DOCUMENT RESUME

ED 050 517 EC 032 234

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TITLE	A Study of Adoption of Innovation in Special Education: A Comparison of Texas School Districts Applying, and Those Not Applying, for "Comprehensive Special Education for Exceptional Children (Plan A)".
INSTITUTION	Texas Univ., Austin.
PUB DATE	May 71
NOTE	199p.; Ph.D. Dissertation, University of Texas
EDRS PRICE	EDRS Price MF-$0.65 HC-$6.58
DESCRIPTORS	Administrative Policy, Administrator Attitudes, Change Agents, *Decision Making, Demography, *Educational Innovation, *Exceptional Child Research, Power Structure, School Districts, School Superintendents, *Special Education
IDENTIFIERS	*Texas

ABSTRACT

A study was conducted to determine how Texas school districts that adopted an innovation in special education differed from the more than 1,250 that did not. Ten randomly selected districts from the 40 that adopted change were matched with 10 non-adopter districts. Members of the district power structure (as related to special education) were identified by questionnaires administered to the district superintendent, principals, and persons named by them as influential in the decision of whether to innovate. Subject and district demographic variables were compared and analyzed. Subjects and districts were found to be very similar, and indications were that there were no significant differences in perceptions of the new state plan for special education. These perceptions were apparently not the crucial variables in the decision to adopt or not adopt the plan. Most significant differences were related to the increased number of supportive personnel and services to be derived from adoption, suggesting that funding is such a strong incentive that decision-makers fail to see the necessity of extensive testing of the innovation. Methodology, related studies, tables of data, and conclusions are presented. (RJ)

A STUDY OF ADOPTION OF INNOVATION IN SPECIAL EDUCATION: A COMPARISON OF TEXAS SCHOOL DISTRICTS APPLYING AND THOSE NOT APPLYING FOR "COMPREHENSIVE SPECIAL EDUCATION FOR EXCEPTIONAL CHILDREN (PLAN A)"

The study investigated how school districts that adopt a specific innovation differ from school districts that choose not to adopt the innovation. Specifically, members of the power structure of the school districts as related to Special Education were identified. These members of the power structure, as well as superintendents and Special Education administrators, characterized this innovation according to the dimensions, relative advantage, compatability, complexity, divisibility, communicability.

The results of the study indicate that decision-making power in the sample school districts is very tightly confined to individuals in administrative positions of the school system. There were no statistically significant differences in the perceptions of adopters, non-adopters regardless of their level in the organization of the school districts. However, a number of other significant differences were observed in the characterization and in the perceptions of components of the new state plan.

Most significant differences obtained from the data are related to increased numbers of supportive personnel and services. This suggests that funding is such a strong incentive for decision-makers that they fail to see the necessity of any extensive testing of the innovation.

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by

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DISSERTATION

Presented to the Faculty of the Graduate School of

The University of Texas at Austin

in Partial Fulfillment

of the Requirements

for the Degree of

DOCTOR OF PHILOSOPHY

THE UNIVERSITY OF TEXAS AT AUSTIN

May, 1971

ACKNOWLEDGMENTS

Grateful appreciation is expressed to Dr. John D. King, chairman of my supervisory committee, for his support, guidance and understanding through the sequence of the study. Sincere appreciation is also extended to the other members of the committee, Dr. Anne Cooney, Dr. Ben M. Harris, Dr. Randal Parker, and Dr. John R. Peck. All members made significant contributions to the completion of this study.

Appreciation is expressed to Dr. Charles H. Meisgeier for his guidance in the initial development of the proposal of this study. Dr. Gerald D. Everett deserves special recognition for his guidance and the information provided in relation to computer programs and the computation center.

James Rodney Yates

The University of Texas at Austin
March, 1971

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CHAPTER I

DEVELOPMENT OF THE PROBLEM

Introduction

The United States of America has approached education uniquely. Adhering to a basic philosophy that all persons are entitled to an education, the United States has provided free public schools. For many years, it was felt that by providing free public schools and in requiring school attendance, the tenets of this philosophy were being met.

The lack of attention to those in school systems who were not achieving was almost universal. However, profound changes have only recently begun to occur in American society and its education systems. The emphasis of change has been toward those segments of population which have not achieved the ideal of equality--the disadvantaged, the handicapped and the minority group member.

Prior to this century, practically all care for the handicapped was for the affluent (Mackie, 1959), provided in isolated, residential or private institutions. Presently, by far the largest number of handicapped being provided services are found in public schools (Mackie, 1965).

The introduction of the Federal Government and its accompanying monies into programs for the handicapped has been extremely recent. In 1957, a total of only two-thirds of $1 million was appropriated for research connected with mental retardation (Fogarty, 1964). This represented the total Federal commitment to programs for the handicapped. Fogarty (1964) has indicated that the first specific training program directed toward mental retardation was created through Public Law 85-926 with an appropriation of $1 million a year to train teachers of these handicapped youth. From this beginning, there has been an increasing infusion of Federal programs and increasing monies related to the care and education of handicapped individuals. This past Congress passed the most complete and comprehensive of all legislation for the handicapped, Public Law 91-230 (Meisgeier & King, 1970). Appropriations of $100 million for handicapped students this past year (Gallagher, 1970) indicates a 100-fold increase in funds for the handicapped since 1957. However, a wide gap between individual and services still exists. Gallagher (1970) has indicated that only one-half of the seven million handicapped needing special education services presently receive any service. The obvious implication is that innovative approaches toward services for the handicapped are urgently needed today.

One of the major impacts of Federal programs for the handicapped has been the creation of a need and desire for public schools to display the ability to adopt innovations. The paradox of this necessity and desire is the notorious sluggishness of public schools to effect change (Mort & Cornell, 1938; Miles, 1964).

Traditionally, programs for the handicapped have been small, self-contained classrooms, e.g., one teacher to a small number of "homogeneously" grouped students. The students in the classes have ordinarily been identified by some diagnostic model resembling the medical-psychological model. The student has been categorized according to a number of specific types of handicapping conditions,e.g., mentally retarded, blind, etc. Through some type of administrative decision, the student was assigned to a specific classroom containing others of more or less the same diagnostic label. This has been frequently called the "special class model."

The theory behind such an administrative process and arrangement has been that specially trained teachers working with students of like handicap can develop instructional programs in the special classroom setting which will have either a remedial or compensatory effect upon the student's handicapping condition, thereby resulting in an individual productive to the limits of his potential.

The efficacy of such arrangements have been topics of scholarly papers (Baller, 1936) and professional conventions (Johnson & Kirk, 1950) for many years. Currently, such approaches to the education of the handicapped are under increasing criticism (Dunn, 1968; Lilly, 1970; Weatherman, 1970).

Despite the long history of special classes for exceptional children (Wallin, 1955), and the specific recommendation for utilization of such classes (Fitzgibbon, 1967) and their widespread existence in large numbers (Mackie, 1965) there is little clear evidence that such an organizational arrangement is superior. Conversely, there is no great body of persuasive knowledge that the exceptional child is receiving adequate educational services in any other organizational arrangement. Most comparisons have been made on some dimension of the variables of academic achievement, and/or social adjustment. The results of such studies present conflicting and inconsistent data. Such conflict and controversy, one might conclude, is producing a crisis in programming for exceptional children. As crisis in the past has produced innovation (for example, the Russian Sputnik bringing about rapid changes in American educational programs in science and engineering), perhaps this developing crisis is resulting in educational innovation.

The increasing call by individuals outside the educational community for evidence of quality in the educational

product is being heard. Special education has not escaped such scrutiny. Educational audit, performance contracts, and other business oriented vocabulary are being used with regard to special programs in education.

Despite the cries for change and for creative and innovative approaches to education of the handicapped, most states and local education agencies continue to utilize traditional approach; for the child who cannot fit into the general educational pattern, alternatives are limited. The main alternative to regular class has been and remains, placement in a special self-contained class. A state or local education agency deviating from this model in any meaningful manner would have to be considered innovative.

"Innovativeness is the degree to which individuals accept new ideas relatively earlier than others in a social system [Rogers and Havens, 1962, p. 35]." Innovation itself does not provide assurance of improvement, but openness to innovation does not preclude the possibility of improvement as does inability to innovate.

Background of the Study

The Texas State Board of Education approved a new state plan for special education on February 7, 1970. This plan reflects changes in philosophy, instructional patterns and staffing patterns for special education in Texas. It has

drawn national attention as being innovative and progressive, providing a true change of direction and emphasis (Descriptor, 1970). This new plan is a reflection of a number of sequential events occurring over a relatively short period of time. At the request of the Texas Education Agency, an in-depth study of special education in Texas--past, present and future needs--was completed (Management Services Associates, 1968). The Sixty-First Legislature of the State of Texas passed Senate Bill 230 in June of 1969. Formulation of this broad law into educational policy was reflected in the action of the State Board of Education in February, 1970.

Included within the state plan was the provision for "Comprehensive Special Education for Exceptional Children (Plan A)" (Texas Education Agency, 1970). This new state plan provides for all school districts within the state to be operating under Plan A by 1976. General aspects of Plan A which indicate innovativeness and radical change are:

- A new direction toward integrating the handicapped student into more regular programs with the movement away from self-contained special classes, with increased contact for the handicapped student with the normal stream of education.
- A more liberal allotment of funds for special education under the state minimum foundation program. The use of these funds is a decision of the local school

district with few specific guidelines for their use from the state education agency.

. An increase in the number of special supportive personnel and services for special education, such as special counselors, visiting teachers, psychologists, etc. with contracting with non-public schools and outside consultants for services.

. A broadening of the definitions of handicapped student and special education to include many more age groups and types of students.

Due to the radical changes in administrative arrangements and monetary allocations inherent in Plan A, only five school districts were chosen to operate under its guidelines during the school year 1970-71. However, increasing numbers of school districts were to be added to the plan in subsequent years until all districts are operating under the plan's guidelines in September of 1976.

The Texas Education Agency provided all school districts in the State of Texas equal information concerning Plan A and the opportunity to submit a proposal for implementing the plan within their local school district during the school year 1970-71. Of the more than 1300 public school districts existing within the State of Texas, only 40 made a decision to submit a proposal for Plan A.

Major Question of the Study

The small number of school districts indicating a desire to operate under Plan A and thus to innovate in the area of special education precipitates the major question of this study. What differentiates, if anything, Texas School Districts innovating in Special Education from other school districts in the state?

The study of adoption of innovation within an educational setting has occurred infrequently. Practically all such studies have been directed by Paul Mort (1938, 1941) at Columbia University. Although Mort's studies in education are numerous and span a lengthy period of time, the majority of investigations of innovation have been completed in the area of agriculture. Only quite recently has a further interest been developed in adoption of innovation in education settings. The need for more definitive studies in this area has been termed "urgent" by Katz, et al. (1963), and Jenks (1968). Beal & Bohlen (1968) and Kivlin & Fliegel (1967) have echoed this need.

Statement of Purpose

This study investigates how school districts that adopt a specific innovation (Comprehensive Special Education for Exceptional Children [Plan A]) differ from school districts that choose not to adopt the innovation. Specifically,

members of the power structure of the school district, as related to special education, were identified. These members of the power structure as well as superintendents and special education administrators characterized the innovation, and these characterizations were compared for statistical differences.

Theoretical Framework

Everett Rogers (1962) has developed a model useful for viewing the adoption of innovation within a social system. His paradigm is presented in Figure 1.1. Rogers' familiarity with studies from a number of disciplines, i.e., agriculture, medicine, education, etc., is reflected in this model. Although adoption and diffusion of innovation have been the most popular topics of research for rural sociologists, investigators completing research in this area appear to be generally unaware of findings of disciplines other than their own. Rogers' model provides some synthesis of studies into the process of innovation without regard to the discipline completing the research.

Although Rogers has developed the most extensive framework for adoption of innovation, as early as 1952 (Wilkening, 1952), the possibility of adoption of innovation being a process composed of stages was postulated.

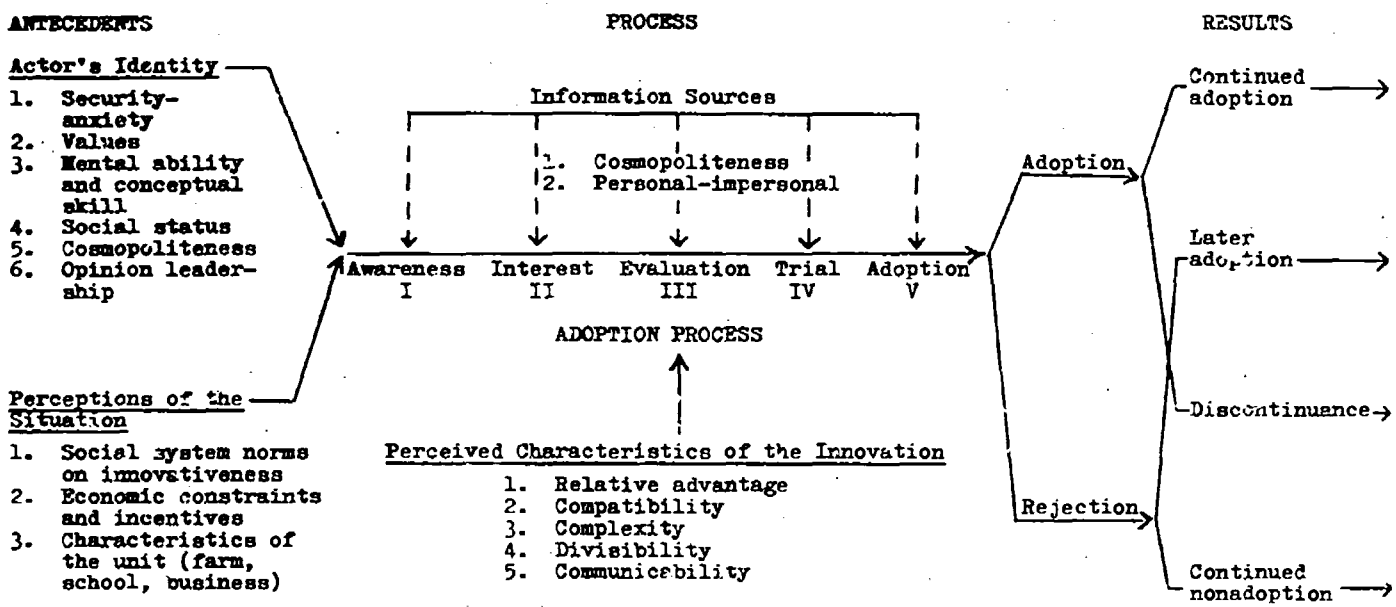


FIGURE 1.1

PARADIGM OF THE ADOPTION OF AN INNOVATION BY AN INDIVIDUAL WITHIN A SOCIAL SYSTEM

Rogers' model (1962) describes three major divisions as a framework for adoption of innovation:

1. Antecedents--those factors existent prior to the introduction of an innovation. Antecedents would be the particular characteristics of an individual, i.e., personal identifying characteristics and personal perceptions.
2. Process--those procedures completed by an individual in order to determine whether he chooses to adopt or reject an innovation. Two major sources of influence develop within this division: information sources which provide the individual with awareness of the innovation; and the individual's perception of the characteristics of the innovation itself.
3. Results--those decisions of adoption or rejection of the innovation made by the individual.

Rogers (1962) has suggested five stages of the process of adoption of innovation:

1. Awareness--the point at which an individual is exposed to an innovation.
2. Interest--the point at which interest in the innovation is developed and additional information concerning it is sought.
3. Evaluation--the point at which the individual cognitively accepts the innovation for trial.

4. Trial--the point at which the innovation is used on a small scale.
5. Adoption--the point at which the innovation is placed into full use.

Validity of these stages of the process of innovation has been provided in a study by Beal, Rogers & Bohlen (1957). Apparently, adopters of innovation are cognizant of the five specific stages. Out of 1170 potential stages in the Beal and Rogers sample, only 20 stages were omitted by respondents.

Specific characteristics of innovations have been identified by Rogers (1962):

1. Relative Advantage--the degree to which an innovation is superior to ideas it supersedes [p. 124].
2. Compatibility--the degree to which an innovation is consistent with existing values and past experiences of the adopters [p. 125].
3. Complexity--the degree to which an innovation is relatively difficult to understand and use [p. 130].
4. Divisibility--the degree to which an innovation may be tried on a limited basis [p. 131].
5. Communicability--the degree to which the results of an innovation may be diffused to others [p. 132].

Rogers (1962) has stated, "The adoption process is one type of decision-making. The adoption of an innovation requires a decision . . . [p. 77]."

Discussion of decision-making entails the development of the concept of power. When decisions concerning communities are made, the delineation of community power

structures becomes a crucial variable. Naturally such a phenomenon has occupied the attentions of sociologists, who have attempted to define power and structures of power by a variety of methods. However, "the most influential single postwar study on community power (both positively and negatively) has unquestionably been Hunter's [Clark, 1967, p. 291]." Hunter's method of procedure has come to be known as the "reputational" approach to assessment of power structures.

Bonjean (1963) has described the reputational approach as a method of asking certain members of the community under investigation to list and rank the most powerful and influential leaders in the community. Those names occurring with a certain frequency are interviewed and asked to list and rank leaders. This sequence is repeated until the same names begin to appear with a high level of frequency and agreement. This method has sometimes been referred to as the "snowball" or "inverted pyramid" technique.

It seems appropriate at this point to define power and power structure. Walton (1968), having surveyed completely the literature on power structure in communities, offered the following definitions:

> Power--capacity to mobilize resources for the accomplishment of intended effects with recourse to some types of sanction(s) to encourage compliance [p. 11].
>
> Power Structure--characteristic pattern within a social organization (community, state, nation) whereby resources are mobilized and sanctions employed in a way that affects the organization as a whole [p. 12].

Often power is simply defined as a person's capacity to influence another's behavior. Power structure could be defined as the composite of reputations accorded to a group of individuals. Kimbrough (1964) states, "The success of significant educational projects and proposals is often heavily dependent upon the support or lack of support of the men of power [p. 200]."

Conceptual Framework for this Study

This study had as its intent, the utilization of the process division of Rogers (1962). Specifically, focus was upon the evaluation stage of this division with the characteristics of innovations as defined by Rogers becoming the variables for determining the perceptions of adopters and non-adopters of special education innovation in public schools of Texas.

It has been indicated (Littleton, 1970) that perhaps the characteristics of innovations are less important in the decision to innovate than the support structures that the individual perceives for the particular innovation. For example, Littleton (1970) found that principals were unlikely to innovate unless they perceived support for that innovation from superordinates, peers and subordinates in the school system. It would seem important to relate perceptions of

the characteristics of the innovation to the levels of the organization to determine the amount of support present at a particular level. For example, in a bureaucracy such as a school system, there are a number of levels which could supply or withhold support for an innovation and each level might have some importance in the successful adoption of that innovation. The school board, superintendent, principals, directors, supervisors, teachers might be defined as some of the levels existing in a school organization.

The decision-makers concerning adoption of innovation have apparently been assumed obvious. For example, if a farmer adopts a new practice, he is assumed to be the decision-maker with regard to that adoption. However, the adoption of innovation in more complex organizations creates identification problems as to who was actually the decision-maker. It has been demonstrated (Bonjean, 1963; Blankenship, 1964) that decision-makers are not always visible. In fact, Bonjean (1963) calls attention to th e specific types of decision makers:

1. Visible--assigned power by bot leaders and non-leaders.
2. Concealed--assigned power by leaders but not by non-leaders.
3. Symbolic--assigned power by non-leaders but not by leaders.

The possibility of assigning decision-making power in complex organizations such as school systems to individuals other than those within the power structure would appear to be a possibility unless the structure of power is carefully identified.

This study utilized the reputational method of Hunter (1953) as adapted by Jonjean (1963) to identify the decision-makers of school systems in regard to special education innovation. At a conference on comparative research in community politics, the following statement was made by Presthus (1966):

> . . . the methodology of community power structure research is now fairly well established. We are beginning to get some consensus on the utility of the decisional approach, and the practical advantages of reinforcing it with the reputational technique [pp. 59-60].

Such a combination of techniques, decisional and reputational, was the procedure utilized in this study.

The study further determines whether individuals at different levels of the bureaucratic organization, the school system, are identified as decision-makers. For example, is the superintendent a member of the power structure delineated through the reputational method?

Hypotheses

The major research hypotheses of this study are:

1. There are significant differences in the characterization of "Comprehensive Special Education for Exceptional Children (Plan A)" made by members of the power structure and individuals in the school organization of school districts which adopt the innovation and those who do not.

2. There are significant differences in perceptions of the specific components of Plan A (i.e., increased contact for handicapped students with normal stream of education, more liberal funding for special education, increased numbers and types of supportive personnel, broadened definitions of special education) by adopter and non-adopter school districts.
3. There are significant differences in the perceptions of specific aspects of the relative advantage of Plan A (i.e., funds, personnel, prestige, outside pressures, instructional quality, legislative and administrative security, Texas Education Agency contact, teacher and curriculum influence, community support) by adopter and non-adopter school districts.
4. There is a significant difference in the number of special education services provided last year in adopter and non-adopter school districts.
5. Superintendents are identified as members of the power structure of school districts.
6. Adopting superintendents have a significantly higher level of support (i.e., agreement in characterization of Plan A) from power structure members and special education administrators than superintendents who do not adopt.

Ancillary Questions

1. Do superintendents, special education administrators and power structure members differ in their characterization of Plan A?
2. Are there differences in the number of educational innovations tried by adopter and non-adopter school districts in the past three years?
3. Are there differences in the number of technical resources available in adopter and non-adopter school districts?

Summary

This chapter has presented the development of interest and importance of the study. A presentation has been made of the theoretical framework for the study, utilizing the concepts of characteristics of innovation and the identification of power structure of communities. Succeeding chapters deal with the review of relevant literature, methods of procedure, analysis of data, and summary and conclusions.

REFERENCES

Allar, W. B. A study of the present social status of a group of adults, who when they were in elementary schools were classified as mentally deficient. Genetic Psychology Monographs, 1936, 18, 165-244.

Beal, G. M. & Bohlen, J. M. The diffusion process. In A. L. Bertran & R. C. Vonbeck (Ed.) Models for educational change, Austin: Southwest Education Development Laboratory, 1968.

Beal, G. M., Rogers, E. M. & Bohlen, J. M. Validity of the concept of stages in the adoption process. Rural Sociology, 1957, 22, 166-168.

Blankenship, L. V. Community power and decision-making: A comparative evaluation of measurement techniques. Social Forces, 1964, 43 (2), 207-216.

Bonjean, C. M. Community leadership: A case study and conceptual refinement. The American Journal of Sociology, 1963, 68 (6), 672-681.

Clark, T. M. Power and community structure: Who governs, where and when. The Sociological Quarterly, 1967, 8 (Summer), 291-316.

Descriptor. New state plan. Special Education Instructional Materials Center, The University of Texas at Austin, Author, 1970, 4 (2), 1-2.

Dunn, L. M. Special education for the mildly retarded--is much of it justifiable? Exceptional Children, 1968, 35 (1), 5-22.

Fitzgibbon, W. A. Public school programs for the mentally retarded. In A. A. Baumeister (Ed.), Mental retardation. Chicago: Aldine Publishing, 1967.

Fogarty, J. E. Stimulating special education through federal legislation. Exceptional Children, 1964, 31 (1), 1-4.

Gallagher, J. J. Unfinished educational tasks (thoughts on leaving government service). Exceptional Children, 1970, 36 (10), 709-716.

Hunter, F. Community power structure: A study of decision makers. Chapel Hill: University of North Carolina Press, 1953.

Jenks, H. C. A study of innovation adoption by teachers from a consortium of schools. Unpublished doctoral dissertation. The University of Texas at Austin, 1968.

