are  $p + q - 1$ ; for the second root  $p + q - 3$ ; for the third root  $p + q - 5$ ; and so on.

A BMD 09M program, canonical correlation analysis, was used to analyze the data. This program computes canonical correlations, canonical coefficients, and canonical variables corresponding to two sets of input variables (Dixon, 1974).

The ancillary hypotheses were tested by means of multiple regression analysis. Multiple regression analysis was selected since it allows for the comparison of multiple independent variables with one dependent variable. The

basic equation of multiple regression is (Cooley and Lohnes, 1971):

$$y_i = b_0 + b_1x_1 + b_2x_2 + . . . + b_nx_n$$

where  $y_i$  = criterion or dependent variable

$x_1, x_2, . . . , x_n$  = predictor or independent variables

$b_0$  = the regression constant

$b_1, b_2, . . . , b_n$  = the regression weights

This technique produces a correlation matrix which allows for interpretation of the relationship between each predictor (independent) variable with the criterion (dependent) variables as well as between the combined predictor variables and the criterion variable.

A BMD 02R program, stepwise regression, was used for testing the ancillary hypotheses. The program computes a sequence of multiple linear equations in a stepwise manner (Dixon, 1974).

#### Limitations of the Study

The sample was not randomly chosen so it constituted a constraint to the study. The other constraint was that the sample was drawn from public school teachers of a school district in a medium sized town of a southwestern state and experienced teachers who enrolled in graduate courses at the state university.

The results of the study can not be generalized

beyond the population from which the teachers were selected.

### Summary

In this chapter the nature of the sample and the procedures for collecting data were described. Two instruments used in the study were discussed. Canonical correlation and multiple regression analysis which were used to analyze the data were also discussed.

## CHAPTER IV

### FINDINGS OF THE STUDY

This chapter presents the analysis of the data collected in this study. The analysis pertains to descriptive data and the five hypotheses.

#### Analysis of Descriptive Data

Personal descriptive data were gathered from each teacher. Information about formal education, teaching grade level, teaching experience, and experience in the present school are presented in Appendix C, along with frequencies and percentages in each category.

#### Analysis of Data Related to the Hypotheses

The primary purpose of the study was to ascertain whether relationship exist between teacher innovation scores derived from the TRCM and teachers' curriculum attitudes scores from the CAI.

HYPOTHESIS 1: There is a significant relationship between teacher innovation as measured by the TRCM and teachers' attitudes toward participation in curriculum planning and use as measured by the CAI.

The testing of this hypothesis involved gathering



and interpreting by means of canonical correlation analysis the data on the teacher innovation (TRCM) as these ten variables (scores) related to the fifty curriculum attitude scores (CAI).

The intercorrelations between the scores on the TRCM and the intercorrelations between the scores on the CAI are displayed in the Appendix D and the Appendix E respectively.

Table 1 presents the significant correlations between the TRCM scores and the CAI scores (see Appendix F for complete correlation matrix). The significant correlations ( $p < .01$ ) are as follows:

Item 1 of the TRCM is positively related with items 5, 15, 25, 26, 27, 30, 41, 45, and 46 of the CAI.

Item 2 is positively related with items 12, 41, 43, and 46.

Item 3 is positively related with items 17, 26, 47, and 48.

Item 4 is positively related with items 25, 26, 47, and 49.

Item 5 is positively related with items 12, 25, 27, 28, 30, and 46.

Item 6 is positively related with items 9, 20, 21, 26, 38, 41, and 48; and negatively related with item 37.

Table 1  
Significant Correlations between the Scores on  
Teacher Innovation<sup>a</sup> and Curriculum Attitude<sup>b</sup>

Item	<u>TRCM</u>									
	1	2	3	4	5	6	7	8	9	10
4	-.14	-	-	-	-	-	-	-	-	-
5	.17	.15	-	-	-	.14	-	-	-	-
8	-	.13	-	-	-	-	.14	-	.20	.12
9	-	.14	-	.15	-	.19	.16	.16	.16	.19
11	-	-	-	.13	-	-	-	-	-	-
12	-	.20	-	.12	.20	-	.15	.16	.19	-
13	.15	.13	.12	.12	-	.12	-	-	.13	.12
15	.16	.13	-	-	-	-	-	.15	.16	-
<u>CAI</u> 16	-	-	-	-	-.12	-	-	-	-	-
17	-	-	.21	-	.14	.12	-	.24	.16	.19
18	-	-	.12	-	.14	-	-	.17	.18	.22
20	.13	-	-	.15	.12	.18	.15	-	.22	.12
21	-	-	.14	-	-	.21	.21	.14	.20	.23
24	-	-	-	-	-	.13	.13	-	.18	-
25	.17	-	-	.16	.19	-	.13	.16	.18	-
26	.17	.14	.20	.24	-	.21	-	.15	.24	.13
27	.17	.13	.14	-	.17	.13	.15	-	-	.12
28	-	.15	.12	.12	.18	-	-	.15	.13	.13

Note.  $r > .15$ ,  $p < .01$ ;  $r > .11$ ,  $p < .05$

<sup>a</sup>As measured by the TRCM

<sup>b</sup>As measured by the CAI

Table 1 (Continued)

Item	1	2	3	TRCM		6	7	8	9	10
				4	5					
29	-	-	.12	-	-	.15	.13	-	-	-
30	.23	.13	-	-	.20	-	-	.18	.23	.16
32	.13	.13	-	-	-	-	-	-	.15	.12
33	-	-.15	-	-	-.13	-	-	-	-	-
34	-	-	-	.12	-	-	-	-	-	-
35	-	-	-	-	-	-	-.13	-	-	-
36	-	-	-	-	-	-	-	-	.12	-
37	-	-	-.13	-	-	-.16	-	-	-	-
38	-	-	-	-.14	-	.21	-	-	.15	.17
CAI 40	-	-	-	-	-	-	-	.13	-	-
41	.23	.16	-	.13	.15	.19	.13	.14	.22	-
42	-	-	.15	-	-	-	-	.17	-	-
43	-	.17	.13	-	.12	-	.12	-	-	-
45	.28	.13	.12	-	-	.12	-	.15	.21	.17
46	.27	.20	.13	-	.17	.12	.24	-	.21	.18
47	-	-	.17	.17	-	-	-	-	-	-
48	.12	-	.19	-	-	.28	.20	-	.16	.22
49	-	-	-	.18	-	-	-	.12	-	-
50	.15	.15	-	-	-	-	-	-	-	-

Note.  $r > .15$ ,  $p < .01$ ;  $r > .11$ ,  $p < .05$

Item 7 is positively related with items 9, 21, 46, and 48.

Item 8 is positively related with items 9, 12, 17, 18, 25, 30, and 42.

Item 9 is positively related with items 8, 9, 12, 15, 17, 18, 20, 21, 24, 25, 26, 30, 41, 45, 46, and 48.

Item 10 is positively related with items 9, 17, 18, 21, 30, 38, 45, 46, and 48.

There are seventy-one significant correlations, seventy of which are positive and one negative. It would seem to be apparent that there is only limited correlation between the two domains under study. The correlation of .28 between item 1 of the TRCM and item 45 of the CAI, for example, accounts for only 8% of the shared variation. Canonical correlation (see Table 2) helps the investigator probe more deeply into the research question.

Table 2 exhibits the results related to the hypothesis. There are three significant canonical correlations between the two domains. The first canonical correlation is .71 and this is significant at the .01 level. The second canonical correlation is .58 and significant at the .01 level. The third canonical correlation is .55 and significant at the .05 level. Therefore, there exist three linear functions between the sets of variables.

Table 2  
 Canonical Correlations and Tests of Significance  
 of Successive Latent Roots:  
 Teacher Innovation and Curriculum Attitude

	Corresponding Canonical R	$\chi^2$	df	p
The first root	.71	153.77	59	< .01
The second root	.58	88.89	57	< .01
The third root	.55	80.15	55	< .05
The fourth root	.49	59.05	53	> .10

An examination of the loadings of the coefficients which maximize the significant canonical functions provide additional ingredients for interpretation of the relationships. These results are presented in Table 3, Table 4, and Table 5.