Johnson, G. O. & Kirk, S. A. Are mentally handicapped children segregated in the regular grades? Exceptional Children, 1950, 17, 65-68.

Katz, E., Hamilton, H., & Levin, M. L. Traditions of research on the diffusion of innovation. American Sociological Review, 1963, 28 (2), 237-252.

Kimbrough, R. Political power and educational decision making. Chicago: Rand McNally, 1964.

Kivlin, J. E. & Fliegel, F. C. Differential perceptions of innovations and rate of adoption. Rural Sociology, 1967, 32 (1), 78-91.

Kohl, J. W. Adoption stages and perceptions of characteristics of educational innovations. Unpublished doctoral dissertation, The University of Oregon, 1966.

Lilly, M. S. Special education: A teapot in a tempest. Exceptional Children, 1970, 37 (1), 43-48.

Littleton, V. C., Jr. A study of the factors contributing to the predisposition of elementary principals to try selected innovations. Unpublished doctoral dissertation, The University of Texas at Austin, 1970.

Mackie, R. P. Spotlighting advances in special education. Exceptional Children, 1965, 32, 77-81.

Mackie, R. P. The cavalcade of special education for the handicapped. In B. MacLeech, & D. R. Schrader (Ed.), Seventh Annual Distinguished Lecture Series in Special Education and Rehabilitation. School of Education, University of Southern California, University Press, 1969.

Management Services Associates, Inc. Special education in Texas. Austin: Author, 1968.

Meisgeier, C. H. & King, J. D. The process of special education administration. Scranton, Penn.: International Textbook, 1970.

Miles, M. G. (Ed.) Innovation in education. New York: Bureau of Publications, Teachers College, Columbia University, 1964.

Mort, P. R. & Cornell, F. G. Adaptability of public school systems. New York: Bureau of Publications, Teachers College, Columbia University, 1938.

Mort, P. R. & Cornell, F. G. American schools in transition (How our schools adapt their practices to changing needs--A study of Pennsylvania). New York: Teachers College, Columbia University, 1941.

Presthus, R. Continuity and discontinuity in community power structure research. In T. R. Dye (Ed.) Comparative research in community politics. Proceedings of the conference in comparative research in community politics, University of Georgia, 1966.

Rogers, E. M. Diffusion of innovation. New York: The Free Press, 1962.

Rogers, E. M. & Havens, A. E. Predicting innovativeness. Sociological Inquiry, 1962, Winter, 34-42.

Texas Education Agency. Annual Statistical Report, 1968-69 Part II. Austin: Author, 1970.

Wallin, J. E. W. The odyssey of a psychologist. Wilmington, Delaware: Author, 1955.

Walton, J. Differential patterns of community power structure: An explanation based on interdependence. The Sociological Quarterly, 1968, 9 (1), 3-18.

Weatherman, R. Administration of special education for the seventies. Paper presented at the Special Study Institute for Doctoral Training in Mental Retardation, Austin, August, 1970.

Wilkening, E. A. Acceptance of improved farm practices. Technical Bulletin 98-RS, 1952, North Carolina Agricultural Experiment Station.

CHAPTER II

REVIEW OF LITERATURE

The process of adoption and diffusion of innovation has been studied extensively from the standpoint of adoption in stages, rate of adoption, innovation characteristics, adoption environment, characteristics of adopters, etc. Unfortunately, few of these studies occur in education; most such studies have been conducted in the area of rural sociology. For many years the professional literature of rural sociology and agriculture has been replete with studies dealing with adoption and diffusion of innovation. In fact, it has been the most popular topic of research, according to Rogers (1962). The rapid development of agricultural technology and its adoption into practice by the agricultural industry has no doubt been a major factor in this nation's ability to produce more than adequate foodstuffs for its population and in turn assume on numerous occasions the support of other nations with less developed agriculture. A parallel to the drastic and rapid changes which occur in agricultural practice is not evident in the field of education. Mort & Cornell (1938) in their classic studies of education change indicate the extreme reluctance of educational organizations to adopt

new practices. Miles (1964) has presented a number of reasons for the slower diffusion rates in education. These may be summarized as:

1. An absence of valid scientific research findings;
2. A lack of change agents to promote new ideas;
3. A lack of economic incentive to adopt innovations;
4. A presence of "ideological myths" such as teachers are "professional";
5. An existence of product specification as seen in national and state teacher exams;
6. A vulnerability of education to outside influences;
7. A tendency by education to use persons, not physical technology, as change agents;
8. A reliance on "lay" control of education.

Similar barriers to change in public schools are suggested by Carlson (1965):

1. An absence of a change agent;
2. A weak knowledge base;
3. A "domestication" of public schools as seen in their inability to select their clients--yet they must serve all clients.

Miles in Carlson, Gallagher, Miles, Pellegrin & Rogers (1965) has suggested that educational organizations have special problems due to:

1. Goal ambiguity;
2. Input variability;
3. Role performance invisibility;
4. Low interdependence;
5. Vulnerability to outside pressures;
6. Lay-Professional control conflicts;
7. Low technological investment.

Brickell (1961) has presented evidence of somewhat more rapid change occurring in education, particularly since the days of the Russian Sputnik.

Even with studies of educational innovation and adoption of educational innovation beginning to appear in the literature, the paucity of such studies is still more than evident. As a result of the scarcity of studies on educational innovation, the literature reviewed in this chapter is weighted heavily toward other disciplines, particularly rural sociology and agriculture.

Definitions

Lionberger (1960) and Beal & Bohlen (1957) indicated innovators are those individuals that are among the first to adopt new practices.

Rogers & Havens (1962) defined innovativeness as ". . . the degree to which individuals accept new ideas relatively earlier than others in a social system [p. 35]."

Extracting from the previous definitions, innovation is simply a new idea or practice.

Power has been defined by Rogers (1960) as ". . . the degree to which an individual can influence the actions of other group members [p. 142]."

Stages of Adoption

Wilkening (1952) was apparently the first person to point out the possibility of adoption occurring as a process which consists of stages.

In several publications, (Rogers and Beal, 1957; Rogers, 1960, 1962) it has been suggested that there are five principal stages of adoption of innovation:

1. Awareness--the point at which an individual is exposed to an innovation;
2. Interest--the point at which interest in the innovation is developed and additional information concerning it is sought;
3. Evaluation--the point at which the individual cognitively accepts the innovation for trial;
4. Trial--the point at which the innovation is used on a small scale;
5. Adoption--the point at which the innovation is placed in full use.

In Rogers and Beal's (1957) study of influence patterns at different stages of adoption, they found that personal sources of influence were most important at the Application and Trial stages. For those they designated innovators, 80 per cent of their sources of influence were impersonal (facts, data, etc.) at the Application stage. Further investigation prompted Rogers (1960) to indicate that personal influence appears to be most important at the Evaluation stage.

Beal, Rogers and Bohlen (1957) found evidence for the existence of the adoption process and its stages in a study which they conducted. Their sample generated the possibility of some 1170 stages in the various processes of adoption of their respondents. Of these 1170 possible stages, only 20 were not recognized as having occurred by the respondents in their process of adopting an innovation. Others have pointed out exactly the same stages of adoption as did Rogers (Copp, 1958; Beal & Bohlen, 1968). Kivlin (1960), Kohl (1966), Jenks (1968), Hearn (1969) and Littleton (1970), among others, have conducted studies utilizing these five stages of adoption.

Characteristics of Innovation and Rate of Adoption

A number of rural sociologists have published extensively concerning what they perceive to be the characteristics

of innovation. Lionberger (1960) suggests the following generalizations concerning characteristics of innovation:

1. Practices involving large capital outlay will be adopted more slowly than those requiring small amounts of capital.

2. The more compatible a practice with existing farming operations, the more likely it will be adopted quickly.

3. Traits or practices readily communicated by conventional methods used by farmers will be adopted more readily than those that are not.

4. The more difficult it is to retract a decision and the subsequent consequences, the slower adoption is likely to be.

5. Costly and complex practices that can be taken a little at a time will likely be adopted more quickly than where this is not possible [p. 105].

Fliegel & Kivlin (1966) have presented results of a study of characteristics and adoption rates. They include the characteristics:

1. Cost--initial and continuing costs;
2. Returns--rate of cost recovery, magnitude of return, social approval;
3. Efficiency--time saving, saving of discomfort;
4. Risk and uncertainty--regularity of reward, divisibility for trial;
5. Communicability of effects--complexity, clarity of results, regularity of reward, pay-off;
6. Congruence--compatibility, pervasiveness.

They found the highest correlations between attributes of the innovation and adoption rate, initial cost, .43; payoff, .36; regularity of reward, .30; divisibility for trial, .44; continuing cost, -.24; rate of cost recovery, -.23; and clarity of results, -.23.

Miles (1964) had the following generalizations concerning characteristics of innovation:

1. Cost becomes crucial in a situation where there is absence of good measurement of output.
2. The more divisible the innovation, the more likely it is to be adopted.
3. Technological innovations are more readily adopted.
4. Materials that are comprehensive aid adoption.
5. The more difficult to implement, the less likely is adoption.
6. The lower the compatibility, the less likely to adopt.
7. The lower the threat to existing practices, the more readily adopted.
8. The more easily institutionalized, the more readily adopted.
9. If very slight differences between current system, the less likely to adopt.
10. The lower the important value changes necessary, the more likely to adopt.
11. The more autonomy and initiative is increased, the more likely to adopt.

Utilizing a design relying almost entirely on self-report data, Carlson (1964) found a low negative correlation between rates of adoption and the characteristic annual expenditure per child of school districts.

Kivlin and Fliegel (1967) investigated certain characteristics of innovation and also related them to rate of adoption. Their findings from studying small and middle-sized farms suggest:

1. Cost is not a consistent variable.
2. Efficiency is not so important to small scale farmers.
3. Profit or return is very important to farm operations of both sizes.
4. Social approval is more important to middle-sized farmers.
5. Recovery of cost or quickness of return is most important to the small scale farmer.
6. Risk and uncertainty are important to both size farm operations.
7. Complexity is more important to small scale farmers.
8. Clarity is not of positive but of negative importance to farmers.
9. Compatibility is unclear in importance.
10. Communicability includes the implications of complexity and clarity.

E. M. Rogers has devoted a great deal of his research and thought to the characteristics of adoption. In his

reviews of the literature, Rogers has noted the use of some 39 characteristics. His sequential studies of the phenomenon reflect revision, factoring, and solidification of these many characteristics into a theoretical composite of five characteristics. This process of reduction can be documented by reviewing some of Rogers' studies in a time sequence.

Rogers (1960) suggested that the following characteristics affected the rate of adoption of innovations:

1. Cost--the lower the cost, the more readily adopted.
2. Complexity--the more simple, the more readily adopted.
3. Visibility--the more visible, the more readily adopted.
4. Divisibility--the more easily separated, the more readily adopted.
5. Compatibility--the more agreement with current ideas, the more readily adopted.
6. Utility--the more useful, the more readily adopted.
7. Group action--the more others must adopt also, the more readily adopted.

His current theoretical characteristics of innovation which affect adoption include (Rogers, 1962):

1. Relative advantage--the degree to which an innovation is superior to ideas it supersedes [p. 124].
2. Compatibility--the degree to which an innovation is consistent with existing values and past experiences of the adopter [p. 125].
3. Complexity--the degree to which an innovation is relatively difficult to understand and use [p. 130].

4. Divisibility--the degree to which an innovation may be tried on a limited basis [p. 131].

5. Communicability--the degree to which the results of an innovation may be diffused to others [p. 132].

The rate of adoption measured by a time sequence has been used by various investigators to identify operationally, adopters of innovation. Rogers (1960) suggests that adopters may be classified on the normal curve by the time at which they adopt. He utilizes the following classifications and percentages:

Innovators--2½%

Early Adopters--13½%

Early Majority--34%

Late Majority--34%

Laggards--16%

Lionberger (1960) agrees with Rogers (1962) in suggesting that adopters on a cumulative basis represent an S shaped curve. Figure 2.1 creates the S shaped distribution. Lionberger chooses the classifications: Early Adopters, The Majority, and Late Adopters. Jenks (1968) found the same normal distribution of adopters; however, he found some 4.2% of the population to be what he classifies as "Minimal Adopters." Rogers (1962) observed that adopters shift classifications over time but do not move more than two categories forward or backward. For example, it would be most unlikely for an early adopter to become a laggard or for a laggard to become an early adopter.

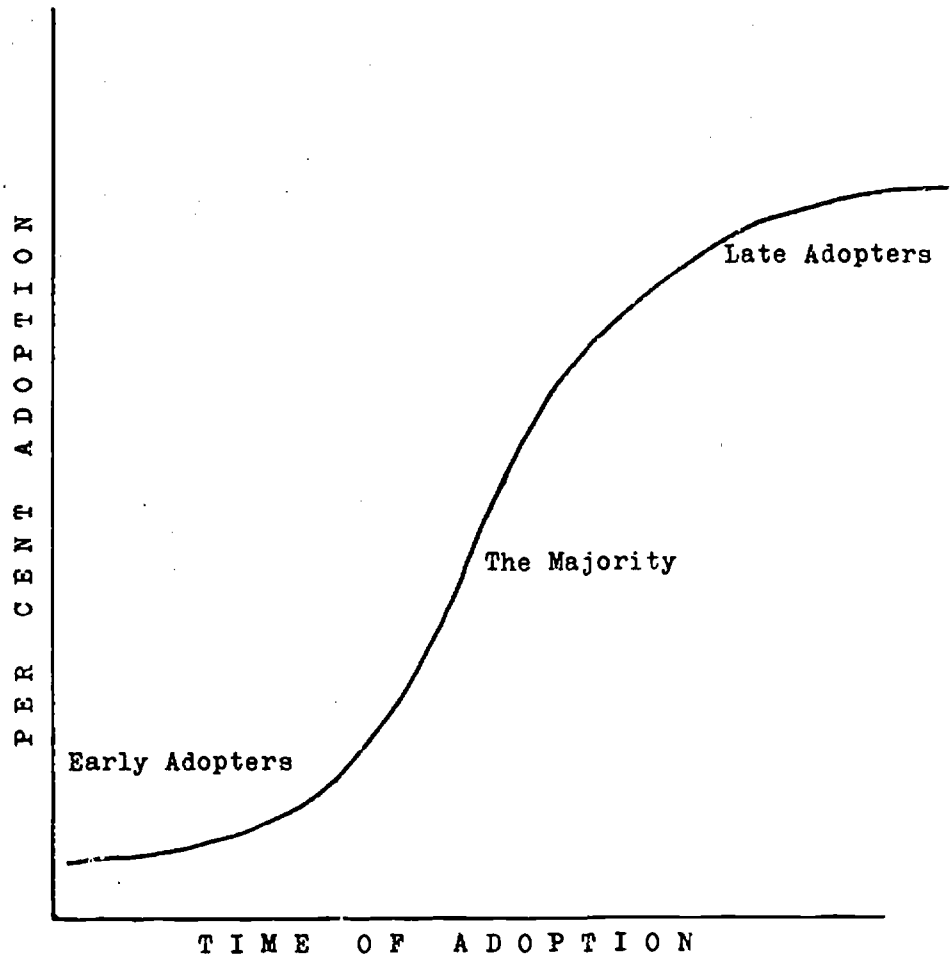


FIGURE 2.1

CUMULATIVE DISTRIBUTION OF ADOPTERS

Lionberger (1960) states that the rate of adoption is usually slow when a practice is first introduced, and more rapid later. For example, Lionberger (1960) indicates that it took twelve years from introduction to nearly complete adoption of hybrid seed corn in Iowa with only 6 per cent adoption during the first six years.

In educational research of adoption, Cocking (1951) found that the first 5 per cent of adoption took three times as long as the next 5 per cent. Apparently, this has been found to be a rather typical adoption pattern. Mort & Cornell (1941) found that generally, it took seven times as long for the first 10 per cent acceptance as the next 40 per cent.

Innovator Personal Characteristics

Much research has been conducted on the personal aspects of those individuals who choose to adopt innovations and those to make the opposite choice. These individuals have been studied from the standpoint of their values, influence, demographic characteristics, environment, etc.

In his now classic studies of superintendents, Carlson (1962) has indicated that superintendents who are new in the position, who are from outside the school system, are more successful in bringing about dynamic change. Carlson (1964) also found positive relationships existing between rate of adoption and the sociometric position of the superintendent, amount of interaction with colleagues, and his status level.

Watson (1967) provides a list of what he feels are personality variables that foster resistance to change:

1. Homeostasis of the organism;
2. Habit or learned responses;
3. Primacy or coping ability;
4. Selective perception and retention;
5. Dependence on what has already been experienced;
6. Illusion of impotence or victim of circumstance;
7. Super-ego or taboos or morals;
8. Self-distrust or lack of ego-strength;
9. Insecurity and regression or feelings of security in the past.

Rogers (1960) indicated that innovators were characterized by:

1. Higher levels of education;
2. Larger farm operations;
3. Higher incomes;
4. Higher social status;
5. Wider travel;
6. More memberships in formal organizations;
7. More cosmopolitan;
8. More research-minded;
9. Utilizing scientific experts more frequently;
10. Acquiring earlier knowledge of new ideas;
11. Requiring shorter periods of time to pass through the stages of the adoption process.

In Carlson, Gallagher, Miles, Pellegrin & Rogers (1965), Rogers offers the following generalizations about innovators:

1. Younger age;
2. Relatively high social status (income, education, prestige, etc.)
3. Utilize impersonal information sources;
4. Cosmopolite (widely traveled);
5. Exert opinion leadership;
6. Viewed as deviants, by peers, and by themselves.

Adopters are generally accurate in their self-image, as evidenced by accuracy in perceived to real levels of adoption. A correlation of .79 was found by Rogers (1962). Rogers & Havens (1962) were able to predict adoption utilizing the personal characteristics, gross farm income, age, belief in "agricultural magic," venturesomeness, social status. Analysis of the data using multiple correlation statistical techniques indicated that some 56.27% of the variance was accounted for by these variables. Cohn (1962) was able to account for some 54.76% of the variance by using the characteristics, mobility, individual values and family income.

The best predictors in a study by Rogers and Havens (1962) where some 64.1% of the variance was accounted for were:

1.	Community norms on innovativeness	20.0%
2.	Size of operation	14.4%
3.	Opinion of leadership or self-assurance	14.4%
4.	Communication behavior or willingness to seek information	8.9%
5.	Social status or position in the social structure	6.4%

Beal and Bohlen (1968) identified the following characteristics of adopters of farm innovations.

1. High net worth;
2. Can afford calculated risks;
3. Respected with prestige in the social system;
4. Adheres to community standards;
5. From well-established families;
6. Active in community activities;
7. Influential in community decision-making;
8. Belong to organizations outside of the local community;
9. Many informal contacts within the community;
10. More and widely varied sources of information;
11. Others look to him for guidance.

Numerous studies have considered less complete numbers of personal characteristics than the preceding studies. They may be grouped by specific categories:

Values. Two studies found similar significant negative correlations between high emphasis on security, traditionalism and adoption of innovation (Alexander, 1958; Ramsey, Polson, & Spencer, 1959). Similarly, Hoffer & Stangland (1958) found that farmers who identified themselves with the concepts of efficiency and self-reliance were more likely to adopt innovation than those who were identified with security and conservatism. Copp (1956) and Rogers (1957) conducted studies which would suggest that the individual mentally flexible, less dogmatic, is more likely to adopt.

Age. Most studies are consistent in their findings that the older individual is less likely to adopt innovation (Gross & Taues, 1952; Hess & Miller, 1954; Marsh & Coleman, 1955; Copp, 1956). Although age is a consistent variable related to adoption, its total relationship is not clear, as some of the data of these studies would indicate that the young are also less likely to adopt. This perhaps indicates the middle-aged, more secure, individual as the most likely to adopt innovation.

Education. As age has been a consistent variable of importance, so also do most studies agree on the finding that more schooling is positively related to the adoption of innovation. Wilkening (1952), Lionberger (1955), Marsh & Coleman (1955) and Copp (1956) all have produced data supporting the concept of years of schooling related positively

to adoption of innovation. Rogers (1962) has stated ". . . education is one factor that leads to more rational and discriminating decision-making in the adoption-rejection decision [p. 144]." However, such a variable as education is easily contaminated by such intervening variables as age, income, etc.

Income. High income has nearly always been related to a willingness to adopt innovation. Numbers of studies support this relationship (Wilkening, 1953; Fliegel, 1956; Lionberger & Coughenour, 1957; Copp, Sill & Brown, 1958). Similarly, Marsh & Coleman (1955) and Lionberger & Coughenour (1957) found that there was a positive relationship between socio-economic status and adoption of innovation.

Size. Size of the operation has been related in typical studies to adoption of innovation. The larger the farm operation, nearly always is it more likely to adopt than a small farm operation (Wilkening, 1953; Wilson & Gallup, 1955; Fliegel, 1956; Lionberger & Coughenour, 1957; Copp, 1958).

Influence Sources. The number of contacts or information sources that a person has, appears positively related to adoption of innovation in studies by Hoffer (1942) and Lionberger (1951). Hoffer (1942), Lionberger (1956), Lionberger & Coughenour (1957), and Copp (1958) found high positive correlations between adoption and the use of highly sophisticated information sources. For example, the farmer utilizing the

faculty of the University as an information source was more likely to adopt innovation than the farmer relying on friends or personal sources.

In fact, in general, reliance on relatives or friends has been found to be negatively correlated with adoption (Wilkening, 1952; Marsh & Coleman, 1954). Gallaher in Carlson, Gallaher, Miles, Pellegrin & Rogers (1965) feels that in education the most important characteristic of influence sources is prestige of the advocate of the innovation. Since the school administration is generally, according to Gallaher, "man in the middle," it is not an effective influence source. He advocates something for school systems which is equivalent to the agriculture extension service for a change agent or influence source. Griffiths in Miles (1964) seems to be saying basically the same thing: "The major impetus for change in organizations is from the outside [p. 431]." In school systems, "It appears that administrators who initiate change are influenced more by those outside the system than by those inside [p. 432]."

Rogers (1962) discusses personal influence ("direct interaction of persons in so far as this affects the future behavior or attitudes of participants") by relating when it is most important:

1. In uncertain situations;
2. For late adopters on the time continuum;
3. At the Evaluation stage.

A change agent is said by Rogers (1962) to be "a professional person who attempts to influence adoption decisions in a direction that he feels is desirable [p. 254]." Jenks (1968) found that in his study of adoption of educational innovations, the most significant overall factor in adoption was the elementary principal. In Littleton (1970) principals were influenced more in their adoption by "non-supportive" influence structures than by supportive.

Environment. The environment has been felt by some to be of crucial importance in the adoption of innovation. For example, Marsh & Coleman (1954) found that farmers residing in high adoption neighborhoods made much greater use of all sources of information than low-adoption neighborhoods. They also concluded that whether an innovation is adopted or not is partly a function of the adopter's neighborhood of residence.

Rogers (1962) has stated, "The characteristics of the innovation as perceived by the individual in a social system, affect its . . . adoption [p. 146]." One of the results of a study on the utilization of instructional television by Bessent, Harris & Thomas (1968) was that school districts adopting this educational innovation apparently cluster in geographic region. The authors name this phenomenon "contagion hypothesis."

Watson (1967) identifies factors which serve as resistors to change in the social system environment:

1. Conformity to norms;
2. Systemic and cultural coherence;
3. Vested interests;
4. Sacredness of some areas of culture;
5. Rejection of outsiders.

Paul Mort (1938, 1941) consistently points out that in school districts which adopt innovation, an atmosphere is found of high monetary expenditures per child.

Eichholz & Rogers in Miles (1964) suggest some environmental reasons for rejection of innovations:

1. Rejection through ignorance;
2. Rejection through default-knowledge but no interest;
3. Rejection in order to maintain status quo;
4. Rejection due to fear of social disapproval;
5. Rejection due to interpersonal relationships--friends do not use the innovation;
6. Rejection due to erroneous logic;
7. Rejection in order to substitute something else;
8. Rejection due to feeling that current practice is best;
9. Rejection due to experience--the innovation failed.