The canonical analysis of teacher innovation and curriculum attitude can be summarized with three significant canonical functions (see Appendix G). The first function (see Table 3) indicates that teachers who have high scores on the following item of the CAI:

Item 37 -- A curriculum and teachers' editions of

Table 3

Canonical Analysis: Teacher Innovation  
and Curriculum Attitude

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Canonical Function I:			
( $\chi^2 = 153.77$ , $df = 59$ , $p < .01$ , canonical correlation = .71)			
<u>TRCM</u>	Coefficients	<u>CAI</u>	Coefficients
1	-.42	8	-.17
9	-.43	13	-.20
		20	-.23
		23	-.15
		25	-.22
		26	-.22
		27	-.16
		30	-.20
		37	.22
		41	-.30
		45	-.28
		46	-.25
		47	.20

---

textbooks are about equal in value in terms of helping teachers plan lessons;

but low scores on the following items:

Item 20 -- It is almost fantasy to expect a group of teachers to agree on what a curriculum ought to be;

Item 26 -- Child psychologists ought to participate with teachers in curriculum planning;

Item 41 -- Some parts of a curriculum can be written by the children of a school;

Item 45 -- Curriculum planning is one activity that contributes to teacher professionalism; and

Item 46 -- A curriculum is a great deal more helpful to teachers than a set of textbooks;

will have low scores on the following items of the TRCM:

Item 1 -- A teacher like myself after considering a new, promising curriculum practice which he/she has not had an opportunity to see in operation is likely to . . .; and

Item 9 -- A teacher like myself after considering a new, promising curriculum practice which involves a major shift in his/her current teaching procedure is likely to . . .

The second canonical function (see Table 4) reveals that teachers who have high scores on the following items of the CAI:

Item 28 -- A curriculum can be judged good or bad according to the scholarly respectability of its contents;

Item 30 -- A good teacher is one who is willing to help in curriculum planning;

Item 34 -- A curriculum ought to be referred to at least once a month for planning classroom activities;

Table 4  
 Canonical Analysis: Teacher Innovation  
 and Curriculum Attitude

Canonical Function II: $(\chi^2 = 88.89, df = 57, p < .01, \text{canonical correlation} = .58)$			
<u>TRCM</u>	Coefficients	<u>CAI</u>	Coefficients
6	-.70	4	.16
8	.73	5	-.20
		12	.17
		15	.19
		22	.18
		23	.23
		24	-.30
		28	.27
		30	.32
		31	-.24
		34	.27
		37	.32
		38	-.27
		43	-.28
		45	.25
		48	-.25
		49	.38
		50	-.21



Item 37 -- A curriculum and teachers' editions of textbooks are about equal in value in terms of helping teachers plan lessons;

Item 45 -- Curriculum planning is one activity that contributes to teacher professionalism; and

Item 49 -- Subject-matter departments within schools ought to have their own curriculum committees;

but low scores on the following items:

Item 24 -- It is important that all the teachers in a school use a curriculum;

Item 38 -- Teachers enjoy working on curriculum committees; and

Item 43 -- More in-service education is needed to help teachers learn to plan curriculums;

will have high scores on the following item of the TRCM:

Item 8 -- A teacher like myself after considering a curriculum change to which teachers and students in a neighboring district are responding favorably is likely to . . .;

but low scores on:

Item 6 -- A teacher like myself after considering a curriculum change which involves planning and carrying out a major portion of one's classroom activities with other teachers is likely to . . .

The third canonical function (see Table 5) indicates that teachers who have high scores on the following items of the CAI:

Item 47 -- Not enough teachers take part in curriculum planning; and

Item 48 -- Teachers are too busy with teaching problems to be concerned with curriculum committees;

Table 5  
 Canonical Analysis: Teacher Innovation  
 and Curriculum Attitude

Canonical Function III: $(\chi^2 = 80.15, df = 55, p < .05, \text{canonical correlation} = .55)$			
<u>TRCM</u>	Coefficients	<u>CAI</u>	Coefficients
1	-.56	4	.20
3	.48	6	.17
4	.49	8	-.28
9	-.58	9	.22
		15	-.24
		16	-.19
		17	.17
		20	-.15
		23	.16
		26	.21
		28	.18
		29	.24
		30	-.34
		31	-.25
		33	-.35
		35	-.15
		37	-.19
		38	-.22
		43	.23
		45	-.25
		47	.48
		48	.35

but low scores on the following items:

Item 8 -- Curriculum committee meetings are a bore;

Item 30 -- A good teacher is one who willing to help in curriculum planning; and

Item 33 -- After a curriculum is planned most teachers lose interest in it;

will have high scores on the following items of the TRCM:

Item 3 -- A teacher like myself after considering a new approach to teaching which requires at least one full summer of formal training (at government or district expense) to use well is likely to . . . ; and

Item 4 -- A teacher like myself after considering a new curriculum practice which can be used by classroom teachers without disturbing too much what they are currently doing is likely to . . . ;

but low scores on the following items:

Item 1 -- A teacher like myself after considering a new, promising curriculum practice which he/she has not had an opportunity to see in operation is likely to . . . ; and

Item 9 -- A teacher like myself after considering a new, promising curriculum practice which involves a major shift in his/her current teaching procedure is likely to . . .

Hypotheses 2, 3, 4, and 5 are tested by means of multiple regression. Formal education, teaching grade level, total teaching experience, and experience in that school are dependent variables. The scores on the TRCM are independent variables.

The correlations between dependent variables and independent variables are displayed in Table 6.

Table 6  
Correlation between  
Teacher Innovation and Demographic Variables

<u>TRCM</u> item	Formal education	Teaching level	Total teaching experience	Experience at that school
1	.03	-.04	-.16	-.04
2	.05	-.04	-.03	.00
3	.04	.05	-.05	-.08
4	.01	-.10	-.06	-.05
5	.11	-.04	-.08	-.12
6	.01	.04	-.12	-.06
7	.04	-.01	-.10	-.11
8	.12	-.12	.01	-.01
9	.05	-.03	-.04	-.14
10	.01	-.05	-.08	-.11

Note.  $r > .15, p < .01$ ;  $r > .11, p < .05$

HYPOTHESIS 2: There is a significant relationship between teacher innovation as measured by the TRCM and formal education.

The testing of this hypothesis involved gathering and interpreting by means of multiple regression analysis the data on teacher innovation (TRCM) as these 10 variables (scores) related to the formal education variable.

The presentation of the multiple correlation and tests of significance are not supported by the F tests (see Table 7).  $H_2$  is rejected. Therefore, there is no significant relationship between teacher innovation and formal education.

HYPOTHESIS 3: There is a significant relationship between teacher innovation and teaching grade level.

Table 8 demonstrates that the relationship between teacher innovation and teaching grade level failed to reach significance. The hypothesis is not supported.

HYPOTHESIS 4: There is a significant relationship between teacher innovation and teaching experience.

Table 6 presents two significant correlations: item 1 and item 6 with total teaching experience. Item 1 which states, "A teacher like myself after considering a new, promising curriculum practice which he/she has not had an opportunity to see in operation is likely to . . ." and item 6 which states, "A teacher like myself after considering a curriculum change which involves planning and carrying out a major portion of one's classroom activities with other teachers is likely to . . ." are negatively related to teaching experience.

Table 9 shows the order in which the independent variables (TRCM scores) were entered in the analysis. The process for selection of variables entry order began by

Table 7  
Regression Analysis:  
Teacher Innovation and Formal Education

Variable Entered (Item on the <u>TRCM</u> )	Multiple R	F
8	.1231	3.832
5	.1485	2.795
10	.1539	1.996
4	.1565	1.544
2	.1580	1.255
6	.1594	1.061
9	.1610	.924
1	.1615	.810
7	.1619	.721
3	.1622	.649

Note. For the degrees of freedom of 1 and 249, F value is 3.84, significant at the .05 level.

Table 8  
Regression Analysis:  
Teacher Innovation and Teaching Level

Variable Entered (Item on the <u>TRCM</u> )	Multiple R	F
8	.1211	3.707
3	.1486	2.800
4	.1696	2.439
6	.1802	2.065
10	.1914	1.862
2	.1951	1.609
1	.1960	1.387
7	.1964	1.214
9	.1965	1.076
5	.1967	.966

Note. For the degrees of freedom of 1 and 249, F value is 3.84, significant at the .05 level.