Environmental influences on adoption or rejection of innovation are difficult to isolate and therefore to substantiate. For example, cost is a very consistent environmental

variable identified in studies as being related to adoption of innovation. However, in two studies its influence is questioned. Bessent, Harris & Thomas (1968) found that there was inconsistency in regard to the wealth and expenditures of school districts when they tried to relate this variable to adoption of educational television. Carlson, as reported in Miles (1964), found a -.02 correlation between adoption of modern math and annual expenditures per child.

The safest conclusion to reach regarding factors related to the adoption of innovation is to recognize the fact that it is apparently a multi-dimensional phenomenon. Conclusions must be cautious and nearly related to individual situations. As Lionberger (1960) has stated, "Obviously many of the factors considered . . . are not independently related to the adoption of farm practices [p. 105]." He further states:

> . . . investigators have been able to explain only a small part of the variation in adoption rates by factors conventionally considered.
>
> . . . This suggests the need for including more factors and better measurement of those considered [p. 106].

Schiff (1966) also suggests investigation of the complex linkages of environment to change and organizational structure.

Power Structures

The preceding review of studies has indicated the consistent concern of investigators for the process of adoption

of innovation. Many suggested the importance of influence structures and related influence to a number of variables. Some suggestion was made of the existence of influence networks or power relationships in organizations. When adoption of innovation is conceptualized as a decision-making process as Rogers (1962) suggests, the literature regarding power structure has relevance.

Argyris (1965) suggests that adoption of innovation is a reflection of the day-to-day interpersonal relationships. The theory is advanced that organizations reflect the organizational beliefs of their members in pyramidal fashion. Hopkins (1964) discusses four variables associated with influence by an individual upon a group:

1. Rank--generally agreed upon worth of an individual to the group.
2. Centrality--the frequency range of interaction with others.
3. Observability--agreement level between individual opinions.
4. Conformity--congruence between individual views and group norms.

Kirst & Mosher (1969) indicate that there is little in the literature with regard to who "run schools" in relation to the study of this variable in municipal government, etc. These authors view the adoption of educational innovation as one of many categories of contemporary political phenomena which overlap, i.e., legislative processes, administrative policy-making, community dynamics, etc.

In Kimbrough's (1964) study of informal power structures which influence educational policy in southern counties, he found the tendency of previous studies was to consider the superintendent and the school bureaucracy as an entity and to compare its functioning with that of the school board, the community, etc. He states, ". . . the reputed power of the superintendent may actually be exercised by his subordinates so that he is himself unable to bring about changes in the system [p. 632]." Gittell (1970) suggests a similar possibility when she states, ". . . the major obstacle to creating a new balance of power that includes community control is the tenacity with which a small group in the centralized city school systems endeavors to maintain its position of power [p. 117]."

However, Rogers (1968) reaches different conclusions:

1. The greater the consolidation of power within the school system, the greater the likelihood of innovation.
2. Larger city populations are more difficult to form coalitions of power.
3. Fragmentation and pluralism prevent action and innovation.
4. The more interest group fragmentation, the more cross-pressures on city agency officials, resulting in more caution and vacillation on their part.

Beal & Bohlen in Bertram & Vonbeck (1968) indicate:

> Community actors will perceive that social power is exercised in the social system, i.e., that decisions will be made and action initiated by actors in power positions [p. 57].
>
> Internal knowledgeables and influentials will perceive the power structure to vary depending on the issue area, i.e., power actors in the area of education may not possess (as much) power in zoning [p. 57].
>
> Social power will be structured in the social system by influentials acting in concert, i.e., those in power will tend to interact with one another [p. 57].

When Dye (1967) placed political variables in a regression equation with economic variables, he found that the economic variables became non-significant. Presthus in Dye (1966) states, ". . . my own judgment is that the composition, resources, and procedures of any leadership structure are determined largely by this 'external' system [p. 67]." Prestige and esteem are theorized as being separate parts of power by Davis (1949). Jaco (1970) investigated this theoretical assumption of Davis. Jaco defined prestige as position, and esteem as the value of a person's role-expectations. The data would seem to indicate that these are indeed two separate variables. This becomes important when the general view of sociologists has been that power is a dimension of social position or related to social stratification. Several types of leaders have been suggested by various researchers. Freeman, Feraro, Bloomberg & Sunshine (1963) identified the following possible types:

1. Participation--active in decisions;
2. Authority--position is leadership;
3. Social active--membership in organizations;
4. Reputation--role of leader.

Blankenship (1964) suggests three types:

1. Institutional--heads of important institutions;
2. Effectors--small reputation but active in actual decision-making process;
3. Activists--nearly a way of life to be involved in organizations.

The intensive study of power has been a relatively recent activity of sociologists. Basically, the study by Hunter (1953) created the environment for debate and further research of the phenomenon of power. Hunter's study utilized what has come to be known as the reputational approach. This approach asks informants to name and rank the leaders of the community under investigation. Bonjean, Hill & McLemore (1967) have indicated that the informants might be:

1. Pre-designated panel of experts;
2. Random sample of community members;
3. Selected by a "snowball" or "inverted pyramid" technique;
4. Positional leaders above a certain set limit or level.

Dahl (1958) and others (Kaufman & Jones, 1954; Polsby, 1959; and Wolfinger, 1960) have been critical of the reputational

approach. This particular approach has been criticized for the following reasons:

1. Reputation may not be the same as fact.
2. The approach incorporates a prior assumption of a monolithic power structure.
3. The approach incorporates a prior assumption about the existence of a group structure.
4. The possibility of inaccuracies of respondent perceptions and semantic problems are present.

Others have advocated the study of power by an analysis of individuals who hold formal positions in the community. Schulze & Blumborg (1957) compared this approach with Hunter's reputational approach. Their results would seem to indicate that the "power elite" cannot be found by position alone but could be identified utilizing the reputational approach or a combination of both. Others have suggested that power be assessed by studying decisions. In fact, Bonjean, Hill and McLemore (1967) name some six approaches to the study of leadership in communities and organizations:

1. Economic dominants;
2. Influential organizations;
3. Informal leadership;
4. Leadership decision-making;
5. Leadership event analysis;
6. Leadership participant observation.

The real debate concerning assessment of power has been between what some call the "Elites" and the "Pluralists." The elites are those that generally have used the technique or some variation of the technique developed by Hunter. They argue that power is centered in a few individuals or elites. On the other hand, pluralists feel that there is not "ruling elite" but that power is distributed among many individuals depending upon the particular issue under consideration. Blankenship (1964) evaluated both approaches in a study. His results would indicate that there is considerable overlap among the methods, as a wide number of individuals had participated in decisions but the more participation by an individual, the more reputation he acquired. Reputation also appeared to be related to official position. Bonjean (1963) and Bonjean & Olson (1964) have developed a modification of Hunter's reputational approach which incorporates the strength of several methods. The Bonjean method begins the reputational survey with certain informed members of the community, thus incorporating the aspect of position. Questioning centers around a specific decision, thus including the advantage of the decisional approach. Bonjean (1963) reaches the conclusion, ". . . Analysis of the data indicates that reputational leaders are, in fact, meaningful groups and not artifacts of the operational measures. . . [p. 673]." Thomas (1966) states, ". . . it can be argued that if a

significant number of people perceive that a group of nominees has influence, those nominees very likely do have it, if only because people behave toward them as if they did [p. 9]." Thomas' study of the power structure of Austin, Texas, would seem to substantiate these remarks, as some 47 per cent of identified leaders resided in 2½% of the neighborhoods.

Literature Related by Theory and Design to the Current Study

Kivlin (1960) completed a study dealing with the rate of adoption and the characteristics of the innovation, Relative Advantage, Complexity, Compatibility, Divisibility, Communicability. He found that the highest correlation was between rate of adoption and Relative Advantage, Complexity and Compatibility. No significance was found between rate of adoption and Divisibility. The characteristics of his study accounted for some 51 per cent of the variance.

Kohl (1966) related the characteristics of innovation to adoption stages and perceptions of educational innovations. Kohl related the five characteristics of innovation to each of the stages of adoption theorized by Rogers. The study supported the concept of stages of adoption. Interestingly, Kohl found no characteristics significant at the Evaluation stage. To superintendents in the population studied, the Interest and Adoption stages appeared to be most

critical. The characteristics Relative Advantage, Divisibility and Compatibility were perceived more frequently than Complexity or Communicability. Of the variables considered by Kohl, size of district as measured by the size of the senior class was related to adoption of seven staff utilization practices with the exception of educational TV.

Jenks (1968) studied the adoption process by classroom teachers utilizing Rogers' model. Data was collected on personal characteristics, group or peer relationships, and organizational characteristics of the teacher's school. Of all variables, five proved significant:

1. Teacher ideal of influence by principal on the teaching process;
2. Ideal power in the school;
3. Actual influence by the principal;
4. Size of school enrollment;
5. Grade level taught.

Size of school enrollment contradicts data regarding size in other studies as the smaller enrollment increased adoption rates. The most significant overall factor in rate of adoption was found to be the principal.

Hearn (1969) conducted an interesting study of the ESEA Title III Grants under P. L. 89-10. He studied the characteristics of the adopter, characteristics of the social system, and the characteristics of the innovation. From a

population of 330 school superintendents, questionnaire data indicated that expenditures of money and number of persons served were positively related to continuance of the projects after the three year grant period. Costs per pupil were found to be negatively correlated with continuance of the projects. However, expenditures per child in the school district were positively related. Districts with higher educational levels and family income also tended to continue the projects, as did districts having superintendents hired from outside the district. Younger superintendents with doctoral degrees and more years of experience as superintendents had significantly greater adoption rates. Superintendents who were born in rural areas, moved frequently, attended out-of-state meetings, and who regarded themselves as innovators had greater adoption rates. All projects were rated high on the characteristics of innovation, Visibility, Compatibility, Complexity, Divisibility and Communicability.

Littleton (1970) studied the decision of principals to accept or reject certain innovations in light of their personal characteristics, the influence structures around them and the characteristics of the innovation. Utilizing regression equations, Littleton found that he could predict the principals' predisposition to try innovation. He found that the norms of the influence structure were the most important in determining the policy decisions by an individual.

Apparently, principals felt the need of strong support from peers, subordinates and superordinates in order to be willing to adopt innovation. Personal characteristics of the principals were poor predictors. High Relative Advantage, high Compatibility were the most important of the five characteristics of innovation to the principals in the adoption of innovation. An innovation was found to be most likely to be tried when support was high and difficulty of the innovation was low.

Summary

Many studies, basically conducted by rural sociologists, have investigated the process of adoption of innovation. Many of the variables investigated overlap, as well as many findings and conclusions were inconclusive or contradictory. However, the theoretical models for adoption and diffusion of innovation developed by Rogers have been consistently influential in the formulation of research in this area. This present study utilizes this relevant literature as a foundation of its theory, method and design.

REFERENCES

Alexander, F. D. Studying the decision-making process. State College of Washington, The Research Clinic on Decision Making, 1958, 21-35.

Argyris, C. Organization and innovation. Homewood, Illinois: Richard D. Irwin, 1965.

Beal, G. M. & Bohlen, J. M. The diffusion process. In A. L. Bertran & R. C. Vonbeck (Ed.) Models for educational change, Austin: Southwest Education Development Laboratory, 1968.

Beal, G. M., Rogers, E. M. & Bohlen, J. M. Validity of the concept of stages in the adoption process. Rural Sociology, 1957, 22, 166-168.

Bessent, W., Harris, B. M. & Thomas, M. P., Jr. Adoption and utilization of instructional television. Bureau of Laboratory Schools, The University of Texas at Austin, 1968, No. 20.

Blankenship, L. V. Community power and decision-making: A comparative evaluation of measurement techniques. Social Forces, 1964, 43 (2), 207-216.

Bonjean, C. M. Community Leadership: A case study and conceptual refinement. The American Journal of Sociology, 1963, 68 (6), 672-681.

Bonjean, C. M., Hill, R. J. & McLemore, S. D. Sociological measurement. San Francisco: Chandler, 1967.

Bonjean, C. M. & Olson, D. Community leadership: Directions of research. Administrative Science Quarterly, 1964, 9, 279-300.

Brickell, H. M. Organizing New York State for educational change. Albany: State Education Department, 1961.

Carlson, R. O. Executive succession and organizational change: Place-bound and career-bound superintendents of schools. Chicago: Midwest Administration Center, The University of Chicago, 1962.

Carlson, R. O. School superintendents and adoption of modern math: A social structure profile. In M. B. Miles (Ed.) Innovation in education. New York: Bureau of Publications, Teachers College, Columbia University, 1964.

Carlson, R. O. Environmental constraints and organizational consequences: The public school and its clients. In D. E. Griffiths (Ed.) National Society for study of education yearbook. Chicago: The University of Chicago Press, 1964.

Carlson, R. O. Barriers to change in public schools. In R. O. Carlson, A. Gallaher, Jr., M. B. Miles, R. J. Pellegrin & E. M. Rogers, Change processes in the public schools. Eugene: Center for the Advanced

Study of Education Administration, The University of Oregon, 1965.

Cocking, W. The regional introduction of educational practices in urban school systems of the United States. New York: Bureau of Publications, Teachers College, Columbia University, 1951, Study No. 6.

Copp, J. H. Personal and social factors associated with adoption of recommended farm practices among cattlemen. Kansas Agricultural Experiment Station Bulletin, 1956, 83.

Copp, J. H., Sill, M. L. & Brown, E. J. The function of information sources in the farm practice adoption process. Rural Sociology, 1958, 23, 146-157.

Dahl, R. A. A critique of the ruling elite model. American Political Science Review, 1958, 52, 463-469.

Davis, K. Human society. New York: McMillan, 1949.

Dye, T. R. Government structure, urban environment and educational policy. Midwest Journal of Political Science, 1967, 11, 353-380.

Eichholz, G. & Rogers, E. M. Resistance to the adoption of audio-visual aids by elementary school teachers: Contrasts and similarities to agricultural innovation. In M. B. Miles (Ed.) Innovation in education. New York: Bureau of Publications, Teachers College, Columbia University, 1964.

Fliegel, F. C. A multiple correlation analysis of factors associated with adoption of farm practices. Rural Sociology, 1956, 21, 284-292.

Fliegel, F. C. & Kivlin, J. E. Attributes of innovations as factors in diffusion. The American Journal of Sociology, 1966, 72 (3), 235-248.

Freeman, L. C., Feraro, T. J., Bloomberg, W., Jr. & Sunshine, M. H. Locating leaders in local communities: A comparison of some alternative approaches. American Sociological Review, 1963, 28 (5), 791-798.

Gallaher, A., Jr. Directed change in formal organizations: The school system. In R. O. Carlson, A. Gallaher, Jr., M. B. Miles, R. J. Pellegrin, & E. M. Rogers, Change processes in the public schools. Eugene: Center for the Advanced Study of Education Administration, The University of Oregon, 1965.

Gittell, M. The balance of power and the community school. In H. M. Levin (Ed.) Community control of schools. Washington: The Brookings Institution, 1970.

Griffiths, D. E. Administrative theory and change in organizations. In M. B. Miles (Ed.) Innovation in education. New York: Bureau of Publications, Teachers College, Columbia University, 1964.

Gross, N. & Taues, W. J. Characteristics associated with acceptance of recommended farm practices. Rural Sociology, 1952, 17, 321-327.

Hearn, N. E. Innovative educational programs: A study of the influence of selected variables upon their continuation following the termination of three-year ESEA Title III grants. Unpublished doctoral dissertation, George Washington University, 1969.

Hess, C. V. & Miller, L. F. Some personal economic and sociological factors influencing dairymen's actions and success. Pennsylvania Agricultural Experiment Station Bulletin, 1954, 577.

Hoffer, C. E. Acceptance of approved farming practices among farmers of Dutch descent. Michigan Agriculture Experiment Station Special Bulletin, 1952, 316.

Hoffer, C. R. & Stangland, D. Farmers' attitudes and values in relation to adoption of approved practices in corn growing. Rural Sociology, 1958, 23, 112-120.

Hopkins, T. K. The exercise of influence in small groups. Totowa, New Jersey: Bedminister Press, 1964.

Hunter, F. Community power structure: A study of decision makers. Chapel Hill: University of North Carolina Press, 1953.

Jaco, E. G. Prestige and esteem as power components: An experimental analysis. Social Science Quarterly, 1970, 50 (4), 1020-1028.

Jenks, H. C. A study of innovation adoption by teachers from a consortium of schools. Unpublished doctoral dissertation, The University of Texas at Austin, 1968.

Kaufman, H. & Jones, V. The mystery of power. Public Administration Review, 1954, 14, 205-212.

Ki[illegible]gh, R. Political power and educational decision making. Chicago: Rand McNally, 1964.

Kirst, M. W. & Mosher, E. K. Politics of education. Review of Educational Research, 1969, 39 (5), 623-640.

Kivlin, J. E. Characteristics of farm practices associated with rate of adoption. Unpublished doctoral dissertation, Pennsylvania State University, 1960.

Kivlin, J. E. & Fliegel, F. C. Differential perceptions of innovations and rate of adoption. Rural Sociology, 1967, 32 (1), 78-91.

Kohl, J. W. Adoption stages and perceptions of characteristics of educational innovations. Unpublished doctoral dissertation, The University of Oregon, 1966.

Lionberger, H. F. Sources and use of farm and home information by low-income farmers in Missouri. Missouri Agricultural Experiment Station Research Bulletin, 1951, 472.

Lionberger, H. F. Information-seeking habits and characteristics of farm operators. Missouri Agricultural Experiment Station Research Bulletin, 1955, 581.

Lionberger, H. F. Low-income farmers in the good farming areas of Missouri: Their characteristics, resources,

sources of information. Missouri Agricultural Experiment Station Bulletin, 1956, 668.

Lionberger, H. F. Adoption of new ideas and practices. Ames, Iowa: The Iowa State University Press, 1960.

Lionberger, H. F. & Coughenour, C. M. Social structure and diffusion of farm information. Missouri Agricultural Experiment Station Research Bulletin, 1957, 631.

Littleton, V. C., Jr. A study of the factors contributing to the predisposition of elementary principals to try selected innovations. Unpublished doctoral dissertation, The University of Texas at Austin, 1970.

Marsh, C. P. & Coleman, A. L. Farmers' practice adoption rates in relation to adoption rates of "Leaders." Rural Sociology, 1954, 19, 180-181.

Marsh, C. P. & Coleman, A. L. The relationship of farmer characteristics to the adoption of recommended farm practices. Rural Sociology, 1955, 20, 289-296.

Miles, M. B. (Ed.) Innovation in education. New York: Bureau of Publications, Teachers College, Columbia University, 1964.

Mort, P. R. & Cornell, F. G. Adaptability of public school systems. New York: Bureau of Publications, Teachers College, Columbia University, 1938.

Mort, P. R. & Cornell, F. G. American schools in transition (How our schools adapt their practices to changing needs--A study of Pennsylvania). New York: Teachers College, Columbia University, 1941.

Polsby, N. W. The sociology of community power: A reassessment. Social Forces, 1959, 37, 232-236.

Presthus, R. Continuity and discontinuity in community power structure research. In T. R. Dye (Ed.) Comparative research in community politics. Proceedings of the conference in comparative research in community politics, University of Georgia, 1966.

Ramsey, C. E., Polson, R. A. & Spencer, G. E. Values and the adoption of practices, Rural Sociology, 1959, 24, 34-47.

Rogers, D. 110 Livingston Street. New York: Random House, 1969.

Rogers, E. M. Personality correlates of the adoption of technological practices. Rural Sociology, 1957, 22, 267-268.

Rogers, E. M. Social change in rural society. New York: Appleton-Century-Crofts, 1960.

Rogers, E. M. Diffusion of innovation. New York: The Free Press, 1962.

Rogers, E. M. What are innovators like? In R. O. Carlson, A Gallaher, Jr., M. B. Miles, R. J. Pellegrin &

E. M. Rogers, Change processes in the public schools. Eugene: Center for the Advanced Study of Education Administration, The University of Oregon, 1965.

Rogers, E. M. & Beal, G. M. The importance of personal influence in the adoption of technological changes. Social Forces, 1957, 36 (4), 329-334.

Rogers, E. M. & Havens, A. E. Predicting innovativeness. Sociological Inquiry, 1962, Winter, 34-42.

Schiff, A. L. Innovation and administrative decision-making: The conservation of land resources. Administrative Science Quarterly, 1966, 11 (1), 1-30.

Schulze, R. O. & Blumborg, L. V. The determination of local power elites. The American Journal of Sociology, 1957, 63 (3), 290-296.

Thomas, M. P., Jr. Community governance and the school board: A case study. The University of Texas at Austin, Institute of Public Affairs, Public Affairs Series, 1966, 71.

Watson, G. Resistance to change. In G. Watson (Ed.) Concepts for social change. Washington: Cooperative Project for Education Development, National Training Laboratory, National Education Association, 1967.

Wilkening, E. A. Informal leaders and innovators in farm practices. Rural Sociology, 1952, 17, 272-275.

Wilkening, E. A. Adoption of improved farm practices as related to family factors. Missouri Agricultural Experiment Station Research Bulletin, 1957, 631.

Wilson, M. C. & Gallup, G. Extension teaching methods and other factors that influence adoption of agricultural and home economics practices. United States Department of Agriculture Federal Extension Service Circular, 1955, 495.

Wolfinger, R. E. Reputation and reality in the study of community power. American Sociological Review, 1960, 25, 636-644.

CHAPTER III

METHODS OF PROCEDURE

Population Samples

Forty school districts submitted proposals to the Texas Education Agency for Plan A special education services within their districts. These districts were presumed to be adopters of innovation. The remaining school districts of the state were considered to be non-adopters of innovation for purposes of this study. Jenks (1968) found 4.2 per cent of the population to be "minimal adopters" with other adopters completing a normal curve of continuum of adoption. Rogers (1960) indicated that individuals could be classified on a time sequence which conforms to the normal curve in regard to the adoption of innovation. Figure 3.1 is a presentation of this curve. It can be noted from the figure that some 2½ per cent of individuals are classified as innovators. The forty school districts of Texas classified as innovators in this study, interestingly, comprise approximately 3 per cent of the total number of school districts in the state, providing some measure of external validity to Rogers' time of adoption continuum.