Table 9  
Regression Analysis:  
Teacher Innovation and Teaching Experience

Variable Entered (Item on the <u>TRCM</u> )	Multiple R	F
1	.1592	6.473*
6	.1750	3.919*
8	.1882	3.024*
4	.1944	2.415*
5	.1991	2.023
2	.2041	1.767
10	.2076	1.564
9	.2139	1.451
7	.2153	1.301

\* Significant at the .05 level.



selecting that variable (item 1 on TRCM) with the highest prediction validity from the predictor set. Subsequently, the variable which maximally increased the squared multiple correlation when used with the preceding variable was entered.

With the entry of each of the variables (items 1, 6, 8, and 4) as predictors, the multiple correlation coefficient,  $R$ , was statistically significant. The hypothesis is supported. However, the strength of the correlation (the percentage of predictive power) is not of practical significance for either the four statistically significant variables, or the total set of independent variables. The  $R^2$  coefficient provides a check on this aspect of the statistical analysis. A squared multiple correlation of .0464 indicates that only 4.64% of the variance is explained by the two domains.

HYPOTHESIS 5: There is a significant relationship between teacher innovation and teaching experience in the present school.

There are four negatively significant correlations between the TRCM items (9, 5, 7, and 10) and teaching experience at the present school (see Table 6). Items 9, 5, 7, and 10 state as follows:

Item 9 -- A teacher like myself after considering a new, promising curriculum practice which involves a major shift in his/her current teaching procedure is likely to . . .

Item 5 -- A teacher like myself after considering use of a new curriculum practice about which very little is known concerning the consequence of its use is likely to . . .

Item 7 -- A teacher like myself after considering a new, untested curriculum idea which involves a large amount of daily preparation if it is to have any chance of success is likely to . . .

Item 10 -- A teacher like myself after considering a new, promising curriculum practice which involves an increase in record keeping and paper work is likely to . . .

Table 10 exhibits the multiple correlation analysis which indicates that items 9 and 5 constitute significant relationship with teaching experience at that school. A squared multiple correlation of .0348 shows that only 3.48% of the variance is explained by the two sets of variables.

#### Summary of the Results

H<sub>1</sub>: There is a significant relationship between teacher innovation as measured by the TRCM and teachers' attitudes toward participation in curriculum planning and use as measured by the CAI.

This hypothesis is supported by the test of significance. The maximum canonical correlation between the TRCM scores and the CAI scores is .71 which is significant at the .01 level and accounted for 49% of the total variance. The second canonical correlation is .58 which is significant at the .01 level. The third canonical correlation is .55, significant at the .05 level.

Table 10

## Regression Analysis:

Teacher Innovation and Experience in that school

Variable Entered (Item on the <u>TRCM</u> )	Multiple R	F
9	.1402	4.995*
5	.1622	3.352*
2	.1698	2.445
7	.1770	1.988
8	.1818	1.675
3	.1843	1.431
10	.1853	1.234
4	.1862	1.087
6	.1865	.965

\* Significant at the .05 level.

H<sub>2</sub>: There is a significant relationship between teacher innovation and formal education.

No significant relationship between scores on the TRCM and formal education is found in the multiple regression analysis. This hypothesis is not supported.

H<sub>3</sub>: There is a significant relationship between teacher innovation and teaching grade level.

The multiple correlation coefficient, R, between scores on the TRCM and teaching grade level is not significant at the .05 level. Therefore, the hypothesis is rejected.

H<sub>4</sub>: There is a significant relationship between teacher innovation and total teaching experience.

The multiple correlation coefficient, R, between scores on the TRCM and total teaching experience is significant at the .05 level. This hypothesis is supported. The  $R^2$  is .0464 which indicates that only 4.64% of the variance is accounted for by these two sets of variables.

H<sub>5</sub>: There is a significant relationship between teacher innovation and teaching experience in the present school.

It is found there is a significant relationship between scores on the TRCM and teaching experience at that school. The hypothesis is supported at the .05 level. The square of multiple correlation is .0348 which means only 3.48% of the total variance is explained by the two domains.

## CHAPTER V

### CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

This chapter includes a restatement of the hypotheses tested and the respective conclusions drawn from the statistical analyses. Implications and recommendations for further research will conclude the chapter.

This study was concerned primarily with determining whether a relationship existed between teacher innovation and teachers' attitudes toward participation in curriculum planning and use. Another concern was to examine relationships between teacher innovation and formal education, teaching grade level, total teaching experience, and experience in the present school.

Results of the study are limited to the particular population chosen. Therefore, conclusions are limited to the population as previously defined.

#### Conclusions

- H<sub>1</sub>: There is a significant relationship between teacher innovation as measured by the TRCM and teachers' attitudes toward participation in curriculum planning and use as measured by the CAI.

It is concluded, from the first canonical function, that teachers agree with the statement, "It is almost fantasy to expect a group of teachers to agree on what a curriculum ought to be (item 20);" but disagree with items that indicate child psychologists and children should contribute to a curriculum (items 26 and 41), and that curriculum planning contributes to a teacher's professionalism (item 45). The same teachers also disagree with items that textbooks and a curriculum are about equal in terms of usefulness to a teacher (items 37 and 46). These teachers are not likely to try a new, promising curriculum practice which they have not had an opportunity to see in operation and which involves a major shift in their current teaching procedures.

It is concluded, from the second canonical function, that teachers agree with items that indicate teachers should help in curriculum planning (item 30) and use curriculum for planning classroom activities (item 34), and that curriculum planning contributes to a teacher's professionalism (item 45). These teachers also agree that subject-matter department ought to have their own curriculum committee (item 49). The same teachers disagree with items that indicate it is important that all teachers use a curriculum (item 24), a good or bad curriculum depends on its content

(item 28), textbooks and a curriculum are about equal in terms of usefulness to a teacher (item 37), and in-service education is helpful to teachers in curriculum planning (item 43). These teachers are likely to try a curriculum change to which teachers and students in a neighboring district are responding favorably but are not likely to try a curriculum which involves planning and carrying out a major portion of their classroom activities with other teachers.

It is concluded, from the third canonical function, that teachers agree with items that indicate curriculum committee meetings are a bore (item 8) and that not enough teachers take part in curriculum planning (item 47). The same teachers disagree with items that indicate teachers should help in curriculum planning (item 30), after a curriculum is planned most teachers lose interest in it (item 33), and teachers are too busy with teaching problems to be concerned with curriculum problems (item 48). These teachers are likely to try a new approach to teaching which requires at least one full summer of formal training (at government or district expense) to use well and which can be used by classroom teachers without disturbing what they are currently doing but are likely to try a new, promising curriculum practice which they have not had an opportunity to see in operation and which involves a major shift in their current teaching procedures.

The general conclusion for this hypothesis is that teachers who tend to be innovative (willing to try new curriculum practices) tend to have positive attitudes toward participation in curriculum planning and use.

H<sub>2</sub>: There is a significant relationship between teacher innovation and formal education.

This hypothesis is rejected. Therefore, the amount of formal education that teachers have do not correlate with teacher innovation.

H<sub>3</sub>: There is a significant relationship between teacher innovation and teaching grade level.

H<sub>3</sub> is not supported. As far as teaching grade level is concerned, no differences between teachers who are likely to try new curriculum practices and those who are not.

H<sub>4</sub>: This hypothesis is supported. Hence, teacher innovation is significantly correlated with total teaching experience. Teachers who have fewer years of teaching experience are more likely to be innovative than those who have more years of teaching experience.

H<sub>5</sub>: There is a significant relationship between teacher innovation and teaching experience in the present school.

H<sub>5</sub> is supported. It is indicated that teacher innovation is significantly related with teaching experience in the present school. Teachers who have fewer years of teaching experience in that school are more likely to try



new curriculum practices than those who have more years of teaching experience.