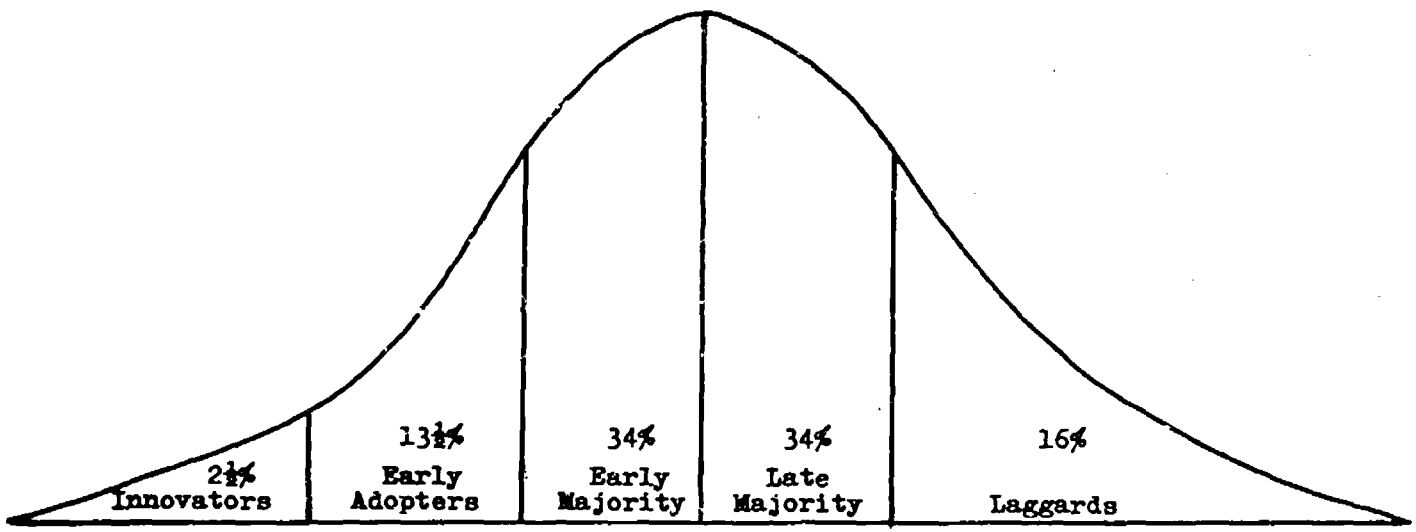


FIGURE 3.1

TIME OF ADOPTION CONTINUUM

The samples for this study were comprised of ten randomly selected districts from the total of 40 adopter districts. A like number of non-adopter school districts were a contrast sample, providing a total of 20 school districts participating in the study. Random selection of the ten districts was effected by utilizing the Rand Corporation table of random normal numbers found in Dixon & Massey (1969). Based on the assumption that possibly 10 per cent of the sample adopter districts and their match non-adopter districts might not respond to the request for participation in the study, eleven adopter and eleven non-adopter districts were mailed a letter seeking participation in the study (Appendix A).

The contrast sample was determined by selecting matched districts from a pool of non-adopter districts. Matching was completed on the variables: existence of a special education program, size of the district based on average daily attendance, expenditures measured by per capita cost, and geographic characteristics. These variables receive fairly consistent emphasis in the literature as being of significance in the adoption of innovation. For example, Paul Mort (1938, 1941) has indicated that expenditures per child is a crucial variable. Bessent, Harris & Thomas (1968) have indicated the importance of size of the school district and its geographic placement. The inclusion of the variable,

existence of a special education program is an obvious necessity in light of the hypotheses of the study.

The Texas Education Agency bulletin, Special Education Unit Allocation for School Year 1969-70, was the source of determining the existence of special education programs. The Texas Education Agency's most recent report to the Governor and the Legislature (Texas Education Agency, 1970) was the basis of data for determination of size, expenditures and geographic characteristics for the purpose of matching.

Sample districts were located in widely dispersed geographic regions of the state; for example, from the Texas-Oklahoma border to the Texas-Louisiana border. Indicative of the tremendous variance in Texas school districts, the sample reflects variances of average daily attendance from 31,958 to 452; per capita cost from $692.78 to $395.36; and from 58 to 2 special education teacher units.

From the 22 selected districts, ten adopter and nine non-adopter districts indicated willingness to participate. School districts not responding to the original letter of request for participation were sent the follow-up letter found in Appendix B. When no response was received from these three districts, a telephone call was made to the non-adopter district whose matching adopter district had already indicated willingness to participate. During this conversation, the superintendent indicated very strongly his resentment of

Plan A and his district's unwillingness to "go any further into it unless they force us." The resentment toward the new state plan was given as the reason for refusal to participate in the study. Specifically, the superintendent indicated that his district currently provided more than enough special education services and the new state plan for special education required spending too much of "tax-payers'" money on "those kinds of kids." It was indicated by the superintendent that contact by the investigator for the purpose of collecting data would be a waste of time, as his total response to all aspects of Plan A would be to indicate that his district is not "going into it."

Due to the refusal of this non-adopter school district to participate in the study, a return to the pool of non-adopter districts was necessitated in order to obtain a match for the adopter district. This was effected with no loss in the quality of the match. A willingness to participate in the study was obtained from this alternate match district.

Description of Instruments

Two specific instruments, comprising Appendices C and D, were developed in order to obtain the data of the study. Field testing of the instruments was accomplished utilizing respondents from several areas, i.e., special

education administration specialists, as well as persons outside the field of education. The suggestions and criticisms of these pilot subjects were incorporated in the final design of the instruments.

The two instruments had identical cover sheets consisting of a one-page summary of the Texas State Board of Education approved sequence of implementation, as well as a four-point summarization of components of Plan A. Such a cover sheet supplied all respondents with identical baseline input concerning the state plan and commom entering information for responding to the study instruments.

The instrument designed to identify the power structure of the district (Appendix C--Power Structure Survey Form [PSSF]) consisted of a one-page form requesting the naming and ranking of individuals considered by the respondent as most active in his school district's decision to participate or not to participate in Plan A. No limit on the number of individuals to be named was made; however, the respondent was requested to rank the three most active individuals.

The second instrument (Appendix D--Adoption of Innovation Questionnaire [AOIQ]) which was presented to all superintendents, special education administrators and individuals identified as members of the power structure contained five sections:

1. Descriptive information
   a. Demographic data concerning the individual;
   b. Personnel and services utilized in the district;
   c. General educational innovations tried by the district within the last three years;
   d. The respondent's sources of information concerning special education;
   e. Whether the district personnel attended Texas Education Agency dissemination workshops concerning the new state plan.
2. Description of last year's special education program
   a. Special education services provided by the district last year;
   b. New services provided under the guidelines of the new state plan present last year in the district.
3. Characteristics of Plan A

   Classification of components of Plan A according to:
   a. Relative advantage;
   b. Compatibility;
   c. Complexity;
   d. Divisibility;
   e. Communicability.
4. Characteristics of Plan A

   Paired choice between characteristics (relative advantage, compatibility, complexity, divisibility, communicability) when paired with every other characteristic.

5. Perceptions of Plan A

   Classification of the topics:

   a. Funding;

   b. Personnel;

   c. Prestige;

   d. Outside pressures;

   e. Instructional quality;

   f. Legislative and administrative security;

   g. Texas Education Agency contact;

   h. Teacher and curriculum influence;

   i. Community support of special education;

   j. Aspects of Plan A liked most and least.

Procedures

Standardized procedures were developed for data collection in all sample school districts and their match districts.

1. Appendix A contains the letter sent to all 20 school districts seeking their participation in the study.
2. Once participation was assured by the superintendent, a telephone call to the superintendent was made in order to establish a definite date for data collection.
3. Data collection proceeded in the following steps:
   a. The Power Structure Survey Form (PSSF) was presented to the superintendent.

b. The Adoption of Innovation Questionnaire (AOIQ) was presented to the superintendent.

c. At the superintendent's completion of the two instruments, a period of free interaction between superintendent and investigator was provided if the respondent wished. Such periods of interaction ranged from no interaction to one and one-half hours. Topics were broad and non-structured. These conversations provided the investigator with much subjective information concerning the school district, its personnel and its programs.

d. Steps identical to those with the Superintendent were followed with special education administrators and power structure members in terms of data collection.

e. Responses to the PSSF were obtained from principals in one of three ways:

   (1) The superintendent allowed the investigator fifteen minutes of a prearranged group meeting with principals.

   (2) The investigator contacted each principal individually in his building.

   (3) The PSSF was distributed by school mail and returned to the superintendent's office and in turn returned by the superintendent to the investigator. (Appendix E contains the letter of instruction to the principals.)

f. Principal responses were tabulated by simple frequency count, and individuals identified most frequently were contacted.

g. Personal contacts with the individuals identified by the PSSF were made and their responses to the PSSF obtained.

h. Responses to the AOIQ were obtained from individuals identified as members of the power structure.

In all districts, the first contact was made with the superintendent and his responses obtained. In a few instances the superintendent requested that the special education administrator and/or other school district administrative personnel be present when the investigator met with the superintendent. On these occasions the investigator made no deviations from the standard procedures but merely adapted them for group administration and accepted the questionnaire responses of all present. If some of the individuals present were not needed in terms of the research design, they were simply later discarded. However, quite frequently, such a request by the superintendent shortened the overall procedures, as the individuals were generally respondents who fit the tenets of the design. On only three occasions did any problem of interaction of superintendent and other personnel occur, and in each instance the investigator merely mentioned

that the responses were meant to be individual. In only one case did any further interaction occur.

Criteria designed to deal with ties and succeeding levels of the power structure survey were established prior to data collection. These criteria were:

1. Persons receiving twice as many choices as others were to be considered members of the next level of the power survey.
2. Ties among persons were to be broken by tabulating their rank order as indicated by respondents.

Utilizing the criteria of twice as many choices, it was not necessary to break any ties. Also of interest is the fact that in no case was it necessary to move to more than the second level in order to delineate the members of the power structure.

All data were collected between the dates October 1, 1970, and November 25, 1970. During this period of time the investigator was physically present in each district for the purpose of data collection. Data collection was completed within one day in most districts; however, in three districts, repeat visits were necessary in order to complete collection. These three districts necessitated two, three and four contacts.

Limitations of Procedures and Instrumentation

Some of the limitations of the study were obvious from its planning stages, while others became obvious during data collection. Those limitations identified were:

1. The limitations caused by the subjects' knowledge that they were participating in a research activity;
2. The limitations caused by the subjects' reliance on personal recollection of a prior event;
3. The limitations caused by the subjects' feelings of threat in responding;
4. The limitations caused by refusal to respond on the part of one superintendent and one power structure member;
5. The limitations caused by the reluctance and refusal of some principals to respond;
6. The limitations caused by using non-standardized instruments;
7. The limitations caused by not using a controlled environment for subject responses.

The limitations of knowing oneself is involved in a research activity is a common characteristic of many research studies. Webb, Campbell, Schwartz and Sechrest (1966) have indicated that there is a link between awareness of being tested and the production of socially acceptable responses.

These effects are unmeasured, but no doubt present, in the present study. Some effort to offset these reactions was made by the assurances of anonymity.

The fact that subjects were asked to recall which individuals were involved in the district's decision concerning Plan A created the possibility of the effects of unidentified intervening variables, such as forgetting. The fact that the design calls for recollection of a real rather than a hypothetical event could have reduced the possibility of these effects.

One superintendent and one member of the power structure refused to respond to the data collection instruments, although both individuals had agreed to participate in the study and both had provided specific appointments with the investigator. The fact that these individuals comprise only a small percentage of the total sample populations, as well as the fact that other individuals from their school districts did respond, should make the effects of their refusal to respond minimal.

Some principals either refused to respond or showed reluctance to write names of members of the power structure. The percentage of principals refusing was very small, with this refusal only occurring in larger districts in which principals' responses were obtained in group administrations. The effects of reluctance were unmeasured but are considered

an intervening variable. However, the fact that the Power Structure Survey Form does not require a name of the respondent should have assured anonymity of their responses.

The instruments utilized in this study adapt well-known techniques of instrumentation, i.e., Likert scale (Likert, 1932) and sociometric measurement. Murphy & Likert (1938) indicate that in their efforts to develop measurement instruments for social attitudes, the "Likert Scale" had certain specific advantages:

1. High test - retest reliability;
2. Ease of construction;
3. The elimination of external judges for validity.

The utilization of Likert type scales has occurred in a study specifically related to the measurement of adopter perceptions of characteristics of innovation (Hearn, 1969). Hearn suggested that the horizontal nature of such scales is advantageous, in that they are easy to follow visually and they may be readily coded for data processing. The support of Hearn's three major hypotheses, as well as other specific external validation of his results, would seem to provide some indication of the validity of the "Likert Scale" in adoption of innovation research. In order to investigate the internal reliability of items of the instruments, subroutine TESTAT from the EDSTATV LIBRARY (Veldman, 1970) was employed to compute an alpha coefficient of internal

consistency (Cronbach, 1951). A very high alpha coefficient of .916 was found among items on the scales for characteristics of innovation and components of Plan A.

Since data was collected in the physical environment of the school district, variances of environment were present. The effects of such variances were unmeasured but recognized. The standardization of instructions and techniques of data collection could have balanced some of these effects. The advantage of the investigator personally collecting the data is a positive aspect of the variance in physical environment, i.e., the investigator was assured of obtaining the subject's personal response (rather than that of some other individual, such as a secretary, or other subordinate).

Experimental Design

The classification of subjects into two major groups and three subgroups creates the possibility of multiple comparisons on a number of variables. A total of 53 subjects were included in the study, as seen in Table 3.1.

Once the responses to the AOIQ by these 53 subjects were coded into three IBM type cards per subject, it seemed essential to verify this data due to the large amount of data and numerous subtotals involved. The cards had been physically verified at the time of key punching, but totals

particularly were possible sources of errors. A Fortran language program, named CHECKER, was written in order to allow the computer to compute totals, verify column placement of data and subject card sequence. Program CHECKER did identify some 13 errors which were subsequently corrected.

TABLE 3.1

DISTRIBUTION OF SUBJECTS
BY ORGANIZATIONAL LEVEL

Adopter		
Superintendents	10	
Special Education Administrators	10	
Power Structure Members	5	
Total		25
Non-Adopter		
Superintendents	9	
Special Education Administrators	11	
Power Structure Members	8	
Total		28
Total Subjects		53

Processing of data was completed utilizing the facilities of the Computation Center, The University of Texas at Austin. This facility is an extremely large, sophisticated center which offers a wide variety of services to the university community, other institutions, and groups thoughout the state. A very large and fast digital computer, CDC 6600, is the heart of this system. One of the services available through the use of this center is the possibility of calling from disc, permanent file, or tape, a number of statistical routines created and maintained by specific individuals or departments. A library of statistical routines known as the EDSTAT LIBRARY, contains a wide variety of statistical programe developed by E. Jennings, H. Poyner and D. Veldman. EDSTATV (Veldman, 1970) was utilized extensively in the analysis of data of this study. Veldman (1967) describes in detail the specific approaches and Fortran programming utilized to develop many of these routines.

The analysis procedures were carried out in the following sequence:

1. Tabulation of subjects identified by the PSSF as members of the power structure into frequency distributions.

2. Development of descriptive statistics from demographic data of the sample districts and subjects included in the study.

DISTAT subroutine of the EDSTATV LIBRARY was utilized. This program is intended to provide descriptive statistical information about each of a series of variables, based on a particular sample of subjects. Specifically, the program provides Means, Standard Deviations, distributions of raw scores, their frequencies and percentages of N, their Percentile and Standard Score. Also provided in the program is a critical ratio which indicates the direction of skewness and kurtosis and its probability of occurrence.

3. Test of differences related to the hypotheses of the study.

The major question of the study (relating to adopter, non-adopter perceptions of characteristics of a specific innovation, Plan A) allows the creation of an experimental design corresponding to what Campbell & Stanley (1963) have called a "counter-balanced, quasi-experimental design." Figure 3.2 presents the relationships of independent and dependent variables. It can be seen that the matched (counter-balanced) groups of adopters, non-adopters with their nested organizational levels of superintendents, special education administrators, and power structure members may be compared on the basis of the four major components of Plan A within the repeated measures of the five characteristics of innovation.

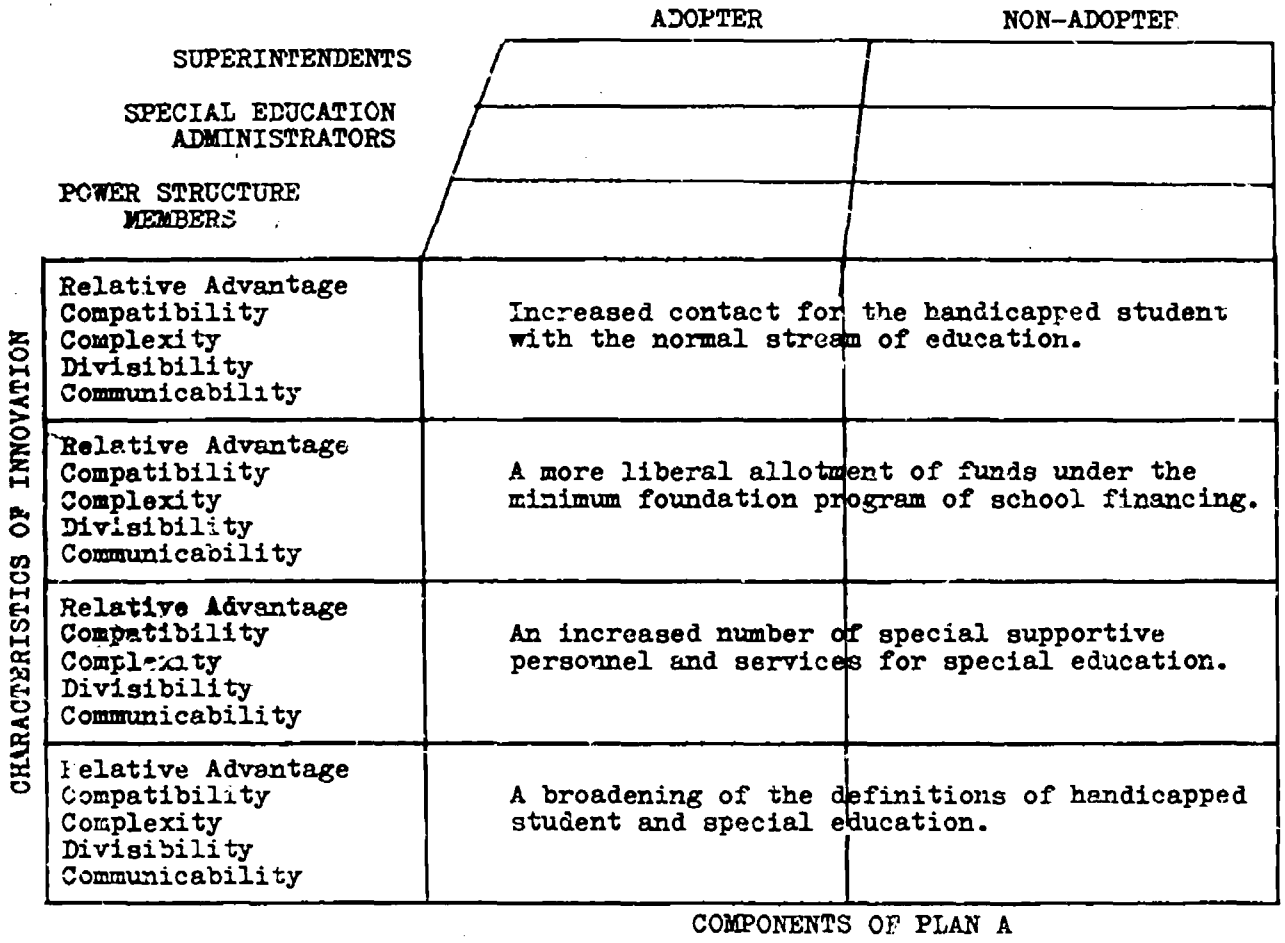


FIGURE 3.2: TWO BETWEEN AND ONE WITHIN ANALYSIS OF CHARACTERISTICS AND COMPONENTS

An assumption of many statistical routines (such as most analysis of variance calculations) is that the cells are of equal size. For this reason a Chi Square comparison of subject cells was computed. No significant statistical differences ($p < .05$) in cell numbers were found, as shown in Table 3.2. Subroutine CHICHI of the EDSTATV LIBRARY made these calculations.

TABLE 3.2

CHI-SQUARE OF SUBJECT CELL SIZE

Observed Frequency		
Adopter		Total N = 53
Superintendent	10	Chi-Square = 2.585
Special Education Administrator	10	D. F. = 5
Power Structure Member	5	P. = .7659
Non-Adopter		
Superintendent	9	
Special Education Administrator	11	
Power Structure Member	8	

A. AV2B1W subroutine of the EDSTATV LIBRARY.

Computational procedures for this analysis of variance routine provide analysis of variance with two between and one within classification (repeated measures). Applying this routine to the design presented in Figure 3.2, there are four dependent variables (the four major components of Plan A), two levels for between-factor A (adopter, non-adopter groups), three levels for between-factor B (superintendents, special education administrators, power structure members) and five levels for the within-factor (relative advantage, compatibility, complexity, divisibility, and communicability).

By placing the five characteristics of innovation in this analysis design as dependent variables, the two between-factor levels remain the same and the within-factor becomes the four major components of Plan A. With this design for analysis, the possible comparisons suggested by Figure 3.2 can be completed.

B. AVAR23 subroutine of the EDSTATV LIBRARY.

Computational procedures for the analysis of variance routine conducted by AVAR23 correspond to those described by Winer (1962). "Tests of significance are computed for the general effects of each of the two or three 'factors' as well as for their interactive effects upon the dependent variable [Veldman, 1967, p. 257]."

In order to assess possible differences in the characteristics of innovation, regardless of the component of Plan A to which they were applied, the AVAR23 subroutine was utilized. The five characteristics are the dependent variables; Factor A the adopters, non-adopters; Factor B the superintendents, special education administrators, and power structure members. Figure 3.3 presents this design.

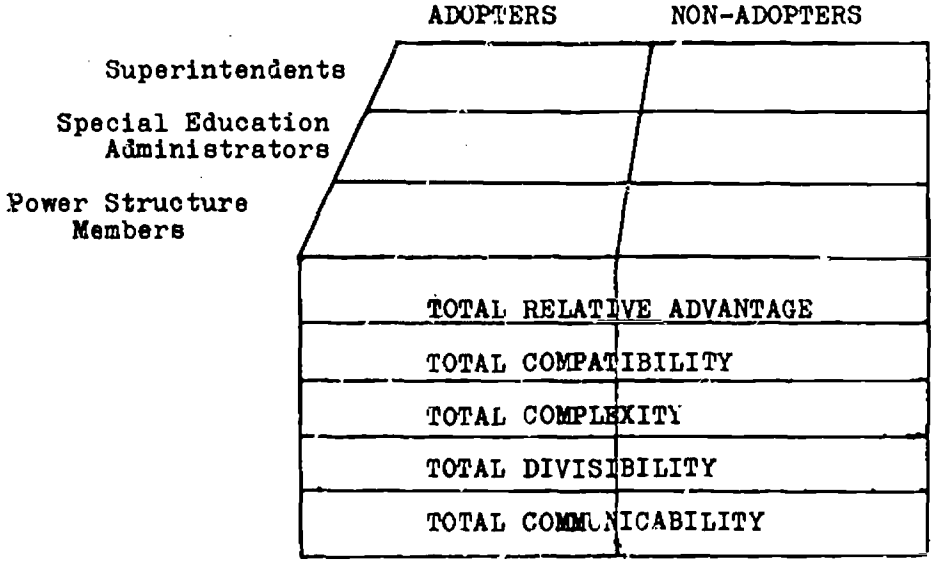


FIGURE 3.3

TWO-WAY ANALYSIS OF TOTALS
ON INDIVIDUAL CHARACTERISTICS OF INNOVATION

To evaluate differences in the components of Plan A without attention to the characteristics individually, the four components become dependent variables, the various groups remain the same for Factors A and B as in the previous design. AVAR23 subroutine is again applied to this design, represented in Figure 3.4.

		ADOPTERS	NON-ADOPTERS
Superintendents			
Special Education Administrators			
Power Structure Members			
TOTAL	Increased contact for handicapped student with normal stream of education		
TOTAL	More liberal allotment of funds under minimum foundation program of school financing		
TOTAL	Increased number of special supportive personnel and services for special education		
TOTAL	Broadened definition of handicapped student and special education		

FIGURE 3.4

TWO-WAY ANALYSIS OF TOTALS ON THE FOUR SPECIFIC COMPONENTS OF PLAN A

Applying AVAR23 to the design presented in Figure 3.5, the data may be evaluated in light of another hypothesis of the study (differences in the perceptions of specific aspects of Relative Advantage). The total of all eleven specific components of Relative Advantage becomes the dependent variable; two levels of the A Factor (adopters, non-adopters), and three levels of the B Factor (superintendents, special education administrators, power structure members) are evaluated.