### Implications

#### Hypothesis 1

This hypothesis is supported. It is recognized by many advocates such as Beauchamp (1975), Taba (1962), and Coffey and Golden (1957), that teachers are more likely to be innovative (less resistance to change) if they are involved in the process of change. Teachers who are using the curriculum will resist any change unless they have some part in determining it. The finding from this hypothesis provides empirical support for these recommendations because it demonstrates teachers who tend to be innovative also tend to have positive attitudes about curriculum. Administrators who want to make changes in their schools more successfully should consider the importance of teacher involvements in curriculum planning so the teachers who use the curriculum are not likely to resist that curriculum change.

#### Hypothesis 2

It is not supported. Lack of relationship is a sober finding. Conventional wisdom, college and university propaganda, bulletins, brochures, etc. suggest there should be a strong, positive relationship. Maybe this finding

supports the socialization theory (Griffiths, 1964) that innovation suffers in a school setting.

### Hypothesis 3

The hypothesis is not supported. The result from this study supports the studies, done by Lynn (1973) and Marsten (1976), that teaching grade level is not related to teacher innovation. Grade level taught, alone, is not related to teacher innovation. Evidently, it does not make any difference, what teaching grade level is, to teachers who are likely to be innovative and those who are not. Maybe if a relationship between teaching grade level and teacher innovation is investigated along with other variables such as classroom organization or organization climate, some relationship may be found.

### Hypothesis 4

This hypothesis is supported. Teachers who have more years of teaching experience are less likely to be innovative than those who have fewer years of teaching experience. This finding supports the studies, done by Wiley (1965), Carlson (1967), and Lynn (1973), but does not support the studies, done by Marsten (1976), and Bridges and Reynolds (1968). Maybe a relationship between teacher innovation and teaching experience is curvilinear.

### Hypothesis 5

This hypothesis is supported. It is a check on  $H_4$ . It apparently does not make any difference whether the years of experience are cumulative or location specific.

### Recommendations for Further Study

1. Randomly select teachers from a school district which is large enough to have a required number of teachers and replicate the study.
2. The instruments used in this study could be factor analyzed to determine what factors exist in each; whether or not there are any common to both; and possibly examine relations among the factors.
3. Other demographic data such as age, sex, subject taught, classroom organization, and number of curriculum courses may be included in further study.

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APPENDIX A  
CORRESPONDENCE RELATED TO USE OF TRCM

783 DeBarr  
Norman, Oklahoma 73069  
February 23, 1976

Dr. Edwin M. Bridges  
Department of Education  
University of California  
Santa Barbara, California 93106

Dear Sir:

Your article, "Teacher Receptivity to Change," Administrator's Notebook, Volume XVI, February, 1968, Number 6, has come to my interest. In the past several weeks I have been conducting a search of the literature in order to develop a prospectus for my dissertation to complete requirements for my Ph.D. degree at the University of Oklahoma. While conducting the search, teacher innovation became a focal point of my reading.

The scope of my study has not presently been determined since the study remains in the planning stages; however, I would like to seriously consider to use Teacher Receptivity to Change Measure in my study. Currently, my thought is to attempt to investigate the relationship between teacher innovation and teachers' attitudes toward curriculum use and planning.

At present, I would greatly appreciate your assistance in the form of providing me with information about the availability of the above materials, the cost involved in securing the materials if they are available, and any special permission you might feel would be appropriate before one proceeds in the direction I have indicated.

If I am able to utilize the TRCM in my study, I will be happy to provide you the results of my findings.

Your assistance of these requests at your earliest convenience will be greatly appreciated.

Sincerely,

*Normsri Dangharn*

Normsri Dangharn

STANFORD UNIVERSITY  
STANFORD, CALIFORNIA 94305

SCHOOL OF EDUCATION

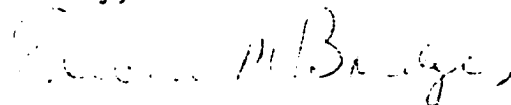
March 31, 1976

Ms. Normsri Dangharn  
783 DeBarr  
Norman, Oklahoma 73069

Dear Mr. Dangharn:

Enclosed is an unpublished paper about  
the Receptivity to Change Scale. Feel  
free to use it in your proposed study.

Sincerely,



Edwin M. Bridges  
Professor of Education

EMB:ed  
Enclosure

## APPENDIX B

### INSTRUMENTS:

CURRICULUM ATTITUDE INVENTORY (CAI)

TEACHER RECEPTIVITY TO CHANGE MEASURE (TRCM)  
TEACHER REACTION QUESTIONNAIRE

Dear Teacher:

The packet you have received should contain:

- I. Curriculum Attitude Inventory and Personal Data Sheet.
- II. Teacher Reaction Questionnaire.

Please answer all of them and do not take too much time on any one statement or item. When you have completed all of the items, please replace all materials in the sealable envelope provided and return it to your school's office by the day your principal has designated.

Upon completion of the study, I will be pleased to send you a copy of an abstract of the study.

Your cooperation will be deeply appreciated.

Sincerely,

*Normsri Dangharn*

Normsri Dangharn  
Graduate Student  
College of Education  
University of Oklahoma

Part I  
CURRICULUM ATTITUDE INVENTORY

This inventory is part of a study concerning what teachers believe about some issues relating to curriculum. Many different and opposing points of view are presented here. They are statements upon which people have legitimately different opinions. There are no "right" or "wrong" responses to any of these statements. You will find yourself agreeing very much with some, not agreeing very much with others, and somewhere in between with the rest.

There is no need to sign any part of this questionnaire. The only personal data desired is for purposes of comparing teachers with similar variables, e.g., number of years teaching experience, grade level, etc. The personal data sheet is provided for this information. Please fill it out accurately.

Begin your responses after completing the personal data sheet. Please respond to every item. There are no time limits, but do not spend a lot of time on any one item. Your first or immediate reaction is what is desired.



## PERSONAL DATA SHEET

Please fill in the blanks or check the appropriate spaces as they apply to you.

1. Age \_\_\_\_\_

2. Sex:

\_\_\_\_\_ Male

\_\_\_\_\_ Female

3. Teaching grade level:

\_\_\_\_\_ K-3

\_\_\_\_\_ 4-5

\_\_\_\_\_ 6-8

\_\_\_\_\_ 9-10

\_\_\_\_\_ 11-12

4. Formal education level:

\_\_\_\_\_ B.A.

\_\_\_\_\_ B.A. plus  $\leq$  15 hours

\_\_\_\_\_ B.A. plus  $>$  15 hours

\_\_\_\_\_ M.A.

\_\_\_\_\_ M.A. plus or second M.A.

\_\_\_\_\_ Ph.D. or Ed.D.

5. Total number of years of teaching experience \_\_\_\_\_

6. Total number of years of teaching experience in this school \_\_\_\_\_

Below and on the following pages are statements concerning curriculum matters. Mark each statement in the left hand margin according to the following scale.

- |                                  |                          |
|----------------------------------|--------------------------|
| 1: I agree very much.            | 4: I disagree more       |
| 2: I agree on the whole.         | than I agree.            |
| 3: I agree more than I disagree. | 5: I disagree on the     |
|                                  | whole.                   |
|                                  | 6: I disagree very much. |

- \_\_\_ 1. A curriculum should be a source of ideas for building units of work.
- \_\_\_ 2. Most education professors don't appreciate the value of textbooks to teaching.
- \_\_\_ 3. Parents of children in school have a right to be included in curriculum planning.
- \_\_\_ 4. Female teachers are more likely to use a curriculum than male teachers are.
- \_\_\_ 5. The teacher's copy of a textbook is far superior as an aid in planning lessons when compared with a curriculum.
- \_\_\_ 6. A curriculum should be the principal point of departure for teacher lesson planning in a school.
- \_\_\_ 7. If teachers were paid twice what they are now, then they could be expected to participate in curriculum planning.
- \_\_\_ 8. Curriculum committee meetings are a bore.
- \_\_\_ 9. Consultants and other outside "helpers" don't understand teachers' real problems.
- \_\_\_ 10. All curriculum change ought to be based on experimental research findings.
- \_\_\_ 11. Curriculum committees should be composed of younger teachers.
- \_\_\_ 12. A stable curriculum is better than a changing one.
- \_\_\_ 13. The trend seems to be more and more curriculum planning by teachers.