By placing the arithmetic total of components of Relative Advantage into the design as the dependent variable, the other levels remain the same, and evaluation of differences is completed.

Utilizing the same subroutine, AVAR23, an evaluation of differences among Means of the groups can be made in regard to the number of special education services available in the school district last year. The special education services are entered into the program as a dependent variable; two levels of A Factor and three levels of B Factor remain the same as in the previous design. Figure 3.6 presents these variables.

AVAR23 subroutine serves as a suitable statistical analysis procedure for evaluation of differences among groups on the dependent variable, number of educational innovations tried. The levels of Factor A and Factor B remain the same

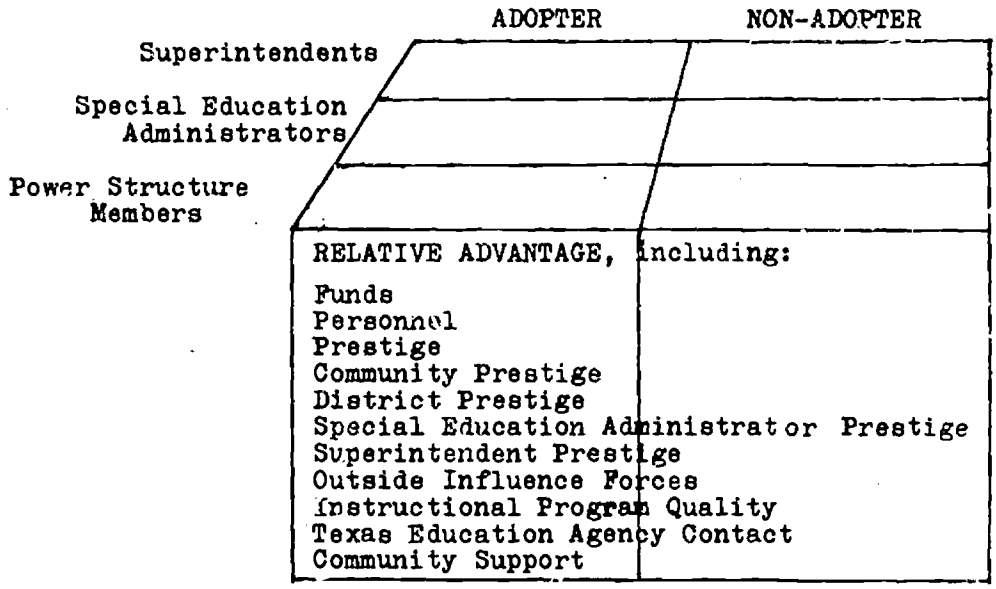


FIGURE 3.5

TWO-WAY ANALYSIS OF SPECIFIC COMPONENT RELATIVE ADVANTAGE

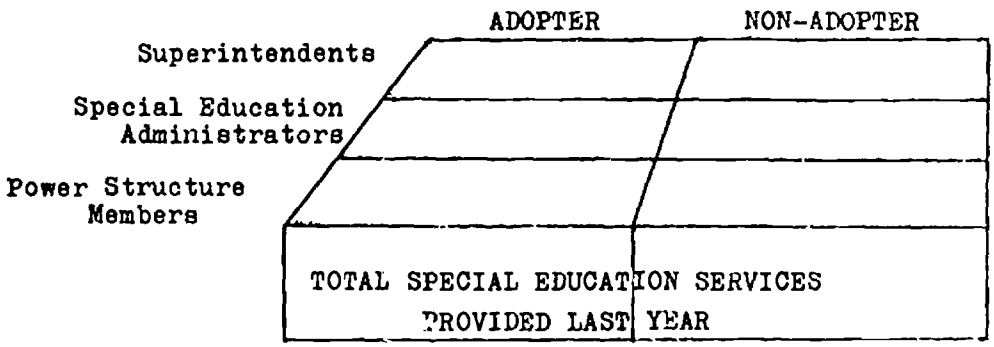


FIGURE 3.6

TWO-WAY ANALYSIS OF SPECIAL EDUCATION SERVICES AVAILABLE LAST YEAR

as in the previous analyses. Figure 3.7 provides a visual representation of this design.

By applying the same AVAR23 subroutine to the dependent variable, number of technical resources available, two levels of A Factor and three levels of B Factor, differences among the groups on the variable can be evaluated. This design is presented in Figure 3.8.

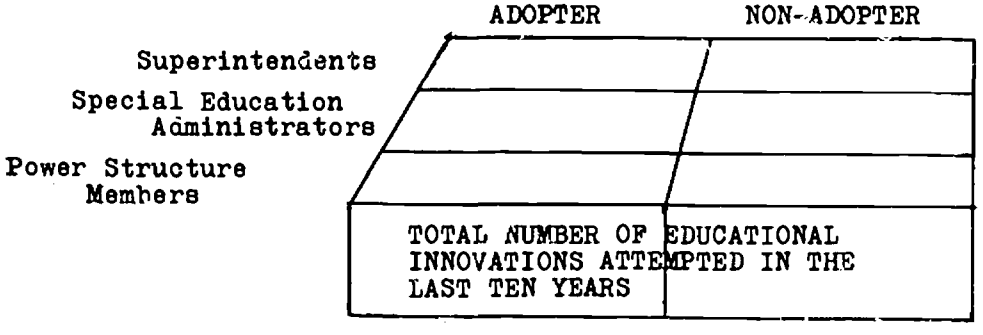


FIGURE 3.7

TWO-WAY ANALYSIS OF
EDUCATIONAL INNOVATIONS ATTEMPTED

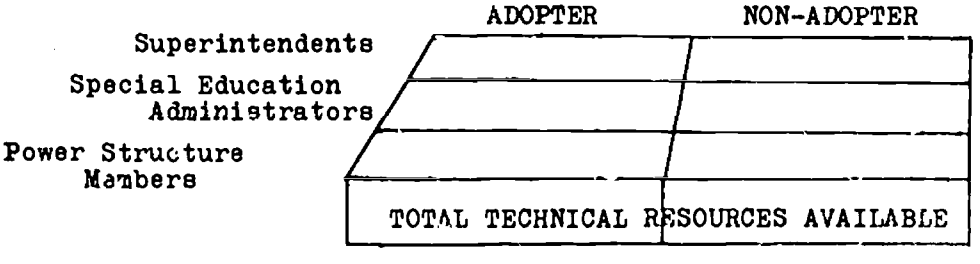


FIGURE 3.8

TWO-WAY ANALYSIS OF TECHNICAL RESOURCES AVAILABLE

Analysis of the data developed from the preceding experimental designs permits all hypotheses and ancillary questions of this study to be answered.

Summary

This chapter has described the various procedures and instruments employed in this study. Also presented was the experimental design and statistical procedures utilized. Twenty school districts participated in the study, ten districts designated as adopters of innovation on the basis of application for Plan A of the new state plan for special education, and a match sample of ten districts not applying. Instruments were developed and administered to three organizational levels of these districts--superintendents, special education administrators, and individuals identified as power individuals in special education decisions of the district. Descriptive and comparative statistics were computed. The results of analysis of this data are presented in Chapter IV.

REFERENCES

Bessent, W., Harris, B. M. & Thomas, M. P., Jr. Adoption and utilization of instructional television. Bureau of Laboratory Schools, The University of Texas at Austin, 1968, No. 20.

Campbell, D. T. & Stanley, J. C. Experimental and quasi-experimental designs for research. Chicago: Rand McNally, 1963.

Cronbach, L. J. Coefficient alpha and the internal structure of tests. Psychometrika, 1951, 16, 297-334.

Dixon, W. J. & Massey, F. J., Jr. Introduction to statistical analysis. New York: McGraw-Hill, 1969.

Edwards, A. L. Experimental design in psychological research. New York: Holt, Rinehart & Winston, 1968.

Hearn, N. E. Innovative education programs: A study of the influence of selected variables upon their continuation following the termination of three-year ESEA III grants. Unpublished doctoral dissertation, George Washington University, 1969.

Jenks, H. C. A study of innovation adoption by teachers from a consortium of schools. Unpublished doctoral dissertation, The University of Texas at Austin, 1968.

Likert, R. A technique for measurement of attitudes. Archives of Psychology, 1932, No. 140.

Murphy, G. & Likert, R. Public opinion and the individual. New York: Harper & Brothers, 1938.

Rogers, E. M. Social change in rural society. New York: Appleton-Century-Crofts, 1960.

Texas Education Agency. Special education unit allocation for school year 1969-70. Austin: Author, 1970.

Texas Education Agency. Statistical Report, 1968-69, Part II. Austin: Author, 1970, Bulletin 698.

Veldman, D. J. Fortran programming for the behavioral sciences. New York: Holt, Rinehart & Winston, 1967.

Veldman, D. J. Edstat-V, Basic statistical computer programs for the CDC 6600. Austin, Texas: Research and Development Center for Teacher Education, The University of Texas at Austin, 1970.

Webb, E. J., Campbell, D. T., Schwarts, R. D. & Sechrest, L. Unobtrusive measure: Nonreactive research in social sciences. Chicago: Rand McNally, 1966.

Winer, B. J. Statistical principles in experimental design. New York: McGraw-Hill, 1962.

CHAPTER IV

RESULTS AND DISCUSSION

Power Structure Survey

Analysis of data began with the tabulation of power structure members during data collection. It was essential to perform this initial analysis of data while on the physical site of the sample school districts, as each level of identification was dependent upon the preceding level. The criteria for identification of power structure members were met in all instances after no more than two levels. Tables 4.2 and 4.3 present the distributions of power structure members on these two levels. A total of 267 persons supplied the responses for level one. A breakdown by district is seen in Table 4.1.

TABLE 4.1
MATCHED DISTRICTS: NUMBER OF RESPONSES, LEVEL 1

Matched Districts	Number of Respondents at Level One		
	Adopter	Non-Adopter	
A	10	10	
B	14	13	
C	5	4	
D	7	8	
E	5	4	
F	5	6	
G	7	6	
H	49	31	
I	13	25	
J	21	24	
Total	136	131	= 267

TABLE 4.2

ADOPTER DISTRICTS—POWER STRUCTURE, LEVELS 1 AND 2

Power Structure Members / District	A		B		C		D		E		F		G		H		I		J		TOTAL	
Level	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2
Superintendent	4	1	11	*1	5	*2	6	*2	4	*2	4	*3	7	*2	44	*2	5	*3	8	*2	98	20
Special Education Administrator	10	*2	12	*1	5	*2	7	*3	4	1			1		48	*2	11	*3	13	*2	111	16
Asst. Supt. for Instruction &/or Curriculum	10	*2									4	*3					5 1	*3	10	1	30	9
Former Superintendent	5	1																			5	1
University Professor	1	1																			1	1
Coordinator of Learning Disabilities			12	*1																	12	1
Curriculum Director			2																		2	
Regional ESC Consultant			2																		2	
Elementary Principal					2 2	1	4 1	*2			4	*3					**5				21	6
High School Principal					1				1		2	1	3	1							7	2
Special Education Teacher					2	1	1										**16		**2		21	1
Jr. High School Principal							1		1		3	1									5	1
Jr. High School Assistant Principal							1														1	
Elementary Teacher									2	1							1				3	1
Business Manager									1	1									1		2	1

* Member, Power Structure, Level 2

** Composite Score for more than one Power Structure Member

TABLE 4.2, Continued

Power Structure Members	District / Level	A		B		C		D		E		F		G		H		I		J		TOTAL	
		1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2
School Board Member										1						1						2	
Railroad Employee										1												1	
Counselor														3	1	2		=4				10	1
Former Special Education Administrator														2								2	
Regional ESC Psychologist														1								1	
Assistant Superintendent (Elementary)																17	1					17	1
Special Services Supervisor																15				2		17	
Assistant Superintendent (Secondary)																14						14	
Coordinator of Nurses																8						8	
Director of Personnel																4				4	1	8	1
Supervisor																4						4	
Regional ESC Special Education Director																2				1		3	
Housewife																1						1	
Assistant Principal																1						1	
Title I Teacher																1						1	
Special Education Supervisor																2						2	
School Personnel (another district)																1						1	

TABLE 4.2, Continued

Power Structure Members	District	A		B		C		D		E		F		G		H		I		J		TOTAL	
	Level	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2
Elementary Counselor																		6		**2		8	
Local Businessman																		1				1	
Special Reading Teacher																		1				1	
Aide																		1				1	
Parent (Scout Assistant)																		1				1	
Scoutmaster (MBI Children)																		1				1	
ACLD President																		1				1	
Coordinator of Speech Therapists																				2		2	
Psychologist																				1		1	
Chairman of Elementary Counselors																				1	1	1	1
Administrative Asst. (Curriculum)																				2	1	2	1
Director, Mgt. Systems and Federal Projects																				1		1	
Primary Consultant																				1		1	
Consultant (Special Instruction)																				1		1	
Speech Therapist																				1		1	
Special Education Counselor																				1		1	
Other								1		1						1				2		5	
TOTAL		30	7	39	3	17	6	22	7	16	6	17	11	20	4	166	5	60	9	57	8	444	65

TABLE 4.3

NON-ADOPTER DISTRICTS--POWER STRUCTURE, LEVELS 1 AND 2

Power Structure Members / District	A		B		C		D		E		F		G		H		I		J		TOTAL	
Level	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2
Superintendent	6	*3	12	*1	3	*2	6	*3	4	*2	5	*4	4	*2	18	*2	20	*3	10	1	88	23
Special Education Administrator	8	*3	6								4	2			23	*3			1		41	8
Asst. Supt. for Instruction &/or Curriculum	8	*3	5										1		4		24	*3	17	*3	59	9
School Board Member	**3						1								**7						11	
Former Board Member	1																				1	
Employee, Center for Exceptional Children	2																				2	
Parent (Officer of local Council for Retarded Children)	1																				1	
Principal			**2						2	1			**3		1		2		**2		12	1
Former Director of Special Education			3																		3	
Bank President			1																		1	
Retired Special Education Teacher			1																		1	
Regional ESC Special Education Director			1																		1	

* Member, Power Structure, Level 2

** Composite Score for more than one Power Structure Member

TABLE 4.3, Continued

Power Structure Members	District	A		B		C		D		E		F		G		H		I		J		TOTAL	
	Level	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2
University Personnel (Special Education)				1																		1	
Member, Local Assn. for Retarded Children				1																		1	
Elementary Principal						2	1					5	*4	2		1		1		1		12	5
Special Education Supervisor						4	*2	6	*3							11	1	4	1			25	7
Secretary Aide (Special Education)						2	1															2	1
Curriculum Director								4	*2			6	*4	2								12	6
Counselor								2				1		4	1	1						8	1
Visiting Teacher								3	1													3	1
Past Superintendent								2	1													2	1
Special Education Teacher										**2		**2		**2		**3		**2				12	
Assistant Elementary Principal												1	1									1	1
Supervisor														1				2				3	
County School Superintendent														1	1							1	1
Employee, County Dept. of Education														1	1							1	1

TABLE 4.3, Continued

Power Structure Members / District / Level	A		B		C		D		E		F		G		H		I		J		TOTAL	
	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2
Superintendent for Instruction															22	*2					22	2
Special Education Counselor															1						1	
Director of Testing, Counseling & Research															3						3	
School Psychologist															3						3	
Speech Therapist															1						1	
Asst. Superintendent (Business Services)																	2				2	
Director of Personnel																	1		7	1	8	1
Coordinator of Elementary Education																	24	*3	8		32	3
Coordinator of Learning Disabilities																			17	*3	17	3
Director of Psychological Services																			6	1	6	1
Teacher, County Day Care Center																			1		1	
Principal, Center for Exceptional Children																			4		4	
Vocational Adjustment Coordinator																			1		1	
Other	*2		**4								1						1		1		9	
TOTAL	31	9	37	1	11	6	24	10	8	3	25	15	21	5	99	8	83	10	76	9	425	76

As may be seen, the distribution as well as total number of choices made by the samples are very similar in both adopter and non-adopter districts. Perhaps, the fact that samples were carefully matched accounts for some of this similarity.

Of interest is the observation that in both adopter and non-adopter districts, not a single individual other than local school district administrators was identified in the decision-making power structure of special education. A wide range of individuals were mentioned on the first level of the survey, but the second level reduced these first choices drastically; no more than three individuals were identified in any school district. Nine districts identified three individuals; six districts, two; and in five, only a singular individual was identified. Combining both adopter and non-adopter districts, 18 superintendents were identified as members of the power structure. This was in accord with the stated hypothesis that superintendents are identified as members of the decision-making power structure of school districts. Seven of the ten adopter districts identified the special education administrator as a member of the power structure, while half (five) of the non-adopter districts made this identification. The assistant superintendent for instruction and/or curriculum was identified in four instances in adopter districts and three times in non-adopter districts. In two instances an elementary principal was identified, and in one district a director of elementary education was identified.

By inspecting Tables 4.2 and 4.3, attention can be drawn to the steep decline in the numbers of individuals named from level one to level two. Perhaps this fact is a result of the nature of the positions occupied by the individuals contacted initially for this data (principals of the school districts)--the very nature of their positions within the districts could have rendered them knowledgeable of the intra-workings of the decision-making process of the districts.

At the second level, there was a high occurrence of subjects identifying themselves as being involved in the decision-making process. This fact gives support to the conclusion that those individuals identified at the second level were indeed members of the power structure.

Overall, the data from the power structure survey indicates an extremely narrow range of individuals exercising power and influence in the decision-making process concerning special education in the sample school districts. The more traditional decision-making models appear to be operating in these districts, i.e., power flows from the top down with few individuals making organizational decisions.

Subject Demographic Data

Utilizing the EDSTATV LIBRARY (Veldman, 1970), descriptive statistics were computed by subroutine DESTAT for the variables: sex, age, educational level, experience, mobility,

access to information, and information sources. These data are presented visually in Tables 4.4 through 4.11.

Some 36 men and 17 women, varying from 25 to 67 years of age with a Mean age of 44.83 years were respondents. Two individuals did not provide their age. Among subjects classified as adopters of innovation, 18 males and 7 females were respondents. These individuals varied from 30 to 63 years of age, with a Mean age of 44.6 years. Non-adopter subjects were composed of 18 males and 10 females, varying from 25 years of age to 67. The Mean age was 45.03 years.

All subjects had at least a Bachelor's degree; 74% (39 subjects) had Master's degrees plus additional academic training; 11% (6 subjects) had earned Doctoral degrees. Among adopter subjects, one individual had earned a Bachelor's degree; two, a Master's degree; 19, Master's degrees plus additional academic hours; and three had earned Doctoral degrees. Most of the non-adopter subjects had an education level of Master's degree plus additional academic course work (20 persons, 71%); one had a Bachelor's degree; four had Master's degrees; and three non-adopter subjects had earned Doctor's degrees.

The total subject samples provided a range of years of experience with their respective school districts. Five subjects had been employed by the school district less than one year, with two persons having 30 or more years with that particular district.

TABLE 4.4

SUBJECT DEMOGRAPHIC VARIABLE--SEX

Sex	Frequency			Percentage		
	Total Subjects	Adopter	Non-Adopter	Total Subjects	Adopter	Non-Adopter
Male	36	18	18	68	72	64
Female	17	7	10	32	28	36
N =	53	25	28			

TABLE 4.5

SUBJECT DEMOGRAPHIC VARIABLE--AGE

Age Interval	Frequency			Percentage		
	Total Subjects	Adopter	Non-Adopter	Total Subjects	Adopter	Non-Adopter
25 to 35	8	4	4	16	16	15
36 to 45	19	9	10	36	40	36
46 to 55	10	4	6	20	16	22
56 to 65	12	7	5	24	28	19
66 to 67	2	0	2	4	0	8
Failed to Respond	2	1	1	4	4	4

Total	Adopter	Non-Adopter
N = 53 Mean = 44.83	N = 25 Mean = 44.60	N = 28 Mean = 45.03

TABLE 4.6

SUBJECT DEMOGRAPHIC VARIABLE--EDUCATIONAL LEVEL

Educational Level	Frequency			Percentage		
	Total	Adopter	Non-Adopter	Total	Adopter	Non-Adopter
Less than Bachelor's Degree	0	0	0	0	0	0
Bachelor's Degree	2	1	1	4	4	4
Master's Degree	6	2	4	11	8	14
Master's Degree Plus	39	19	20	74	76	71
Doctoral Degree	6	3	3	11	12	11
N =	53	25	28			

TABLE 4.7

SUBJECT DEMOGRAPHIC VARIABLE--YEARS EMPLOYED IN DISTRICT

Years in District	Frequency			Percentage		
	Total	Adopter	Non-Adopter	Total	Adopter	Non-Adopter
Less than 1	5	2	3	9	8	11
1 to 5	21	12	9	40	48	32
6 to 10	7	4	3	14	16	11
11 to 15	7	3	4	14	12	15
16 to 20	4	2	2	8	8	8
21 to 25	6	2	4	12	8	14
26 to 30	2	0	2	4	0	8
More than 31	1	0	1	2	0	4

Total	Adopter	Non-Adopter
N = 53 Mean = 9.58	N = 25 Mean = 8.12	N = 28 Mean = 10.89

TABLE 4.8

SUBJECT DEMOGRAPHIC VARIABLE--MOBILITY

Mobility	Frequency			Percentage		
	Total	Adopter	Non-Adopter	Total	Adopter	Non-Adopter
No Move Anticipated	36	17	19	68	68	68
Move Anticipated	12	5	7	23	20	25
Failed to Respond	5	3	2	9	12	7
N =	53	25	28			

TABLE 4.9

SUBJECT DEMOGRAPHIC VARIABLE--TEXAS EDUCATION AGENCY DISSEMINATION WORKSHOP ATTENDANCE

Dissemination Workshop Attendance	Frequency			Percentage		
	Total	Adopter	Non-Adopter	Total	Adopter	Non-Adopter
Yes	38	18	20	72	72	71
No	13	6	7	25	24	25
Don't Know	1	1	0	2	4	0
Failed to Respond	1	0	1	2	0	4
N =	53	25	28			

TABLE 4.10

SUBJECT DEMOGRAPHIC VARIABLE--DISTRICT ACCESS TO SPECIAL EDUCATION STATE PLAN INFORMATION

TEA Dissemination Workshop Attendance By District Personnel	Frequency			Percentage		
	Total	Adopter	Non-Adopter	Total	Adopter	Non-Adopter
Yes	49	25	24	92	100	86
No	1	0	1	2	0	4
Don't Know	2	0	2	4	0	7
Failed to Respond	1	0	1	2	0	4
N =	53	25	28			

TABLE 4.11

SUBJECT DEMOGRAPHIC VARIABLE--INFORMATION SOURCES

Information Source	Frequency			Percentages		
	Total	Adopter	Non-Adopter	Total	Adopter	Non-Adopter
Knowledgeable People	41	20	21	77	80	75
Authoritative Sources	9	4	5	17	16	18
Failed to Respond	3	1	2	6	4	7
N =	53	25	28			

Thirty-six of the subjects were apparently planning to remain with the district; 12 respondents stated that they anticipated leaving. Five subjects failed to respond to this particular item.

Experience within their school districts for adopters varied from less than a year (2 subjects) to 25 years with the same district (2 subjects). A Mean of 8.12 years of service describes the adopter sample. Seventeen of the 25 subjects had no immediate plans to leave their districts, while five anticipated a move and three failed to respond to this particular item. Two non-adopter subjects had been associated with their school districts less than one year, and the other subjects had experience varying from one to 31 years. Of the 28 non-adopter subjects, 68% had no immediate plans to leave their school districts; however, 25% indicated that they were anticipating leaving.

The new state plan dissemination workshops conducted by the Texas Education Agency were attended by 72% (38 persons) of the total sample subjects. Thirteen per cent did not attend; one person failed to respond to this item; and one person did not know if he had attended the workshop. Forty-nine (92%) of the subjects stated that someone from their school district attended the workshops.