- |                                  |                          |
|----------------------------------|--------------------------|
| 1: I agree very much.            | 4: I disagree more       |
| 2: I agree on the whole.         | than I agree.            |
| 3: I agree more than I disagree. | 5: I disagree on the     |
|                                  | whole.                   |
|                                  | 6: I disagree very much. |

- \_\_\_ 14. Most of the time teachers say one thing and practice something different.
- \_\_\_ 15. Teachers will learn more about education when they participate in curriculum planning.
- \_\_\_ 16. The lack of a curriculum in a school indicates a lack of concern in the teachers.
- \_\_\_ 17. All this concern about curriculum will soon pass.
- \_\_\_ 18. Teacher creativity is bound to be stifled if a curriculum is used as a point of departure for teaching.
- \_\_\_ 19. Most curriculums end up hidden in a desk drawer.
- \_\_\_ 20. It is almost fantasy to expect a group of teachers to agree on what a curriculum ought to be.
- \_\_\_ 21. Most teachers have more important things to do than work on curriculum committees.
- \_\_\_ 22. Parents of children in school ought to have something to say about the curriculum.
- \_\_\_ 23. Every child ultimately end up with an individualized curriculum.
- \_\_\_ 24. It is important that all the teachers in a school use a curriculum.
- \_\_\_ 25. A curriculum that is good enough for white people is good enough for black people.
- \_\_\_ 26. Child psychologists ought to participate with teachers in curriculum planning.
- \_\_\_ 27. Elementary teachers need to use a curriculum more than high school teachers.

- |                                  |                          |
|----------------------------------|--------------------------|
| 1: I agree very much.            | 4: I disagree more       |
| 2: I agree on the whole.         | than I agree.            |
| 3: I agree more than I disagree. | 5: I disagree on the     |
|                                  | whole.                   |
|                                  | 6: I disagree very much. |

- \_\_\_ 28. A curriculum can be judged good or bad according to the scholarly respectability of its contents.
- \_\_\_ 29. It is practically impossible to get a group of teachers to agree on some curriculum matters.
- \_\_\_ 30. A good teacher is one who is willing to help in curriculum planning.
- \_\_\_ 31. Curriculum committees ought to be formed whenever the principal of a school deems it necessary.
- \_\_\_ 32. A curriculum is probably more of a help to teachers than the textbooks the children use.
- \_\_\_ 33. After a curriculum is planned most teachers lose interest in it.
- \_\_\_ 34. A curriculum ought to be referred to at least once a month for planning classroom activities.
- \_\_\_ 35. If a curriculum is good, it will be indicated by the pupils' achievement.
- \_\_\_ 36. A school can be judged by its curriculum.
- \_\_\_ 37. A curriculum and teachers' editions of textbooks are about equal in value in terms of helping teachers plan lessons.
- \_\_\_ 38. Teachers enjoy working on curriculum committees.
- \_\_\_ 39. An important aspect of curriculum planning is thinking of activities that will accomplish the objectives.
- \_\_\_ 40. If teachers do not aid in curriculum planning, they feel less compelled to follow it.
- \_\_\_ 41. Some parts of a curriculum can be written by the children of a school.

- |                                  |                          |
|----------------------------------|--------------------------|
| 1: I agree very much.            | 4: I disagree more       |
| 2: I agree on the whole.         | than I agree.            |
| 3: I agree more than I disagree. | 5: I disagree on the     |
|                                  | whole.                   |
|                                  | 6: I disagree very much. |

- \_\_\_ 42. Equal educational opportunity is assured when all teachers use the same curriculum.
- \_\_\_ 43. More in-service education is needed to help teachers learn to plan curriculums.
- \_\_\_ 44. The decision to use or ignore a planned curriculum should rest with the classroom teacher.
- \_\_\_ 45. Curriculum planning is one activity that contributes to teacher professionalism.
- \_\_\_ 46. A curriculum is a great deal more helpful to teachers than a set of textbooks.
- \_\_\_ 47. Not enough teachers take part in curriculum planning.
- \_\_\_ 48. Teachers are too busy with teaching problems to be concerned with curriculum problems.
- \_\_\_ 49. Subject-matter departments within schools ought to have their own curriculum committees.
- \_\_\_ 50. Every teacher on a curriculum committee ought to have a course in group dynamics.

## Part II

## TEACHER REACTION QUESTIONNAIRE

For each of the following statement indicate by means of a check (✓) the one action from among the choices a through e that a teacher like yourself would likely take.

- a. Initiate a request for permission to use it on a trial basis.
- b. Respond affirmatively to a request for volunteers to use it on a trial basis.
- c. Decide to use it on a trial basis if asked.
- d. Express a desire to stay with the present practice.
- e. Be strongly against the use of it on a trial basis.

Remember to indicate but one action from the above choices (a through e) for each of the following statements.

A teacher like myself . . .

1. After considering a new, promising curriculum practice which he/she hasn't had an opportunity to see in operation is likely to . . .
2. After considering a new curriculum idea whose superiority over the old practices hasn't been demonstrated conclusively in trials elsewhere is likely to . . .
3. After considering a new approach to teaching which requires at least one full summer of formal training (at government or district expense) to use well is likely to . . .

a	b	c	d	e

- a. Initiate a request for permission to use it on a trial basis.
- b. Respond affirmatively to a request for volunteers to use it on a trial basis.
- c. Decide to use it on a trial basis if asked.
- d. Express a desire to stay with the present practice.
- e. Be strongly against the use of it on a trial basis.

A teacher like myself . . .

	a	b	c	d	e
4. After considering a new curriculum practice which can be used by classroom teachers without disturbing too much what they are currently doing is likely to . . .					
5. After considering use of a new curriculum practice about which very little is known concerning the consequence of its use is likely to . . .					
6. After considering a curriculum change which involves planning and carrying out a major portion of one's classroom activities with other teachers is likely to . . .					
7. After considering a new, untested curriculum idea which involves a large amount of daily preparation if it is to have any chance of success is likely to . . .					
8. After considering a curriculum change to which teachers and students in a neighboring district are responding favorably is likely to . . .					

- a. Initiate a request for permission to use it on a trial basis.
- b. Respond affirmatively to a request for volunteers to use it on a trial basis.
- c. Decide to use it on a trial basis if asked.
- d. Express a desire to stay with the present practice.
- e. Be strongly against the use of it on a trial basis.

A teacher like myself . . .

9. After considering a new, promising curriculum practice which involves a major shift in his/her current teaching procedure is likely to . . .
10. After considering a new, promising curriculum practice which involves an increase in record keeping and paper work is likely to . . .

a	b	c	d	e



APPENDIX C

DESCRIPTIVE DATA OF DEMOGRAPHIC VARIABLES

## Frequencies and Percentages of Demographic Variables

Variables	$\frac{F}{N = 251}$	Percentages
Education		
1. B.A.	43	17.13
2. B.A. plus $\leq$ 15 hrs.	39	15.54
3. B.A. plus $>$ 15 hrs.	45	17.93
4. M.A.	26	10.36
5. M.A. plus or second M.A.	96	38.25
6. Ph.D. or Ed.D.	2	.79
Teaching grade level		
1. K-3	47	18.73
2. 4-6	41	16.33
3. 7-8	66	26.29
4. 9-10	41	16.33
5. 11-12	56	22.31
Teaching experience		
1. 3 yrs. or less	73	29.08
2. 4-6 yrs.	56	22.31
3. 7-9 yrs.	43	17.13
4. 10-12 yrs.	33	13.15
5. 13-15 yrs.	13	5.18
6. 16 yrs. or more	33	13.15
Experience at that school		
1. 3 yrs. or less	143	56.97
2. 4-6 yrs.	58	23.11
3. 7-9 yrs.	22	8.76
4. 10-12 yrs.	17	6.77
5. 13-15 yrs.	7	2.79
6. 16 yrs. or more	4	1.59

APPENDIX D

INTERCORRELATIONS OF THE SCORES ON  
TEACHER INNOVATION

Intercorrelations of the Scores on  
Teacher Innovation<sup>a</sup>

Item	1	2	3	4	5	6	7	8	9	10
1	1.00									
2	.34	1.00								
3	.20	.21	1.00							
4	.14	.13	.26	1.00						
5	.23	.32	.20	.14	1.00					
6	.29	.19	.28	.15	.15	1.00				
7	.29	.28	.35	.17	.35	.39	1.00			
8	.25	.13	.25	.29	.22	.25	.24	1.00		
9	.25	.20	.29	.23	.34	.34	.42	.26	1.00	
10	.18	.22	.35	.14	.27	.26	.49	.21	.54	1.00

Note.  $r > .15$ ,  $p < .01$ ;  $r > .11$ ,  $p < .05$

<sup>a</sup>As measured by the TRCM (see Appendix B).