Eighteen (72%) of the adopter subjects personally attended the Texas Education Agency workshops. The adopters

indicated that in all instances (100%), someone from their school district had attended the dissemination sessions. Twenty of the non-adopter subjects attended dissemination workshops. Eighty-six per cent of the non-adopter districts had someone from their district in attendance.

Information sources for the total sample populations were quite consistent. The tendency to rely on individuals perceived to be knowledgeable was quite strong (77%, 41 subjects) with much less importance placed on sources such as professional journals, ERIC documents and other authoritative written sources.

Information sources for adopter subjects were "knowledgeable people" with only four of the 25 subjects indicating that they relied upon sources such as professional journals, etc. Non-adopters, just as adopters, indicated their reliance upon "knowledgeable" individuals rather than other authoritative sources (75%).

District Demographic Data

Demographic data for the sample districts was accumulated and tabulated in the same manner as for subjects. This data, as was all other demographic data, was processed by subroutine DISTAT of the EDSTATV LIBRARY (Veldman, 1970).

The Texas Education Agency in its Annual Statistical Report (1970), classifies school districts of the state into

12 groups based on Average Daily Attendance (ADA). Table 4.12 presents these groups and the distribution of sample districts within them. It may be seen in Table 4.12 that the skewness and kurtosis of this distribution of districts is not significantly different from the normal curve.

TABLE 4.12

DISTRICT DEMOGRAPHIC DATA
TEXAS EDUCATION AGENCY ADA GROUPS

TEA Size Category		Frequency			Percentage		
		Total	Adopter	Non-Adopter	Total	Adopter	Non-Adopter
1.	50,000 - Over ADA	0	0	0	0	0	0
2.	10,000 - 49,999 ADA	9	4	5	17	16	18
3.	5,000 - 9,999 ADA	12	6	6	23	24	21
4.	1,500 - 4,999 ADA	16	6	10	30	24	36
5.	1,000 - 1,499 ADA	7	5	2	13	20	7
6.	500 - 999 ADA	4	2	2	8	8	7
7.	300 - 499 ADA	5	2	3	9	8	11
8-12.	24 or Less - 299 ADA	0	0	0	0	0	0
	N =	53	25	28			

Total	Adopter	Non-Adopter
Mean = 4.00	Mean = 4.04	Mean = 3.96
Skewness = 1.5587 (p* = .1149)	Skewness = .8115 (p = .5774)	Skewness = 1.3670 (p = .1680)
Kurtosis = -.7589 (p = .5456)	Kurtosis = -.6639 (p = .5140)	Kurtosis = -.4098 (p = .6852)

*exact probability level

Districts were classified as either rural or urban on the basis of their geographic proximity to metropolitan areas. Table 4.13 presents this data. It may be noted that for the Total sample, as well as the Non-adopter sample, the distribution is significantly flat, as evidenced in the kurtosis calculation.

TABLE 4.13

DISTRICT DEMOGRAPHIC DATA
RURAL-URBAN CLASSIFICATION

Classification	Frequency			Percentage		
	Total	Adopter	Non-Adopter	Total	Adopter	Non-Adopter
Rural	20	9	11	38	36	39
Urban	33	16	17	62	64	61
N =	53	25	28			

Total	Adopter	Non-Adopter
Skewness = 1.5040 (p = .1285)	Skewness = -1.1907 (p = .2317)	Skewness = -.9478 (p = .6548)
Kurtosis = -2.5916 (p = .0094)*	Kurtosis = -1.6930 (p = .0863)	Kurtosis = -1.9523 (p = .0479)*

*.05 Significance Level

Table 4.14 presents the distribution of per capita expenditures in the sample districts. It may be noted that this range is from $393.86 to $693.46 for all districts,

TABLE 4.14

DISTRICT DEMOGRAPHIC DATA--PER CAPITA EXPENDITURES

Expenditures in Dollars	Frequency			Percentage		
	Total	Adopter	Non-Adopter	Total	Adopter	Non-Adopter
$393.86 - 396.48	3	0	3	6	0	11
399.45 - 402.42	5	3	2	9	12	7
411.33 - 414.30	2	2	0	4	8	0
429.15 - 432.12	3	3	0	6	12	0
435.09 - 438.06	4	0	4	8	0	14
464.79 - 467.76	3	3	0	6	12	0
470.73 - 473.70	3	0	3	6	0	11
485.58 - 488.55	8	4	4	15	16	14
497.46 - 500.43	2	0	2	4	0	7
524.19 - 527.16	3	3	0	6	12	0
556.86 - 559.83	2	0	2	4	0	7
571.71 - 574.68	2	0	2	4	0	7
577.65 - 580.62	2	2	0	4	8	0
601.41 - 604.38	3	3	0	6	12	0
619.23 - 622.20	6	0	6	11	0	22
690.51 - 693.46	2	2	0	4	8	0
N =	53	25	28			

with a Mean of $503.23. For adopters the range is from $398.54 to $693.46. The Mean is equal to $503.36. Non-adopter districts are very similar in terms of per capita expenditures (range of $393.86 to $623.13 and Mean equal to $503.11).

Personnel and services available within and without the district samples were quite similar. The most popular personnel available in the sample school districts were: high school counselor (92%), school nurse (91%), remedial reading specialist (74%), and special education supervisor (70%). The least available to the districts were: school physician (19%), school psychologist (26%), and visiting teacher (38%). As can be observed in Table 4.15, adopter and non-adopter districts show very similar types of personnel and services available. The distribution of these personnel, as seen in Table 4.16, indicates a range of four districts having only two of the 12 services surveyed, to one district reporting all 12 available. Most of the districts reported between four and nine separate services. Few differences in adopter and non-adopter districts can be observed.

Fifty-three per cent of the districts reported that they have all five services from outside the district available (Table 4.17). The service least available still occurred in a majority of districts (parent counseling, 66%). Welfare services and psychological consultation were most frequently available (83%). This data is presented in Table 4.18.

TABLE 4.15

DISTRICT DEMOGRAPHIC DATA--PERSONNEL AND/OR SERVICES REPORTED AS AVAILABLE

Types of Personnel and/or Service	Frequency			Percentage		
	Total	Adopter	Non-Adopter	Total	Adopter	Non-Adopter
Elementary Supervisor	24	14	10	45	56	36
Secondary Supervisor	23	13	10	43	52	36
High School Counselor	49	23	26	92	92	93
Elementary Counselor	29	14	15	55	56	54
Curriculum Specialist	30	11	19	57	44	68
School Psychologist	14	7	7	26	28	25
School Physician	10	4	6	19	16	21
School Nurse	48	20	28	91	80	100
Visiting Teacher	20	8	12	38	32	43
Remedial Reading Specialist	39	21	18	74	84	64
Special Education Administrator	30	15	15	57	60	54
Special Education Supervisor	37	17	20	70	68	71
N =	53	25	28			

TABLE 4.16

DISTRICT DEMOGRAPHIC DATA---DISTRIBUTION OF PERSONNEL AND/OR SERVICES WITHIN SAMPLE DISTRICTS

Number of Personnel and/or Services	Frequency			Percentage		
	Total	Adopter	Non-Adopter	Total	Adopter	Non-Adopter
2	4	2	2	8	8	7
3	2	1	1	4	4	4
4	5	3	2	9	12	7
5	6	2	4	11	8	14
6	7	3	4	13	12	14
7	8	3	5	15	12	18
8	7	4	3	13	16	11
9	8	5	3	15	20	11
10	4	1	3	8	4	11
11	1	0	1	2	0	4
12	1	1	0	2	4	0
N =	53	25	28			

TABLE 4.17

DISTRICT DEMOGRAPHIC DATA--DISTRIBUTION OF SERVICES AVAILABLE FROM OUTSIDE THE DISTRICT

Number of Outside Services	Frequency			Percentage		
	Total	Adopter	Non-Adopter	Total	Adopter	Non-Adopter
0	2	1	1	4	4	4
1	2	0	2	4	0	7
2	6	2	4	11	8	14
3	7	3	4	13	12	14
4	8	5	3	15	20	11
5	28	14	14	53	56	50
N =	53	25	28			

TABLE 4.18

DISTRICT DEMOGRAPHIC DATA--SERVICES REPORTED AVAILABLE FROM OUTSIDE THE DISTRICT

Types of Services	Frequency			Percentage		
	Total	Adopter	Non-Adopter	Total	Adopter	Non-Adopter
Parent Counseling	35	19	16	66	76	57
Medical Consultation	42	22	20	79	88	71
Psychological Consultation	44	21	23	83	84	82
Medical Services	42	21	21	79	84	75
Welfare Services	44	20	24	83	80	86
N =	53	25	28			

A description of innovations attempted by the sample districts is presented in Table 4.19. According to the respondents, Modern Math (85%), Team Teaching (74%), and use of Paraprofessionals (72%) were the innovations attempted most frequently. Adopter and non-adopter districts were very similar in their adoption of the innovations Modern Math (84% and 86%) and Team Teaching (76% and 71%). However, 88% of the adopter districts were reported to have tried paraprofessionals, while only 57% of non-adopters had made this attempt. A total of four other innovations were frequently attempted by adopter districts and less frequently attempted by non-adopters (18% or more difference). These four were: language laboratory (72% to 54%), student aides (72% to 50%), work-study programs (72% to 46%), and open school architecture (52% to 29%). In only one incidence did non-adopter districts attempt an innovation more frequently than adopter districts with a sizable difference (more than 5%). Sixty-eight per cent of non-adopters attempted programmed learning, while only 44% of adopters tried this innovation. In general, of the 26 educational innovations surveyed, only eight were attempted more frequently than 50%. This would seem to indicate that perhaps neither sample was inclined to attempt a wide variety of educational innovations. This is further supported by data found in Table 4.20, in which it is seen that adopters indicated a slightly higher Mean than non-adopters

TABLE 4.19

DISTRICT DEMOGRAPHIC DATA--INNOVATIONS REPORTED ATTEMPTED IN SAMPLE DISTRICTS

Type of Innovation	Frequency			Percentage		
	Total	Adopter	Non-Adopter	Total	Adopter	Non-Adopter
Modern Math	45	21	24	85	84	86
Bilingual Programs	10	3	7	19	12	25
Non-Gradedness	19	10	9	36	40	32
Flexible Scheduling	21	11	10	40	44	36
IPI	3	1	2	6	4	7
AAAS Science	14	9	5	26	36	18
Typing in Elementary	6	5	1	11	20	4
Language Laboratory	33	18	15	62	72	54
Student Aides	32	18	14	60	72	50
CAI	8	5	3	15	20	11
Paraprofessionals	38	22	16	72	88	57
Programmed Learning	30	11	19	57	44	68
Extended School Year	6	3	3	11	12	11
Team Teaching	39	19	20	74	76	71
Work-Study Programs	31	18	13	58	72	46
Teacher Corps	5	0	5	9	0	18
Student Exchange	16	9	7	30	36	25
Independent Study	19	11	8	36	44	29
Extended Field Trips	13	6	7	25	24	25
Community School	4	2	2	8	8	7
Open School Architecture	21	13	8	40	52	29
Teacher Exchange	4	2	2	8	8	7
Micro Teaching	6	4	2	11	16	7
Teacher Released or Shared Time	10	7	3	19	28	11
Multi-School District Cooperation	14	8	6	26	32	21
Pre-School Programs	31	14	17	58	56	61

(10.04 to 8.35, respectively), with the total sample Mean equal to 9.15. Thus, the Means are less than one-half the possible number of adoptions surveyed (26 innovations). However, of the 26 innovations surveyed, 17 were attempted more frequently by adopter school districts than non-adopter. Such data is reported by subjects and not validated externally. If valid, these results do indicate the tendency for adopters to innovate more frequently.

TABLE 4.20

DISTRICT DEMOGRAPHIC DATA--DISTRIBUTION OF TOTAL INNOVATIONS REPORTED ATTEMPTED IN SAMPLE DISTRICTS

Number of Innovations Attempted	Frequency			Percentage		
	Total	Adopter	Non-Adopter	Total	Adopter	Non-Adopter
0	2	1	1	4	4	4
1	1	0	1	2	0	4
2	2	1	1	4	4	4
3	1	0	1	2	0	4
4	2	2	0	4	8	0
5	1	1	0	2	4	0
6	6	1	5	11	4	18
7	4	1	3	8	4	11
8	4	2	2	8	8	7
9	6	2	4	11	8	14
10	5	3	2	9	12	7
11	1	1	0	2	4	0
12	5	1	4	9	4	14
13	7	5	2	13	20	7
14	1	0	1	2	0	4
17	3	2	1	6	8	4
18	1	1	0	2	4	0
19	1	1	0	2	4	0
N =	53	25	28			

Total Number Innovations Surveyed = 26

Total	Adopter	Non-Adopter
Mean = 9.15	Mean = 10.04	Mean = 8.35

A total of 22 new provisions for special education services were provided under the new special education Plan A. By surveying the respondents as to which of these provisions already were being provided in their school districts, an indication of the compatibility of the new plan with existing special education services was provided. Table 4.21 describes how many of these services were in existence in the sample districts. Only five of these provisions were indicated as being provided by greater than 50% of the adopters and non-adopters: special funds for instructional materials, 83%; special transportation for all handicapped needing it, 55%; provision for handicapped students to participate in regular classes, 85%; medical consultants, 87%; and psychological consultants, 79%. On all five of these most frequently mentioned items, differences between adopter and non-adopter groups were very slight. Table 4.22 gives a rather clear picture of how very few of the new provisions of Plan A were in existence in the sample school districts prior to this current year. Of the possible total of 22 provisions, Means were: total sample = 8.09; adopter sample = 8.88; and non-adopter sample = 7.39. If the new provisions of the state plan can be considered important for successful education of handicapped students, it becomes clear on the basis of this data, how few of these services were being provided by sample districts prior to legislative action.

TABLE 4.21

DISTRICT DEMOGRAPHIC DATA--PLAN A SPECIAL EDUCATION PROVISIONS OFFERED BY SAMPLE DISTRICTS LAST YEAR

Special Education Services	Frequency			Percentage		
	Total	Adopter	Non-Adopter	Total	Adopter	Non-Adopter
Special Funds for Instructional Materials	44	22	22	83	88	79
Programs for Pregnant Students	2	1	1	4	4	4
Programs for Emotionally Disturbed Students	12	11	1	23	44	4
Programs for Language Learning Disorder Students	20	11	9	38	44	32
Programs for Pre-School Age Handicapped Students	10	4	6	19	16	21
Program for Multi-Handicapped Students	10	3	7	19	12	29
Special Transportation for All Handicapped Students	29	13	16	55	52	57
Contract Services for Handicapped Students with Other Public Schools	18	10	8	34	40	29
Contract Services for Handicapped Students with Non-Public Schools	9	6	3	17	24	11
Provide Resource Rooms	14	9	5	26	36	18
Allow Handicapped Students' Attendance in Regular Classrooms	45	23	22	85	92	79
Provide Para-professionals for Handicapped Student Programs	19	11	8	36	44	29
Provide Diagnostic Classroom	1	1	0	2	4	0
Provide Special Education Instructional Supervisors	19	9	10	36	36	36
Provide Special Education Visiting Teacher	7	2	5	13	8	18
Provide Special Education Counselors	15	7	8	28	28	29
Provide Educational Diagnostician	11	5	6	21	20	21
Provide School Psychologist	13	6	7	25	24	25
Provide Physical Therapist	15	11	4	28	44	14
Provide Occupational Therapist	12	9	3	23	36	11
Provide Medical Consultant	46	20	26	87	80	93
Provide Psychological Consultant	42	19	23	79	76	82

TABLE 4.22

DISTRICT DEMOGRAPHIC DATA--DISTRIBUTION OF TOTAL PLAN A SPECIAL EDUCATION PROVISIONS OFFERED BY SAMPLE DISTRICTS LAST YEAR

Number of Services Provided	Frequency			Percentage		
	Total	Adopter	Non-Adopter	Total	Adopter	Non-Adopter
0	1	0	1	2	0	4
2	1	0	1	2	0	4
3	4	1	3	8	4	11
4	5	2	3	9	8	11
5	4	2	2	8	8	7
6	6	2	4	11	8	14
7	5	3	2	9	12	7
8	4	2	2	8	8	7
9	4	3	1	8	12	4
10	5	3	2	9	12	7
11	3	2	1	6	8	4
12	3	1	2	6	4	7
13	1	0	1	2	0	4
14	4	2	2	8	8	7
15	2	1	1	4	4	4
16	0	0	0	0	0	0
17	0	0	0	0	0	0
18	1	1	0	2	4	0
N =	53	25	28			

Total Provisions Surveyed = 22

Total	Adopter	Non-Adopter
Mean = 8.09	Mean = 8.88	Mean = 7.39

Results of Hypotheses Testing

Hypothesis 1

Hypothesis 1 suggests that there are differences in the way superintendents, special education administrators and members of decision-making power structures, classified as adopters or non-adopters of innovation, characterize the new Texas state plan for special education, "Comprehensive Special Education for Exceptional Children (Plan A)." Several analyses of variance were computed in order to assess the existence of such hypothesized differences in the sample populations. Tables 4.23 - 4.27 present the source tables for these analyses of variance.

TABLE 4.23. AN ANALYSIS OF VARIANCE OF ADOPTERS, NON-ADOPTERS, SUPERINTENDENTS, SPECIAL EDUCATION ADMINISTRATORS, POWER STRUCTURE MEMBERS, ON THE FACTOR RELATIVE ADVANTAGE.

Source	M.S.	D.F.	F-Ratio	Probability
Between-Subjects Variance				
A	.673	1	.147	.7048
B	4.039	2	.883	.5766
AB	5.114	2	1.118	.3362
E(B)	4.576	47		
Within-Subject Variance				
T	10.055	3	7.052**	.0004
AT	.497	3	.348	.7932
BT	.770	6	.540	.7790
ABT	1.699	6	1.191	.3138
E(W)	1.426	141		

** < .001 Significance Level

No significant differences were found between adopters and non-adopters (Factor A), or between superintendents, special education administrators, and power structure members (Factor B) on the characteristic of innovation, Relative Advantage. Significance (.001) was noted on the Total for within-subject variance (repeated measures, the four components of Plan A). The largest difference between these Means occurred between component 2 (more liberal funding for special education under the minimum foundation program) and component 3 (increased numbers of supportive personnel and services for special education). This difference suggests that subjects felt that the relative advantage of increased special supportive personnel and services for special education was significantly more advantageous than the component of increased contact for the handicapped student with the normal stream of education.

TABLE 4.24. AN ANALYSIS OF VARIANCE OF ADOPTERS, NON-ADOPTERS, SUPERINTENDENTS, SPECIAL EDUCATION ADMINISTRATORS, POWER STRUCTURE MEMBERS, ON THE FACTOR COMPATIBILITY.

Source	M.S.	D.F.	F-Ratio	Probability
Between-Subjects Variance				
A	2.021	1	.198	.6625
B	2.956	2	.290	.7538
AB	14.414	2	1.413	.2526
E(B)	10.203	47		
Within-Subjects Variance				
T	14.416	3	6.879**	.0004
AT	3.860	3	1.839	.1413
BT	.323	6	.154	.9865
ABT	1.637	6	.780	.5886
E(W)	2.098	141		

** < .001 Significance Level

No significant differences were present between adopters, non-adopters (Factor A) or superintendents, special education administrators, power structure members (Factor B) on the dependent variable, Compatibility. A significance was noted on the Total for within-subject variance (.001 level of significance). Similar to the difference noted for the characteristic Relative Advantage, the largest difference between Means for Compatibility occurs between components 2 and 3 of Plan A. This data suggests that respondents felt that the increase in special supportive personnel and services for special education were more compatible with current philosophy and practice than the more liberal funding of special education under the new state plan.

TABLE 4.25. AN ANALYSIS OF VARIANCE OF ADOPTERS, NON-ADOPTERS, SUPERINTENDENTS, SPECIAL EDUCATION ADMINISTRATORS, POWER STRUCTURE MEMBERS ON THE FACTOR COMPLEXITY.

Source	M.S.	D.F.	F-Ratio	Probability
Between-Subjects Variance				
A	1.537	1	.159	.6944
B	3.283	2	.339	.7189
AB	2.943	2	.304	.7435
E(B)	9.678	47		
Within-Subjects Variance				
T	15.535	3	9.620**	.0001
AT	.614	3	.380	.7707
BT	.640	6	.397	.8806
APT	1.881	6	1.165	.3282
E(W)	1.615	141		

** < .001 Significance Level

The two levels of Between-Subjects (adopters, non-adopters, and superintendents, special education administrators, power structure members) displayed no significant differences. Significance at the .001 level was noted on the Total within-subject variance. The greatest difference was between the Means of component 1 (greater contact for the handicapped student with the normal stream of education) and component 3 (increased numbers of supportive personnel and services for special education). The difference noted may be an indication that subjects felt that the component, increased special supportive personnel and services was less complex, i.e., easier to understand and use than the concept of increased contact for the handicapped student with the normal stream of education.

No significant differences were noted on any of the comparisons provided by the analysis of variance on the factor Divisibility.

TABLE 4.26. AN ANALYSIS OF VARIANCE OF ADOPTERS, NON-ADOPTERS, SUPERINTENDENTS, SPECIAL EDUCATION ADMINISTRATORS, POWER STRUCTURE MEMBERS, ON THE FACTOR DIVISIBILITY.

Source	M.S.	D.F.	F-Ratio	Probability
Between-Subjects Variance				
A	.067	1	.010	.9158
B	6.109	2	.948	.6029
AB	3.220	2	.500	.6155
E(B)	6.445	47		
Within-Subjects Variance				
T	4.197	3	1.977	.1187
AT	2.052	3	.967	.5881
BT	1.584	6	.746	.6154
ABT	2.729	6	1.285	.2670
E(W)	2.123	141		

TABLE 4.27. AN ANALYSIS OF VARIANCE OF ADOPTERS, NON-ADOPTERS, SUPERINTENDENTS, SPECIAL EDUCATION ADMINISTRATORS, POWER STRUCTURE MEMBERS, ON THE FACTOR COMMUNICABILITY.

Source	M.S.	D.F.	F-Ratio	Probability
Between-Subjects Variance				
A	2.309	1	.286	.6018
B	7.903	2	.978	.6147
AB	3.154	2	.390	.6843
E(B)	8.077	47		
Within-Subjects Variance				
T	7.090	3	5.428**	.0018
AT	.258	3	.197	.8980
BT	1.065	6	.815	.5613
ABT	3.639	6	2.786*	.0136
E(W)	1.306	141		

* < .05 Significance Level
** < .001 Significance Level

No significant differences were noted on the basis of the comparisons of the two levels of between (adopters, non-adopters, and superintendents, special education administrators, power structure members). Significance at the .001 level was noted on the Total within-subject variance. The greatest difference in the Means of this Total was between components 1 and 3. The .05 level of significance was obtained for the interaction of the two levels of between and the one within (repeated measures based on the four components of Plan A). Examination of the Means indicates that subjects felt that the component dealing with increased supportive personnel and services for special education was significantly

easier to communicate or diffuse than the component, greater contact for the handicapped child with the normal stream of education. The significant interactions are graphed in Figures 4.1 and 4.2. Visual inspection provides an indication of the difficulty in drawing conclusions concerning this interaction.

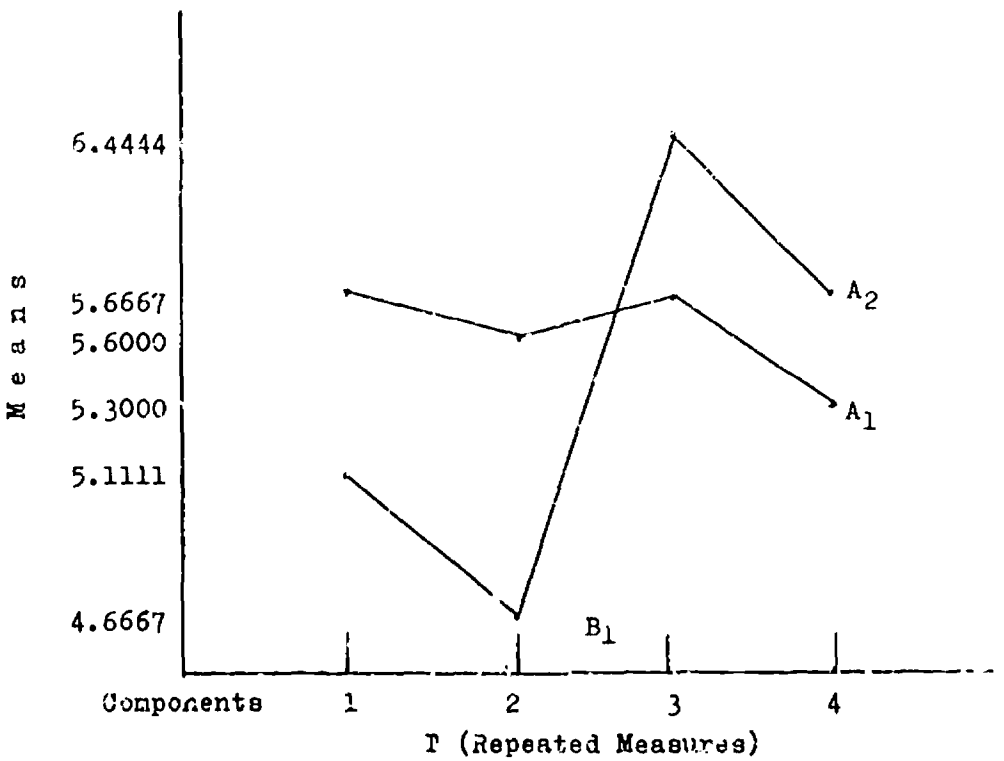


FIGURE 4.1
MEANS FOR LEVELS OF A AT EACH LEVEL OF T FOR B_1

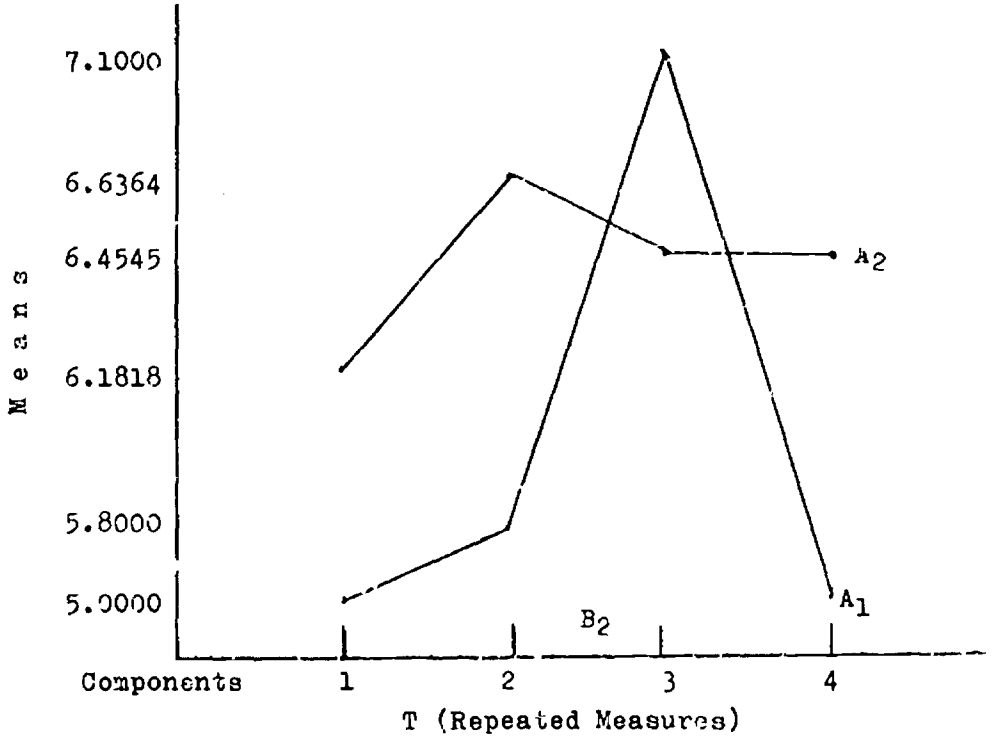


FIGURE 4.2
MEANS FOR LEVELS OF A AT EACH LEVEL OF T FOR B_2

In order to assess the possibility that the characteristics of innovation viewed as one variable might have been perceived differently by the subjects, an analysis of variance was computed in which the five characteristics were dependent variables. As may be noted from Table 4.28, there were no significant differences in any of the comparisons made.

TABLE 4.28. AN ANALYSIS OF VARIANCE OF ADOPTERS, NON-ADOPTERS, SUPERINTENDENTS, SPECIAL EDUCATION ADMINISTRATORS, POWER STRUCTURE MEMBERS ON THE FACTORS FIVE CHARACTERISTICS OF INNOVATION.

Factor--Relative Advantage

Source	M.S.	D.F.	F-Ratio	Probability
Total	17.892	52		
Between	9.992	5		
A	3.968	1	.2118	.6521
B	10.026	2	.5352	.5944
AB	12.971	2	.6924	.5098
Within	18.733	47		

Factor--Compatibility

Source	M.S.	D.F.	F-Ratio	Probability
Total	39.714	52		
Between	29.408	5		
A	8.084	1	.1981	.6625
B	11.823	2	.2897	.7538
AB	57.656	2	1.4128	.2526
Within	40.811	47		

Factor--Complexity

Source	M.S.	D.F.	F-Ratio	Probability
Total	36.386	52		
Between	25.755	5		
A	14.210	1	.3788	.5482
B	49.480	2	1.3189	.2765
AB	7.804	2	.2080	.8149
Within	37.517	47		

Factor--Divisibility

Source	M.S.	D.F.	F-Ratio	Probability
Total	25.345	52		
Between	21.252	5		
A	4.665	1	.1810	.6759
B	28.848	2	1.1190	.3357
AB	21.948	2	.8514	.5634
Within	25.780	47		

Factor--Communicability

Source	M.S.	D.F.	F-Ratio	Probability
Total	31.223	52		
Between	25.369	5		
A	14.899	1	.4678	.5043
B	52.334	2	1.6434	.2027
AB	3.639	2	.1143	.8919
Within	31.846	47		

Hypothesis 2

Hypothesis 2 proposes that sample subjects classified as adopters and non-adopters will perceive the four major components of the new state plan (increased contact for handicapped students with the normal stream of education; more liberal funding for special education; increased numbers and types of supportive personnel; broadened definitions of special education and handicapped student) differently. In order to evaluate these proposed differences, the analyses of variance computed and presented in Table 4.29 were utilized.

There are no significant differences for the between subjects analysis on component 1. However, a significance at the .001 level can be noted on the Total of Means for within subjects. The largest difference in Means occurs between the repeated measures Relative Advantage and Compatibility. This could indicate that the subjects felt this component to be more advantageous than compatible with present philosophy and practice. For component 2, it may be noted that a

TABLE 4.29. AN ANALYSIS OF VARIANCE OF ADOPTERS, NON-ADOPTERS, SUPERINTENDENTS, SPECIAL EDUCATION ADMINISTRATORS, POWER STRUCTURE MEMBERS, ON THE FACTORS FOUR COMPONENTS OF PLAN A.

Factor--Increased contact for handicapped students with the normal stream of education.

Source	M.S.	D.F.	F-Ratio	Probability
Between-Subjects Variance				
A	1.371	1	.173	.6821
B	4.733	2	.599	.5586
AB	2.563	2	.324	.7293
E(B)	7.905	47		
Within-Subjects Variance				
T	12.656	4	6.031**	.0003
AT	1.304	4	.621	.6510
BT	1.630	8	.777	.6252
ABT	3.551	8	1.692	.1022
E(W)	2.098	188		

** < .001 Significance Level

Factor--More liberal funding for special education under the minimum foundation program

Source	M.S.	D.F.	F-Ratio	Probability
Between-Subjects Variance				
A	.282	1	.031	.8546
B	3.998	2	.444	.6499
AB	1.721	2	.191	.8281
E(B)	9.008	47		
Within-Subjects Variance				
T	3.871	4	1.510	.1997
AT	2.328	4	.908	.5380
BT	1.563	8	.610	.7704
ABT	5.162	8	2.014*	.0464
E(W)	2.564	188		

* < .05 Significance Level

Factor--Increased numbers of supportive personnel and services for special education.

Source	M.S.	D.F.	F-Ratio	Probability
Between-Subjects Variance				
A	1.369	1	.197	.6635
B	4.593	2	.660	.5259
AB	2.387	2	.343	.7161
E(B)	6.954	47		
Within-Subjects Variance				
T	48.111	4	20.190**	.0000
AT	1.136	4	.477	.7557
BT	2.513	8	1.055	.3971
ABT	1.873	8	.786	.6171
E(W)	2.383	188		

** < .001 Significance Level

Factor--Broadened definitions of handicapped student and special education.

Source	M.S.	D.F.	F-Ratio	Probability
Between-Subjects Variance				
A	1.504	1	.205	.6574
B	3.668	2	.499	.6156
AB	2.449	2	.332	.7237
E(B)	7.345	47		
Within-Subjects Variance				
T	17.675	4	9.965**	.0000
AT	.413	4	.233	.9184
BT	.672	8	.379	.9307
ABT	2.505	8	1.412	.1930
E(W)	1.774	188		

** < .001 Significance Level

significant interaction (.05 level) was found for the two between levels and the five repeated measures. Differences between these Means were scattered and inconsistent, therefore difficult to interpret or to draw conclusion from. Figures 4.3 and 4.4 present this interaction.

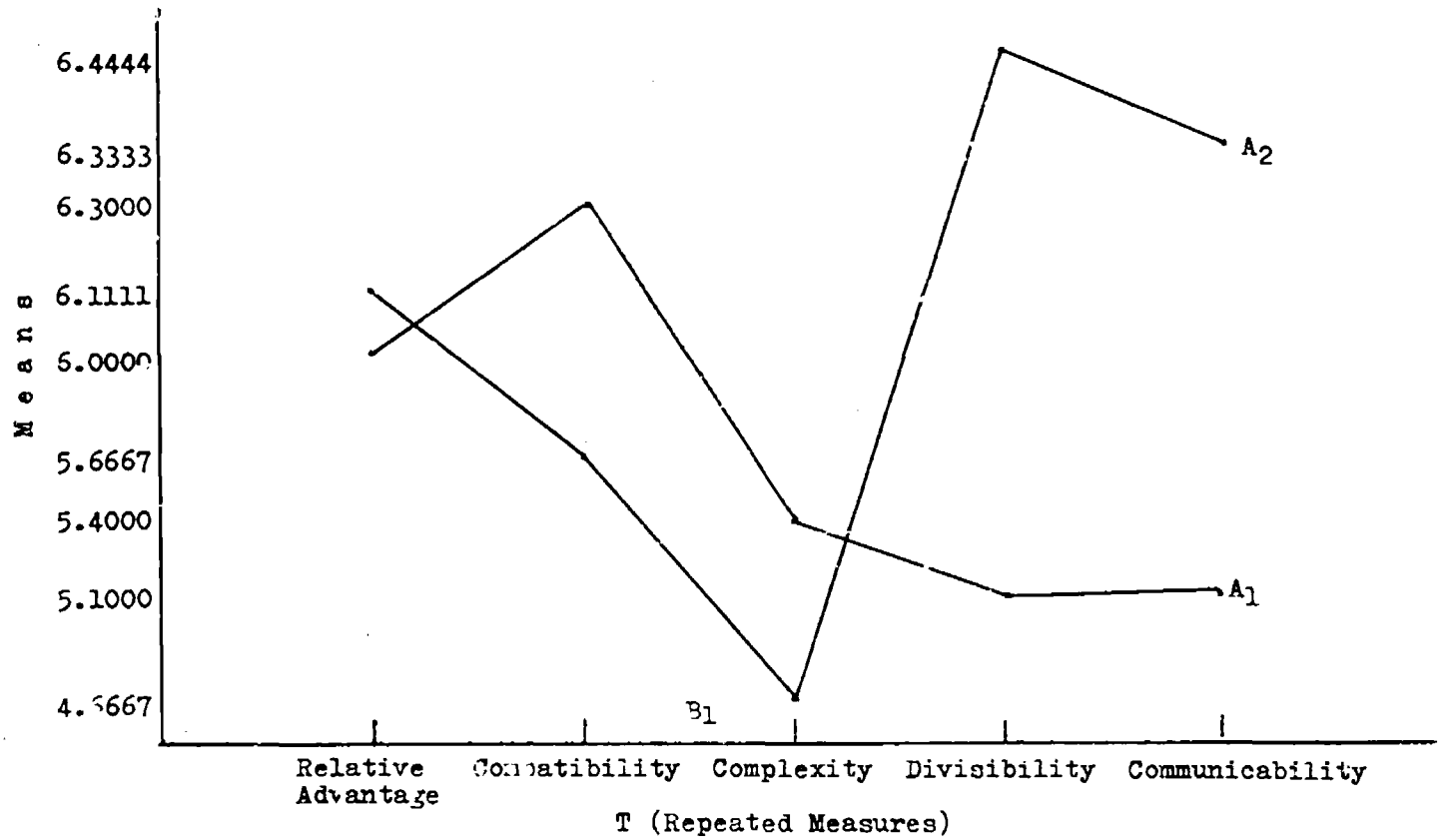


FIGURE 4.3
MEANS FOR LEVELS OF A AT EACH LEVEL OF T FOR B_1

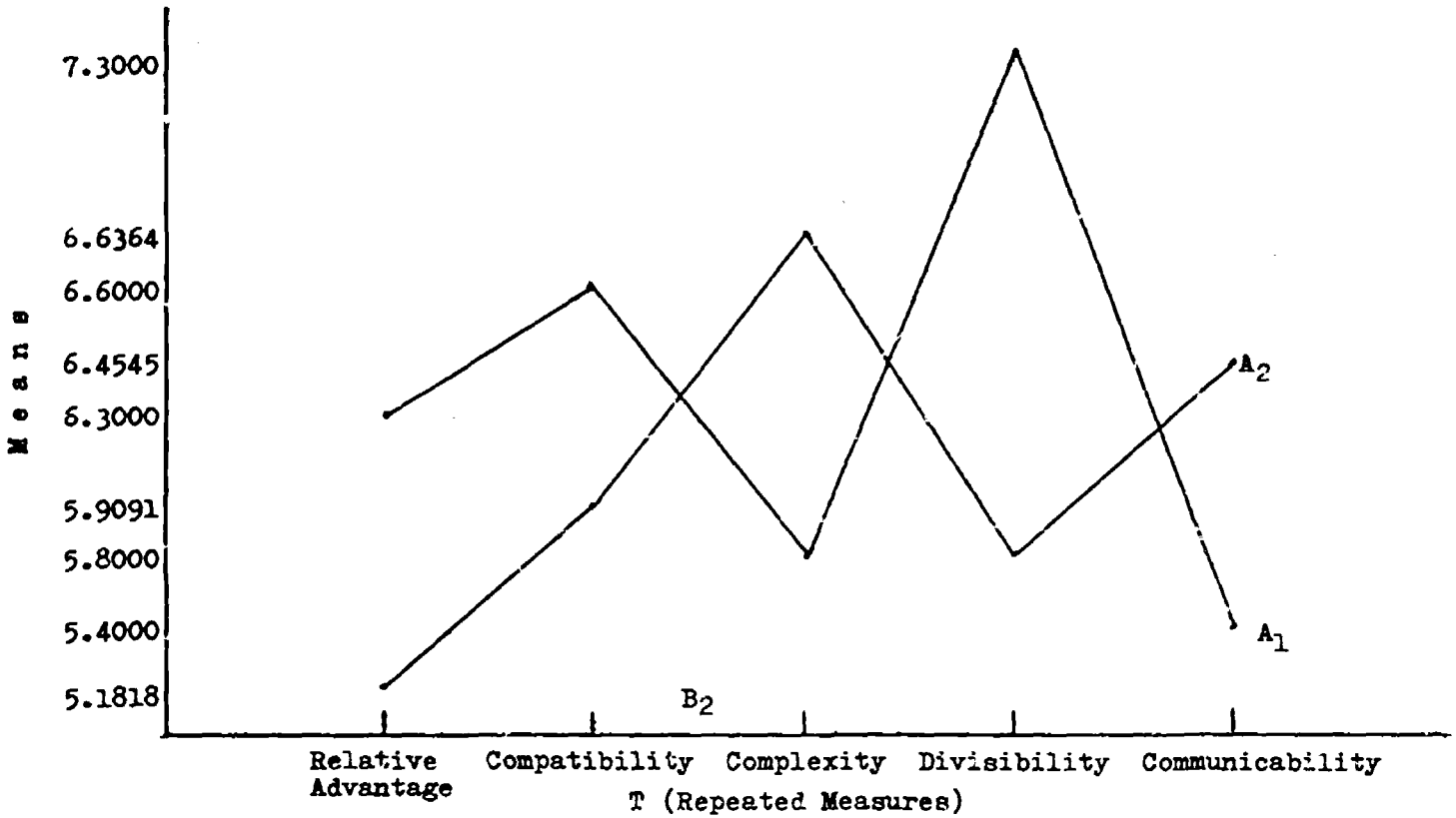


FIGURE 4.4

MEANS FOR LEVELS OF A AT EACH LEVEL OF T FOR B_2

No significant differences were noted between the main effects for component 3. A significant difference (.001 level) was noted in Means of the Total within-subjects (repeated measures). Greatest difference occurs between the Means of Relative Advantage and Complexity, possibly indicating that subjects felt this particular component easier to understand and use than it was advantageous.

Component 4, as the other components, presented no significant differences between the between-groups but did obtain significance on the Total within-subject variance. Largest difference in Means is between Compatibility and Divisibility. Such differences may indicate that subjects felt that this component was more likely to lend itself to trial on a limited basis than it was consistent with current philosophy and practice.

In order to explore the possibility that subjects might be perceiving the four components differently when each is totaled across the five characteristics of innovation, an analysis of variance with these components as dependent variables was computed (Table 4.30). No significant differences were noted for these analyses.

Hypothesis 3

Hypothesis 3 proposes that adopter and non-adopter sample populations will show differences in perception of specific aspects of the characteristic of innovation, Relative

TABLE 4.30. AN ANALYSIS OF VARIANCE OF ADOPTERS, NON-ADOPTERS, SUPERINTENDENTS, SPECIAL EDUCATION ADMINISTRATORS, POWER STRUCTURE MEMBERS, ON THE FACTORS THE FOUR COMPONENTS OF PLAN A.

Factor--Increased contact for the handicapped student with the normal stream of education.

Source	M.S.	D.F.	F-Ratio	Probability
Total	35.058	52		
Between	11.885	5		
A	11.503	1	.3066	.5890
B	22.257	2	.5931	.5616
AB	1.705	2	.0454	.9557
Within	37.523	47		

Factor--More liberal funding for special education under the minimum foundation program.

Source	M.S.	D.F.	F-Ratio	Probability
Total	60.987	52		
Between	11.570	5		
A	3.990	1	.0602	.8024
B	21.750	2	.3283	.7264
AB	5.179	2	.0782	.9244
Within	66.244	47		

Factor--Increased supportive personnel and services for special education.

Source	M.S.	D.F.	F-Ratio	Probability
Total	40.065	52		
Between	51.503	5		
A	16.009	1	.4121	.5310
B	43.891	2	1.1298	.3322
AB	76.862	2	1.9785	.1477
Within	38.848	47		

Factor--Broadened definition of handicapped student and special education.

Source	M.S.	D.F.	F-Ratio	Probability
Total	43.956	52		
Between	37.106	5		
A	44.267	1	.9906	.6744
B	7.277	2	.1629	.8509
AB	63.354	2	1.4178	.2514
Within	44.685	47		

Advantage (funds, personnel, prestige, outside pressures, instructional quality, legislative and administrative security, Texas Education Agency contact, teacher and curriculum influence, community support). Two specific analysis of variance problems were computed in order to evaluate this hypothesis. The first computes an analysis of variance between adopters and non-adopters, superintendents, special education administrators, and power structure members on the variable, total specific aspects of Relative Advantage. The source table for this computation is presented in Table 4.31.

As may be noted from the probability figures, no significant differences between the A factor (adopters, non-adopters), B factor (superintendents, special education administrators, power structure members) or interaction of these factors occurred. This would seem to indicate that when the specific aspects of Relative Advantage of Plan A are considered as a whole, there are no significant differences in the sample populations of this study.

TABLE 4.31. AN ANALYSIS OF VARIANCE OF POPULATION SAMPLES ON THE FACTOR, TOTAL OF SPECIFIC ASPECTS OF RELATIVE ADVANTAGE.

Source	M.S.	D.F.	F-Ratio	Probability
Total	4093.832	52		
Between	3049.366	5		
A	1700.948	1	.4045	.5348
B	4583.316	2	1.0900	.3454
AB	2189.624	2	.5207	.6029
Within	4204.945	47		

In order to evaluate more closely the specific aspects of Relative Advantage individually, a series of analyses of variance computations were made, with the source tables for each specific aspect presented in Table 4.32.

TABLE 4.32. AN ANALYSIS OF VARIANCE OF POPULATION SAMPLES ON THE FACTORS, SPECIFIC ASPECTS OF RELATIVE ADVANTAGE (FUNDS, PERSONNEL, PRESTIGE, OUTSIDE PRESSURES, INSTRUCTIONAL QUALITY, LEGISLATIVE AND ADMINISTRATIVE SECURITY, TEXAS EDUCATION AGENCY CONTACT, TEACHER AND CURRICULUM INFLUENCE, AND COMMUNITY SUPPORT).

Factor--Funds

Source	M.S.	D.F.	F-Ratio	Probability
Total	11.519	52		
Between	20.727	5		
A	6.647	1	.6306	.5631
B	39.383	2	3.7367*	.0303
AB	9.112	2	.8645	.5691
Within	10.540	47		

* < .05 Significance Level

Factor--Personnel

Source	M.S.	D.F.	F-Ratio	Probability
Total	8.805	52		
Between	6.482	5		
A	6.142	1	.6785	.5806
B	9.193	2	1.0156	.3715
AB	3.942	2	.4354	.6552
Within	9.052	47		

Factor--Prestige (Total)

Source	M.S.	D.F.	F-Ratio	Probability
Total	23.484	52		
Between	36.010	5		
A	67.535	1	3.0487	.0837
B	15.609	2	.7046	.5038
AB	40.648	2	1.8350	.1691
Within	22.152	47		

Factor--Prestige (School District)

Source	M.S.	D.F.	F-Ratio	Probability
Total	1.930	52		
Between	3.582	5		
A	4.488	1	2.5586	.1126
B	.611	2	.3486	.7125
AB	6.100	2	3.4776*	.0379
Within	1.754	47		

* < .05 Significance Level

Factor--Prestige (Community)

Source	M.S.	D.F.	F-Ratio	Probability
Total	2.065	52		
Between	2.712	5		
A	4.577	1	2.2934	.1329
B	2.369	2	1.1868	.3143
AB	2.123	2	1.0636	.3544
Within	1.996	47		

Factor--Prestige (Special Education Administrator)

Source	M.S.	D.F.	F-Ratio	Probability
Total	1.928	52		
Between	2.247	5		
A	3.756	1	1.9828	.1623
B	.958	2	.5057	.6118
AB	2.781	2	1.4680	.2395
Within	1.894	47		

Factor--Prestige (Superintendent)

Source	M.S.	D.F.	F-Ratio	Probability
Total	2.023	52		
Between	1.918	5		
A	4.088	1	2.0093	.1595
B	1.733	2	.8517	.5636
AB	1.019	2	.5007	.6148
Within	2.035	47		

Factor--Security from change and outside pressures

Source	M.S.	D.F.	F-Ratio	Probability
Total	21.657	52		
Between	9.484	5		
A	8.087	1	.3523	.5625
B	11.154	2	.4860	.6237
AB	8.513	2	.3709	.6973
Within	22.952	47		

Factor--Instructional Quality and Teacher and Curriculum Influence

Source	M.S.	D.F.	F-Ratio	Probability
Total	9.997	52		
Between	7.493	5		
A	.184	1	.0179	.8893
B	13.372	2	1.3030	.2808
AB	5.267	2	.5132	.6074
Within	10.263	47		

Factor--Texas Education Agency Contact

Source	M.S.	D.F.	F-Ratio	Probability
Total	3.808	52		
Between	1.474	5		
A	4.550	1	1.1242	.2946
B	.880	2	.2170	.8079
AB	.526	2	.1296	.8787
Within	4.056	47		

Factor--Community Support

Source	M.S.	D.F.	F-Ratio	Probability
Total	2.601	52		
Between	1.486	5		
A	6.376	1	2.3440	.1287
B	.276	2	.1016	.9031
AB	.251	2	.0924	.9114
Within	2.720	47		

Of the eleven dependent variables presented in Table 4.32, only two of the variables have significant differences between factors (Funds and School District Prestige).