APPENDIX E

INTERCORRELATIONS OF THE SCORES ON  
CURRICULUM ATTITUDE

## INTERCORRELATION MATRIX OF SCORES ON TEACHERS CURRICULUM ATTITUDES

	1	2	3	4	5	6	7	8	9	10
1	1.00									
2	-0.04	1.00								
3	0.0	-0.01	1.00							
4	-0.02	-0.12	-0.07	1.00						
5	0.0	-0.02	0.08	-0.16	1.00					
6	0.04	0.11	0.09	0.10	-0.06	1.00				
7	-0.04	-0.20	-0.01	0.05	-0.11	0.10	1.00			
8	0.33	0.08	-0.11	-0.01	0.21	-0.36	-0.23	1.00		
9	-0.01	0.06	-0.07	-0.11	0.12	-0.12	0.01	0.17	1.00	
10	-0.03	0.02	0.05	-0.04	0.07	-0.38	-0.08	-0.01	0.0	1.00
11	-0.04	0.01	0.08	0.01	-0.09	-0.03	0.04	-0.14	-0.03	-0.06
12	0.02	0.09	0.04	-0.08	0.16	-0.02	-0.11	0.04	0.11	0.09
13	-0.02	0.04	-0.06	0.07	0.32	-0.05	0.09	0.07	0.11	-0.04
14	0.07	0.0	0.13	-0.03	0.10	0.08	0.08	-0.10	-0.11	-0.08
15	-0.07	-0.06	0.0	0.02	0.14	0.05	0.07	0.08	0.05	-0.14
16	-0.04	-0.01	0.01	-0.10	0.04	0.07	0.04	-0.12	0.05	-0.12
17	-0.02	0.14	0.05	-0.01	0.08	-0.03	-0.04	0.04	0.08	0.08
18	0.0	0.14	0.01	0.0	0.13	0.36	-0.15	0.0	0.08	0.17
19	0.06	-0.03	-0.02	-0.06	-0.08	0.16	0.19	-0.21	0.03	-0.12
20	-0.05	0.07	0.04	-0.03	0.19	-0.05	-0.09	0.24	0.11	0.05
21	-0.03	0.12	0.10	-0.15	0.24	-0.04	-0.13	0.27	0.21	0.07
22	-0.01	0.11	0.59	-0.05	0.04	0.10	-0.08	-0.05	-0.07	0.06
23	0.07	-0.07	-0.12	-0.02	-0.07	0.33	0.02	-0.14	-0.02	-0.06
24	0.06	-0.02	0.05	-0.03	0.08	0.09	0.07	0.04	-0.05	-0.11
25	-0.06	0.04	0.10	-0.02	0.10	-0.05	-0.07	0.0	0.14	0.10
26	-0.02	0.06	0.08	-0.06	0.14	0.09	0.0	0.11	0.03	-0.15
27	-0.04	0.01	0.16	0.0	0.09	-0.04	-0.09	-0.03	0.06	0.05
28	-0.08	0.0	0.08	-0.09	0.08	-0.07	-0.17	0.13	-0.03	0.13
29	-0.06	0.17	0.07	-0.07	0.11	-0.02	-0.04	0.11	0.04	0.02
30	-0.03	0.06	0.03	0.02	0.06	0.06	-0.07	0.02	0.06	-0.01
31	-0.02	0.18	0.05	0.05	0.05	-0.07	-0.07	0.13	0.14	0.04
32	0.03	-0.10	0.0	-0.01	0.15	0.02	-0.01	0.05	0.05	-0.03
33	0.10	-0.08	-0.03	0.03	-0.04	0.07	0.08	-0.18	0.01	-0.11
34	0.03	0.06	0.03	-0.04	0.33	0.21	0.16	-0.09	-0.04	-0.02
35	0.0	0.07	-0.03	-0.01	0.02	-0.08	-0.09	0.08	-0.02	0.07
36	0.05	-0.07	-0.03	-0.01	0.09	0.14	-0.02	-0.08	0.01	-0.10
37	-0.03	0.05	0.03	-0.06	0.08	-0.10	-0.05	0.07	-0.06	0.12
38	0.06	0.02	0.0	-0.06	0.11	0.07	-0.07	0.12	0.08	-0.14
39	-0.12	-0.08	0.03	0.08	0.05	-0.03	-0.05	-0.01	0.01	0.05
40	-0.10	-0.04	0.05	0.01	0.08	0.13	0.10	-0.08	-0.02	-0.13
41	-0.02	-0.08	0.12	-0.02	0.09	0.05	0.04	0.10	0.09	0.10
42	-0.09	0.05	0.02	0.08	0.11	-0.01	-0.15	0.12	0.09	0.03
43	0.08	-0.02	0.10	0.0	0.07	0.04	-0.01	0.18	0.08	0.0
44	-0.01	-0.08	0.07	0.02	0.10	-0.02	-0.06	0.11	0.09	-0.03
45	0.11	-0.03	0.09	-0.03	0.20	0.04	0.06	0.01	0.05	-0.07
46	0.08	-0.01	0.11	-0.07	0.26	0.0	-0.03	0.06	0.15	-0.05
47	0.03	-0.01	0.35	0.33	0.03	0.03	0.03	0.17	-0.01	-0.09
48	-0.07	0.01	0.07	-0.18	0.15	-0.05	-0.09	0.19	0.14	0.10
49	-0.02	-0.09	0.0	-0.07	0.02	-0.02	0.08	-0.07	0.02	-0.02
50	0.04	-0.08	0.05	0.0	0.02	0.02	0.13	-0.02	-0.05	-0.11

INTERCORRELATION MATRIX OF SCORES ON TEACHERS CURRICULUM ATTITUDES (CONT.)

	11	12	13	14	15	16	17	18	19	20
11	1.00									
12	0.01	1.00								
13	0.10	-0.08	1.00							
14	0.02	0.10	0.07	1.00						
15	0.07	-0.01	0.20	0.05	1.00					
16	0.03	0.0	0.11	0.16	0.29	1.00				
17	-0.04	0.17	-0.05	-0.01	0.12	-0.04	1.00			
18	-0.01	0.16	-0.03	-0.04	0.13	-0.09	-0.15	1.00		
19	-0.04	-0.04	-0.02	0.24	0.02	0.05	-0.09	-0.09	1.00	
20	-0.14	0.08	0.10	-0.07	0.0	0.01	0.11	-0.02	-0.05	1.00
21	0.0	0.16	0.10	0.39	0.05	0.32	0.22	0.17	-0.05	-0.28
22	0.06	0.05	0.06	0.17	0.02	0.08	-0.04	0.13	-0.07	0.36
23	0.08	-0.07	-0.03	-0.08	-0.04	0.07	-0.19	-0.16	0.05	-0.10
24	-0.15	-0.02	0.04	0.10	0.17	0.18	0.02	-0.02	-0.02	0.03
25	0.06	0.13	0.06	-0.06	-0.07	-0.21	0.05	0.16	0.02	0.01
26	0.03	0.27	0.03	0.10	0.24	0.34	0.07	0.02	0.10	0.06
27	-0.03	0.18	-0.07	-0.11	0.01	-0.03	0.18	0.16	-0.11	-0.01
28	-0.08	0.14	-0.02	0.03	0.03	0.10	0.17	0.18	-0.09	0.02
29	0.02	0.01	0.02	-0.12	0.05	0.3	0.04	0.01	-0.21	0.50
30	0.0	0.06	0.06	0.0	0.30	0.21	0.11	0.17	-0.04	0.03
31	-0.11	0.15	-0.11	-0.02	-0.06	-0.16	0.10	0.01	0.05	0.0
32	0.04	0.03	0.07	0.07	0.26	0.23	-0.11	0.01	0.03	0.16
33	0.08	-0.07	0.02	0.27	0.01	0.06	-0.07	0.04	0.39	-0.33
34	-0.08	-0.06	0.15	0.18	0.09	0.03	0.01	0.07	0.15	0.04
35	-0.02	0.04	-0.14	-0.01	-0.11	-0.11	0.01	0.03	-0.13	0.03
36	0.02	0.01	0.07	0.03	0.24	0.25	0.06	0.06	-0.10	0.04
37	-0.02	0.12	-0.15	-0.02	-0.10	0.05	0.10	0.02	-0.03	0.04
38	-0.05	-0.13	0.04	-0.10	0.14	0.10	0.02	-0.02	-0.08	0.20
39	-0.04	-0.03	0.02	0.09	-0.36	0.11	-0.10	0.03	-0.03	0.10
40	0.07	-0.06	0.09	0.08	0.22	0.12	0.04	0.09	0.18	-0.02
41	0.03	0.31	0.10	0.06	-0.03	-0.10	0.03	0.06	0.08	0.10
42	-0.07	0.20	0.0	-0.02	0.0	-0.10	0.26	0.06	-0.09	0.09
43	-0.01	0.11	0.09	0.07	0.22	0.06	0.14	0.07	-0.01	0.11
44	-0.15	0.0	0.0	0.01	0.01	0.38	0.14	0.12	-0.13	0.08
45	-0.01	0.02	0.04	0.08	0.17	0.10	0.12	0.09	0.01	0.12
46	0.06	0.11	0.07	0.05	0.21	0.18	0.0	-0.01	-0.02	0.14
47	0.02	0.03	0.08	0.08	0.17	0.39	0.17	0.01	-0.06	0.10
48	-0.04	0.16	-0.02	-0.08	0.11	0.06	0.17	0.19	-0.18	0.22
49	-0.08	-0.05	0.07	0.0	0.06	0.06	0.04	-0.02	0.10	0.04
50	-0.01	-0.07	0.01	0.16	0.18	0.15	-0.09	-0.10	0.11	-0.04

## INTERCORRELATION MATRIX OF SCORES ON TEACHERS CURRICULUM ATTITUDES (CONT.)

	21	22	23	24	25	26	27	28	29	30
21	1.00									
22	0.13	1.00								
23	-0.20	-0.11	1.00							
24	0.11	0.11	-0.01	1.00						
25	0.04	-0.04	-0.03	-0.10	1.00					
26	0.13	0.07	0.08	0.25	0.04	1.00				
27	0.07	0.11	0.04	0.14	0.03	0.16	1.00			
28	0.18	0.08	-0.16	0.05	0.20	0.08	0.22	1.00		
29	0.26	-0.03	-0.08	0.02	-0.02	-0.08	-0.05	0.0	1.00	
30	0.19	0.09	-0.05	0.18	0.0	0.24	0.09	0.10	-0.02	1.00
31	0.02	-0.08	-0.08	-0.12	0.24	0.05	0.07	0.16	0.05	-0.18
32	0.12	-0.05	-0.03	0.09	-0.02	0.07	0.08	0.01	0.07	0.23
33	-0.09	-0.05	0.34	0.04	0.09	0.01	-0.05	-0.03	-0.29	-0.03
34	0.04	0.10	0.09	0.16	-0.12	0.09	-0.09	-0.03	0.0	0.08
35	-0.03	-0.11	-0.08	-0.22	0.08	-0.20	0.03	0.14	-0.02	-0.19
36	0.14	0.02	0.09	0.22	-0.16	0.06	-0.01	-0.14	0.17	0.24
37	0.05	-0.08	0.04	-0.07	0.10	0.02	0.12	0.16	-0.02	-0.13
38	0.14	0.0	3.0	0.04	-0.12	3.0	0.10	-0.13	0.22	0.16
39	0.08	0.05	0.03	0.08	0.06	-0.14	-0.01	0.01	0.12	-0.13
40	0.07	0.08	-0.05	0.13	0.02	0.12	0.04	-0.02	0.0	0.19
41	0.19	0.11	0.03	-0.02	0.16	0.17	0.04	0.17	-0.01	-0.03
42	0.07	-0.07	-0.09	-0.16	0.20	0.12	0.04	0.23	0.01	0.06
43	0.19	0.12	-0.15	0.13	-0.02	0.13	0.02	0.06	0.07	0.19
44	0.05	0.03	0.01	0.22	0.0	0.09	0.08	0.09	0.04	-0.01
45	0.18	0.12	-0.07	0.16	-0.04	0.10	0.04	-0.08	0.08	0.22
46	0.17	0.05	0.0	0.17	0.05	0.18	0.10	-0.04	0.11	0.25
47	0.14	0.09	-0.07	0.13	0.05	0.17	0.09	0.16	0.02	0.25
48	0.38	0.14	-0.14	0.08	0.04	0.15	0.15	0.17	0.20	0.18
49	0.06	-0.10	-0.02	0.15	0.12	0.08	-0.08	0.0	-0.05	-0.04
50	-0.09	-0.04	0.01	0.12	0.11	0.10	-0.01	-0.09	0.02	0.16



## INTERCORRELATION MATRIX OF SCORES ON TEACHERS CURRICULUM ATTITUDES (CONT.)

	31	32	33	34	35	36	37	38	39	40
31	1.00									
32	-0.08	1.00								
33	0.06	0.05	1.00							
34	-0.17	0.10	0.06	1.00						
35	0.26	-0.14	-0.10	-0.29	1.00					
36	-0.15	0.18	-0.06	0.13	-0.28	1.00				
37	0.16	-0.10	-0.03	-0.14	0.15	-0.16	1.00			
38	-0.08	0.11	-0.15	-0.06	-0.10	0.25	-0.04	1.00		
39	-0.01	0.04	0.04	-0.02	-0.03	0.09	0.13	-0.05	1.00	
40	-0.13	0.16	0.20	0.27	-0.17	0.17	-0.03	-0.02	-0.03	1.00
41	0.13	0.02	0.07	0.13	-0.04	0.13	0.08	-0.06	-0.10	0.07
42	0.19	-0.01	-0.13	-0.13	0.10	-0.20	0.04	-0.09	-0.06	-0.07
43	-0.03	0.12	0.0	0.10	-0.17	0.19	0.03	0.02	0.03	0.17
44	0.06	-0.05	0.10	0.0	0.36	0.13	-0.02	0.06	-0.04	-0.01
45	-0.02	0.14	0.04	0.12	-0.10	0.22	-0.05	0.11	-0.13	0.25
46	-0.05	0.54	-0.05	0.08	-0.21	0.20	-0.08	0.15	0.02	0.12
47	-0.34	0.11	0.06	0.06	-0.33	3.35	-0.03	0.02	-0.06	0.27
48	0.04	0.04	-0.24	-0.05	-0.04	0.08	0.01	0.21	0.05	-0.01
49	-0.02	-0.03	0.10	0.08	-0.06	0.05	-0.06	-0.10	-0.06	0.22
50	-0.11	0.16	0.09	0.03	-0.14	0.12	-0.14	0.04	-0.06	0.11

## INTERCORRELATION MATRIX OF SCORES ON TEACHERS CURRICULUM ATTITUDES (CONT.)

	41	42	43	44	45	46	47	48	49	50
41	1.00									
42	0.02	1.00								
43	0.09	-0.06	1.00							
44	0.02	-0.03	0.14	1.00						
45	0.12	-0.10	0.18	0.10	1.00					
46	0.03	0.01	0.18	-0.06	0.22	1.00				
47	0.13	0.08	0.29	0.08	0.24	0.19	1.00			
48	0.14	0.11	0.11	0.04	0.17	0.06	-0.03	1.00		
49	0.07	0.01	0.15	0.10	0.37	0.07	0.10	-0.05	1.00	
50	-0.08	-0.10	0.07	-0.03	0.13	0.13	0.08	-0.08	0.05	1.00

## APPENDIX F

CORRELATIONS BETWEEN THE SCORES ON TEACHER INNOVATION  
AND CURRICULUM ATTITUDE

Correlations between the Scores on Teacher Innovation  
and Curriculum Attitude

Item	TRCM									
	1	2	3	4	5	6	7	8	9	10
1	-.01	-.06	-.01	-.02	.01	-.01	.06	.02	-.02	-.01
2	-.02	-.10	-.02	.05	.10	.09	.05	.06	.05	-.03
3	.07	.02	.08	-.03	.05	-.01	.05	.00	-.02	.00
4	-.14	-.06	-.02	.02	.01	-.06	-.06	.04	-.04	-.01
5	.17	.15	.02	.08	.00	.14	.02	.00	.11	.13
6	-.04	.02	.05	.00	-.06	.01	.06	-.03	-.03	-.01
7	-.08	-.03	-.03	-.03	-.01	-.09	-.08	-.11	-.02	-.05
8	.09	.13	.06	.05	.04	.09	.14	.03	.20	.12
9	.10	.14	.06	.15	.06	.19	.16	.16	.16	.19
10	.08	.02	-.02	-.01	.01	.02	.04	.05	.01	.09
11	.04	-.04	.02	.13	.04	.00	-.01	-.01	.00	-.01
12	.11	.20	.08	.12	.20	.11	.15	.16	.19	.11
13	.15	.13	.12	.12	.09	.12	.10	.09	.13	.12
14	.04	.10	-.02	-.03	.01	-.03	.07	-.01	.01	.04
15	.16	.13	.05	.00	.10	.09	.04	.15	.16	.10
CAI 16	.10	.08	-.07	-.05	-.12	-.02	-.04	-.03	-.04	-.09
17	.01	.05	.21	.06	.14	.12	.11	.24	.16	.19
18	.07	.06	.12	.08	.14	.03	.05	.17	.18	.22
19	.02	.02	-.05	-.01	-.05	.00	-.01	.06	-.05	-.02
20	.13	.09	.10	.15	.12	.18	.15	.10	.22	.12
21	.11	.07	.14	.10	.07	.21	.21	.14	.20	.23
22	.02	.01	.02	-.02	-.01	.02	.09	-.07	-.01	-.03
23	.06	-.02	.01	.07	-.01	.08	.00	-.10	-.02	-.06
24	.08	.07	.04	.08	.02	.13	.13	.00	.18	.10
25	.17	.07	.11	.16	.19	.10	.13	.16	.18	.10
26	.17	.14	.20	.24	.11	.21	.10	.15	.24	.13
27	.17	.13	.14	.04	.17	.13	.15	.07	.09	.12
28	.02	.15	.12	.12	.18	-.02	.08	.15	.13	.13
29	.06	.05	.12	.10	.08	.15	.13	.07	.07	.05
30	.23	.13	.09	.06	.20	.09	.10	.18	.23	.16
31	.02	-.09	-.01	-.08	-.02	.09	.05	.06	.09	.06
32	.13	.13	.04	-.04	.09	.07	.08	.03	.15	.12
33	.03	-.15	-.09	.00	-.13	-.04	-.04	.07	.01	-.03
34	.05	.03	-.01	.12	.03	-.03	.00	.08	.00	.04
35	-.09	-.09	-.07	-.08	-.04	-.08	-.13	-.08	.00	-.02

Note.  $r > .15$ ,  $p < .01$ ;  $r > .11$ ,  $p < .05$

Correlations between the Scores on Teacher Innovation  
and Curriculum Attitude (Continued)

Item	1	2	3	TRCM		6	7	8	9	10
				4	5					
36	.05	.04	.03	.03	.00	.08	.08	-.03	.12	.08
37	-.04	-.09	-.13	-.01	-.03	-.16	-.10	.01	-.07	-.05
38	.07	.01	.05	-.14	-.03	.21	.08	-.05	.15	.17
39	.01	.02	.03	.05	.01	-.04	.06	-.04	-.02	.02
40	.03	.04	.04	.05	-.02	.01	-.02	.13	.01	.06
41	.23	.16	.10	.13	.15	.19	.13	.14	.22	.06
42	-.04	.07	.15	.05	.08	.03	.10	.17	.06	.11
CAI 43	.05	.17	.13	.10	.12	.11	.12	.03	.09	.07
44	.00	-.04	.07	.06	-.10	.03	.04	.08	.07	.01
45	.28	.13	.12	.09	.06	.12	.06	.15	.21	.17
46	.27	.20	.13	.10	.17	.12	.24	.06	.21	.18
47	.01	.06	.17	.17	.06	.08	.05	.10	.04	.06
48	.12	.10	.19	.08	.07	.28	.20	.07	.16	.22
49	-.02	-.05	.05	.18	-.06	-.09	-.01	.12	.02	.03
50	.15	.15	.05	-.03	.10	.09	.02	-.06	.04	.06

Note.  $r > .15$ ,  $p < .01$ ;  $r > .11$ ,  $p < .05$

## APPENDIX G

### CANONICAL ANALYSIS: TEACHER INNOVATION AND CURRICULUM ATTITUDE

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Canonical Function I:					
( $\chi^2 = 153.77$ , $df = 59$ , $p < .01$ , canonical correlation = .71)					
<u>TRCM</u>	Coefficients	<u>CAI</u>	Coefficients	<u>CAI</u>	Coefficients
1	-.42	1	.08	26	-.22
2	-.20	2	.03	27	-.16
3	-.07	3	.02	28	-.10
4	-.10	4	.11	29	-.04
5	-.18	5	.06	30	-.20
6	-.23	6	.04	31	.02
7	.08	7	.02	32	.08
8	.01	8	-.17	33	-.03
9	-.43	9	-.06	34	.08
10	-.05	10	-.07	35	-.07
		11	-.05	36	-.01
		12	-.08	37	.22
		13	-.20	38	-.09
		14	-.05	39	-.09
		15	-.04	40	.07
		16	.04	41	-.30
		17	-.13	42	.03
		18	-.13	43	-.08
		19	-.06	44	.10
		20	-.23	45	-.28
		21	.10	46	-.25
		22	.11	47	.20
		23	-.15	48	.02
		24	-.12	49	.12
		25	-.22	50	-.13

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 Canonical Function II:

 $(\chi^2 = 88.89, df = 57, p < .01, \text{canonical correlation} = .58)$ 


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<u>TRCM</u>	Coefficients	<u>CAI</u>	Coefficients	<u>CAI</u>	Coefficients
1	.01	1	.12	26	.04
2	-.04	2	-.01	27	-.03
3	-.06	3	.12	28	.27
4	.27	4	.16	29	.11
5	.16	5	-.20	30	.32
6	-.70	6	-.11	31	-.24
7	-.19	7	-.03	32	-.06
8	.73	8	.07	33	.03
9	.00	9	.11	34	.27
10	.17	10	-.03	35	-.09
		11	.05	36	-.06
		12	.17	37	.32
		13	-.01	38	-.27
		14	.00	39	.11
		15	.19	40	.02
		16	-.08	41	-.13
		17	.03	42	.06
		18	.13	43	-.28
		19	.06	44	.13
		20	.04	45	.25
		21	-.12	46	.01
		22	.18	47	-.04
		23	.23	48	-.25
		24	-.30	49	.38
		25	.05	50	-.21

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Canonical Function III:					
$(\chi^2 = 80.15, df = 55, p < .05, \text{canonical correlation} = .55)$					
<u>TRCM</u>	<u>Coefficients</u>	<u>CAI</u>	<u>Coefficients</u>	<u>CAI</u>	<u>Coefficients</u>
1	-.56	1	.07	26	.21
2	.17	2	.07	27	.02
3	.48	3	.00	28	.18
4	.49	4	.20	29	.24
5	.24	5	.07	30	-.34
6	.28	6	.17	31	-.25
7	.16	7	-.10	32	-.03
8	-.06	8	-.28	33	-.35
9	-.58	9	.22	34	-.10
10	.03	10	-.13	35	-.15
		11	.05	36	-.09
		12	-.02	37	-.19
		13	.12	38	-.22
		14	.02	39	.10
		15	-.24	40	.02
		16	-.19	41	-.13
		17	.17	42	.05
		18	-.01	43	.23
		19	.12	44	.02
		20	-.15	45	-.25
		21	.01	46	-.01
		22	-.06	47	.48
		23	.16	48	.35
		24	-.09	49	.07
		25	-.06	50	.07

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