The dependent variable Funds provides a significant difference in the B factor (superintendents, special education administrators, power structure members). The largest difference in the three Means occurs between superintendents and special education administrators. This information would indicate that the organizational levels within the sample populations perceive the additional funds available under the new state plan for special education in significantly different ways with regard to their Relative Advantage.

The dependent variable School District Prestige has a significant interaction between A and B factors, i.e., between adopters, non-adopters, and superintendents, special education administrators, and power structure members. The largest difference in Means occurs between Adopter Superintendents and Non-Adopter Superintendents. This information would seem to indicate that adopter, non-adopter perceptions of school district prestige under the new state plan for special education is not independent of the superintendent, special education administrator, power structure member classifications, and vice versa.

Hypothesis 4

Hypothesis 4 suggests that there is a difference in the number of special education services (available this year

under the new state plan) which were provided by adopter and non-adopter school districts last year without legislative direction. An analysis of variance was computed, and the source table for this analysis is presented in Table 4.33.

TABLE 4.33. AN ANALYSIS OF VARIANCE OF ADOPTERS, NON-ADOPTERS, SUPERINTENDENTS, SPECIAL EDUCATION ADMINISTRATORS, POWER STRUCTURE MEMBERS ON THE FACTOR PLAN A SPECIAL EDUCATION SERVICES AVAILABLE LAST YEAR IN SAMPLE SCHOOL DISTRICTS.

Source	M.S.	D.F.	F-Ratio	Probability
Total	124.587	52		
Between	120.087	5		
A	217.261	1	1.7372	.1910
B	113.176	2	.9094	.5858
AB	78.410	2	.6269	.5434
Within	125.066	47		

The analysis depicted in Table 4.33 indicates that for the population samples there were no significant differences in the special education services provided last year by these districts.

Hypothesis 5

Hypothesis 5, which deals with the development of decision-making power structures of school districts, proposes that superintendents will be identified as members of the power structure of their respective school districts. Tables 4.2 and 4.3 indicate that of a possible 20 superintendents (20 sample districts, 10 adopter and 10 non-adopter), 18 of the superintendents were identified as being members of the decision-making power structure of their school district.

Hypothesis 6

The proposal of hypothesis 6 is that superintendents of adopting school districts will have a higher level of support from the various organizational levels of the school district (special education administrators and power structure members) than will their counterparts in non-adopting school districts. The analyses of variance were presented in Tables 4.23 - 4.30, with no significant differences noted.

Results of Ancillary Questions Testing

Ancillary Question 1

Ancillary Question 1 asks whether there are differences in the way that superintendents, special education administrators, and power structure members characterize the new state plan for special education, regardless of whether they are classified as adopters or non-adopters.

The analyses of variance which were presented in Tables 4.23 - 4.30 provide a negative answer to this question: No differences were found in the sample populations.

Ancillary Question 2

Ancillary Question 2 seeks to investigate whether there are differences in adopters and non-adopters with regard to the number of educational innovations attempted in the past. The analysis of variance computation for this question is

presented in Table 4.34. This analysis would indicate that there were no significant differences in the number of educational innovations attempted by the sample populations.

TABLE 4.34. AN ANALYSIS OF VARIANCE OF ADOPTERS, NON-ADOPTERS, SUPERINTENDENTS, SPECIAL EDUCATION ADMINISTRATORS, POWER STRUCTURE MEMBERS, ON THE FACTOR EDUCATIONAL INNOVATIONS ATTEMPTED IN THE PAST BY SAMPLE SCHOOL DISTRICTS.

Source	M.S.	D.F.	F-Ratio	Probability
Total	20.443	52		
Between	17.545	5		
A	38.325	1	1.8463	.1775
B	23.758	2	1.1446	.3275
AB	.941	2	.0454	.9558
Within	20.758	47		

Ancillary Question 3

Ancillary Question 3 asks whether there are differences in the number of technical resources available in adopter and non-adopter school districts. Personnel, services and expenditures per capita were classified as technical resources for this evaluation. Table 4.35 presents this analysis of variance.

TABLE 4.35. AN ANALYSIS OF VARIANCE OF ADOPTERS, NON-ADOPTERS, SUPERINTENDENTS, SPECIAL EDUCATION ADMINISTRATORS, POWER STRUCTURE MEMBERS, ON THE FACTOR PERSONNEL AND SERVICES AVAILABLE IN SAMPLE SCHOOL DISTRICTS.

Source	M.S.	D.F.	F-Ratio	Probability
Total	9.024	52		
Between	7.498	5		
A	.351	1	.0382	.8401
B	3.088	2	.3362	.7210
AB	15.481	2	1.6853	.1947
Within	9.186	47		

Observation of Table 4.35 suggests that in the sample populations, there were no significant differences in the between factors on the dependent variable Personnel and Services Available to the school district.

Table 4.36 is an analysis of variance source table for expenditures per capita in the sample school districts, which indicates that there were no significant differences between groups on the dependent variable Expenditures Per Capita.

TABLE 4.36. AN ANALYSIS OF VARIANCE OF ADOPTERS, NON-ADOPTERS, SUPERINTENDENTS, SPECIAL EDUCATION ADMINISTRATORS. POWER STRUCTURE MEMBERS, ON THE FACTOR EXPENDITURES PER CAPITA IN THE SAMPLE SCHOOL DISTRICTS.

Source	M.S.	D.F.	F-Ratio	Probability
Total	.691	52		
Between	.339	5		
A	.000	1	.0004	.9818
B	.746	2	1.0245	.3682
AB	.102	2	.1404	.8695
Within	.728	47		

Ancillary Question 3, with regard to differences in technical resources available to the sample districts, has been answered with the observation that no significant differences were noted in the samples.

Summary

This chapter has presented the results of the analysis of data created by the design of this study. The results of the power structure survey were presented and analyzed,

demographic data for subjects as well as districts were presented in the form of descriptive statistics, the hypotheses of the study were tested utilizing various analysis of variance computational techniques, and the ancillary questions were answered by employing the same general statistical routines.

Based on the general rules of levels of significant differences, Hypotheses 1, 2, 4, and 6 were rejected. Hypothesis 3 was partially supported by the observation of significant differences in one factor on the dependent variable Funds and on the interaction of two factors on the dependent variable School District Prestige. Both of these dependent variables were specific aspects of the characteristic of innovation, Relative Advantage. Hypothesis 5 was accepted. Ancillary Questions 1, 2, and 3 were answered in the negative. The implications of these findings will be presented in the following chapter.

REFERENCES

Texas Education Agency. Statistical Report, 1968-69, Part II. Austin: Author, 1970, Bulletin 698.

Veldman, D. J. Edstat-V, basic statistical computer programs for the CDC 6600. Austin, Texas: Research and Development Center for Teacher Education, 1970.

CHAPTER V

SUMMARY AND CONCLUSIONS

Summary

The legislature and state board of education of the State of Texas provided a new state plan for special education. This "Comprehensive Special Education for Exceptional Children (Plan A)" has been acclaimed by special educators throughout the nation as progressive and innovative. Little research has been conducted in education dealing with the adoption of innovation, most such research having occurred in the field of rural sociology. Rural sociologist Everett Rogers has developed and researched a theoretical model for the adoption of innovation (1960). Only recently has Rogers' model been applied sparingly to studies of adoption in the field of education (Jenks, 1968; Littleton, 1970).

This study investigated how school districts that adopt a specific innovation (Comprehensive Special Education for Exceptional Children [Plan A]) differ from school districts that choose not to adopt the innovation. Specifically, members of the power structure of the school districts, as related to special education, were identified. These members of the power structure, as well as superintendents and special

education administrators, characterized this innovation according to the dimensions Relative Advantage, Compatibility, Complexity, Divisibility and Communicability.

Twenty school districts of Texas participated in the study, ten districts designated adopters of innovation on the criteria of submitting proposals for "Plan A" of the new state plan for special education, and ten non-adopter districts which counterbalanced adopter districts on a number of crucial variables. Instruments were developed and administered to three organizational levels of these districts: superintendent, special education administrator, and member of the power structure of the district. The groups were compared statistically on their perceptions of specific components of the new state plan for special education.

The results of the study indicate that decision-making power in the sample school districts is very tightly confined to individuals in administrative positions of the school systems. The decision-making processes appear to be very traditional, i.e., flowing from the top of the organization, with few individuals at other levels exerting much power in the process. Weber (1947) describes the bureaucratic model which would seem to apply to those districts involved in this study. This is significantly illustrated by the fact that 18 of the 20 possible superintendents in the sample districts were identified as being members of the power structure of their school districts.

The most remarkable finding of this study was that there were no statistically significant differences in the perceptions of adopters, non-adopters, regardless of their level in the organization of the school districts.

However, a number of significant differences were noted in the perceptions of the total sample populations:

1. The dependent variable of Relative Advantage was significant on Total Within-Subject variance, $p < .001$, suggesting that sample populations felt that the component special supportive personnel and services were more advantageous than contact for the handicapped with the normal stream of education.
2. The dependent variable of Compatibility was significant on Total Within-Subject variance, $p < .001$, suggesting that sample populations felt that the component special supportive personnel and services were more compatible with existing philosophy and practices than the more liberal funding component.
3. The dependent variable of Communicability was significant on Total Within-Subject variance, $p < .001$, suggesting that sample populations felt that special supportive personnel and services was a component easier to communicate to others than was contact for the handicapped student with the normal stream of education.

4. The dependent variable of Communicability was significant on ABT interaction, $p < .05$. Complexity of interaction of Means produces difficulty in interpretation.
5. The dependent variable, Component 1 (greater contact for the handicapped student with the normal stream of education), was significant on Total Within-Subject variance, $p < .001$, suggesting that sample populations felt that greater contact for the handicapped student with the normal stream of education was more advantageous than it was compatible with existing philosophy and practice.
6. The dependent variable, Component 2 (more liberal funding of special education under the minimum foundation program), was significant on ABT interaction, $p < .05$. Complexity of the interaction of the Means leaves interpretation difficult.
7. The dependent variable, Component 3 (increased numbers of special supportive personnel and services for special education), was significant on Total Subject variance, $p < .001$, suggesting that sample populations felt this component was easier to understand and use than it was advantageous.
8. The dependent variable, Component 4 (broadened definition of handicapped student and special education), was significant on Total Subject variance, $p < .001$, suggesting that sample populations felt that this component was easier to

present for trial than it was compatible with current philosophy and practice.

9. The dependent variable of specific aspect of Relative Advantage, Funds, was significant on B main effect, $p < .05$, suggesting that the organizational levels perceive funds differently with regard to the characteristic Relative Advantage.

10. The dependent variable of specific aspect of Relative Advantage, School District Prestige, was significant on AB interaction, $p < .05$, suggesting that adopters', non-adopters' perceptions of school district prestige is not independent of the organizational levels, i.e., superintendents, special education administrators, power structure members.

Conclusions

Based on a large body of knowledge related to the adoption and diffusion of innovation, it was hypothesized in this study that educators who chose to adopt a specific educational innovation would perceive this innovation differently than non-adopting educators. Such differences, if they exist, were not demonstrated by the data at a statistically significant level. The most obvious implication of these results could be that educators do not have different perceptions of special education innovations but base their decisions concerning adoption, non-adoption on other variables.

Although the results are diametric to the research hypotheses, they are in agreement with the results of at least two other specific studies of adoption of educational innovation which utilized Rogers' (1960) paradigm. Kohl (1966) found no significant differences in the perceptions of educators on the five characteristics of innovation. Littleton (1970) found minimal support for the characteristics of innovation. Kohl (1966) and Littleton (1970) found other more crucial variables affecting adoption. With this accumulative evidence which fails to support the characteristics of innovation, the applicability of Rogers' model (1960) in the adoption of specific educational innovations is questionable. Although there is strong evidence of the efficacy of his model in adoption of agricultural innovation, these results suggest that at least in educational research care should be exercised in its application.

Innovations in education appear to omit the stage which Rogers (1960) calls "Trial" from the sequence: Awareness, Interest, Evaluation, Trial, Adoption. The possibility develops that educational innovations predispose educational decision-makers to make a final decision of adoption or non-adoption without trial. This process may produce reward for adoption prior to the "Trial" stage.

Demographic data indicated that the sample subjects and districts were extremely similar in characteristics. The

variables on which these subjects and districts had been matched were chosen on the basis of related literature indicating their importance in the adoption and diffusion of innovations.

The fact that subjects and districts were so very similar and the evidence that there were no significant differences in the perceptions of the new state plan for special education, would seem to indicate that these perceptions were not the crucial variables in the decision to apply or not to apply for Plan A.

Other explanations for lack of significant differences between main effect variables may be:

1. The data indicated that all districts had basically the same amount of formal orientation and information concerning the new state plan, thus providing a standardized input, i.e., respondents' perceptions were molded by identical information concerning a new concept.
2. At the time of data collection, none of the districts or subjects had any substantial experience with Plan A (data was collected early in the 1970-71 fall semester of the school year, and districts selected for participation in Plan A had approximately two months' knowledge of their selection). All other districts had no experience with the new plan other than some possible planning in connection with it. This lack of experience with the plan may have made perceptions rather standard.

3. Since districts had no practical experience with the plan, standardized information which presented the plan as progressive, innovative and precedence-setting, possibly created certain "halo effects."
4. The possibility exists that the new state plan presents such a departure from traditional philosophy and approaches in special education that respondents lacked information at a sufficiently sophisticated level to accurately express their reactions to it.
5. The evidence from related literature suggests quite strongly that differences in perceptions of innovations are crucial in adoption decisions. it seems only logical to suppose that differences may have failed to materialize in this study due to a lack of accuracy in measurement of these perceptions. The lack of instruments having proven external validity creates the possibility that instruments of this study may have failed to measure the intended variables.
6. A further possible difficulty with instrumentation is that discrimination by the instruments may not have been sufficient for significant differences to emerge.

Most significant differences obtained from the data are related to increased numbers of supportive personnel and services. This suggests that funding is such a strong incentive for decision-makers that they fail to see the necessity

of any extensive testing of the innovation. This is particularly true of Texas public schools, where minimum foundation funds are allocated on the basis of numbers of personnel.

It should be noted that there was a tendency for school districts having lower monetary expenditures per child to attempt more educational innovations (See Table 4.14). This is contradictory to some of the related studies (Wilkening, 1952; Fliegel, 1956; Lionberger & Coughenour, 1957; Copp, Sill & Brown, 1958) which suggest that those of higher wealth have a greater tendency to adopt.

Recommendations

The fact that there is a paucity of information concerning the adoption of innovations in education, would seem to indicate that research dealing with this area should be further developed. The importance of investigating the processes by which Texas school districts will initiate the new state plan for special education would appear to be very valuable information for the next five years.

It is recommended that:

1. This study be replicated after school districts have had additional opportunity to become more familiar with the new state plan for special education and have developed increased understanding of its impact, both philosophically and practically.

2. Further studies of perceptions utilize instruments which have been externally validated.
3. Future studies obtain a measure of the subjects' factual knowledge of the state plan in conjunction with perceptions of the plan.
4. The study be replicated utilizing both a combination method and a "Pluralistic" approach (Dahl, 1958; Kimbrough, 1964) to identify the power structure of the school districts.
5. Appropriate agencies devote significant amounts of time and effort to diffusing in depth to school district personnel, information which deals with the four major components of Plan A and their relationship to the characteristics:
    A. Relative Advantage;
    B. Compatibility;
    C. Complexity;
    D. Divisibility;
    E. Communicability.

REFERENCES

Copp, J. H., Sill, M. L. & Brown, E. J. The function of information sources in the farm practice adoption process. Rural Sociology, 1958, 23, 146-157.

Dahl, R. A. A critique of the ruling elite model. American Political Science Review, 1958, 52, 463-469.

Fliegel, F. C. A multiple correlation analysis of factors associated with adoption of farm practices. Rural Sociology, 1956, 21, 284-292.

Jenks, H. C. A study of innovation adoption by teachers from a consortium of schools. Unpublished Doctoral Dissertation, The University of Texas at Austin, 1968.

Kimbrough, R. Political power and educational decision-making. Chicago: Rand McNally, 1964.

Kohl, J. W. Adoption stages and perceptions of characteristics of educational innovations. Unpublished Doctoral Dissertation, The University of Oregon, 1966.

Lionberger, H. F. & Coughenour, C. M. Social structure and diffusion of farm information. Missouri Agricultural Experiment Station Research Bulletin, 1957, 631.

Littleton, V. C., Jr. A study of the factors contributing to the predisposition of elementary principals to try selected innovations. Unpublished Doctoral Dissertation, The University of Texas at Austin, 1970.

Rogers, E. M. Social change in rural society. New York: Appleton-Century-Crofts, 1960.

Weber, M. The theory of social and economic organization. Glencoe, Illinois: Free Press and Falcons Wing Press, 1947.

Wilkening, E. A. Informal leaders and innovators in farm practices. Rural Sociology, 1952, 17, 272-275.

APPENDIX A

Letter to Selected Districts Seeking Participation in the Study

THE UNIVERSITY OF TEXAS AT AUSTIN
COLLEGE OF EDUCATION
AUSTIN, TEXAS 78712

Department of Educational Administration
Education Annex

Area Code 512 471-7551

Dear Superintendent

The State Board of Education in February, 1970, approved a new state plan for special education, calling for all local school districts to implement "Comprehensive Special Education for Exceptional Children (Plan A)" by September, 1976. A number of characteristics of this plan are designed to allow local school district interpretation. We are in the process of conducting a study in the Departments of Special Education and Educational Administration to determine some of the current perceptions that local school districts have of "Plan A." As districts begin to implement this special education plan, it seems important to understand some of their approaches toward this change in programming.

Twenty school districts will be represented in this study. Sampling procedures indicate that your district is representative of several others, and we would like to include you in our study. The study requires only brief (approximately twenty minute) interviews with you as superintendent, and with the person most responsible for special education in your district. A short, (approximately fifteen minute) group administered questionnaire to your principals is also required.

Your assistance in this study will be appreciated, as we hope the study will provide useful information to school districts as they adopt special education "Plan A."

Naturally, all responses of individuals and districts will be confidential and will be reflected only as group data. The results of the study will be shared with you, and we will be happy to answer any questions you may have concerning the study.

We have enclosed a form for your reply with a self-addressed, stamped envelope provided. Thank you for your cooperation and assistance.

Sincerely,

James R. Yates

Charles H. Meisgeier, Ed.D.
Associate Professor, Departments of
Educational Administration and
Special Education

_____ I am willing to participate in the study. Contact me to make specific arrangements.

Superintendent _____ School District _____

Return to:

James R. Yates
The University of Texas at Austin
Department of Educational Administration
Education Annex
Austin, Texas 78712

APPENDIX B

Follow-Up Letter to Selected Districts

THE UNIVERSITY OF TEXAS AT AUSTIN
COLLEGE OF EDUCATION
AUSTIN, TEXAS 78712

Department of Educational Administration
Education Annex

Area Code 512 471-7551

Dear Superintendent

Several weeks ago we contacted you with regard to participating in a study that the Departments of Educational Administration and Special Education are conducting. We are now beginning the final stages of the study and would very much like to include your school district. As you may recall, the State Board of Education in February, 1970, approved a new state plan for special education, calling for all local school districts to implement "Comprehensive Special Education for Exceptional Children (Plan A)" by September, 1976. A number of characteristics of this plan are designed to allow local school district interpretation. This study seeks to determine some of the current perceptions that local school districts have of "Plan A." As districts begin to implement this special education plan, it seems important to understand some of their approaches toward this change in programming.

Twenty school districts will be represented in this study. Sampling procedures indicate that your district is representative of several others, and we would like to include you in our study. The study requires only brief--no longer than twenty minute--interviews with you as superintendent, and with the person most responsible for special education in your district. A short--no more than fifteen minute--group-administered questionnaire to your principals is also required.

Your assistance in this study will be appreciated, as we hope the study will provide useful information to school districts as they adopt special education "Plan A."

All responses of individuals and districts will be confidential and will be reflected only as group data. The results of the study will be shared with you, and we will be happy to answer any questions you may have concerning the study.

We have enclosed a form for your reply with a self-addressed, stamped envelope provided. Thank you for your cooperation and assistance.

Sincerely,

James R. Yates

Charles H. Meisgeier, Ed.D.
Associate Professor, Departments of
Educational Administration and
Special Education

APPENDIX C

Power Structure Survey Form

A STUDY OF SCHOOL DISTRICT AND COMMUNITY PERCEPTIONS OF THE NEW STATE PLAN FOR SPECIAL EDUCATION

The State Board of Education in February, 1970, approved a new state plan for special education, calling for local school districts to implement "Comprehensive Special Education for Exceptional Children (Plan A)" by September, 1976. The plan has a number of new components. Specifically, the new state plan provides:

1. Increased contact for the handicapped student with the normal stream of education by utilizing approaches such as: resource rooms, diagnostic classrooms, itinerant teachers, special supportive personnel, services and materials, etc.

2. A more liberal allotment of state funds under the minimum foundation program of school financing. Funds are to be allotted on the basis of the total school district average daily attendance rather than on the basis of a specific number of identified handicapped students.

3. Increased numbers and types of supportive personnel and services for special education, such as: special supervisors, special counselors, special visiting teachers, special psychologists, etc.

4. A broadening of the definitions of handicapped student and special education to include a larger per cent of the total student population between the ages of three and twenty-one years of age.

IDENTIFICATION OF PERSONS

ACTIVE IN SPECIAL EDUCATION DECISIONS

All school districts have some individuals who are more active than others in making decisions about specific areas of interest. Some of these individuals may be employees of the school district; others may be citizens of the community. Who are the individuals you think were most active in your school district's decision to participate or not to participate in "Plan A" this school year (1970-71)? Please identify them by name and title, employer or some other information that will clearly indicate the individual you have in mind. Do not forget to consider yourself if you feel that you were active in the decision.

Name	Identifying Information, i.e., address, title, employer, position, etc.

Using the names of the individuals that you considered to be the most active in the decision concerning "Plan A," rank the first three in terms of the amount of involvement of the individual. (1 = the most active; 2 = second most active; 3 = third most active)

Name

1.

2.

3.

APPENDIX D

Adoption of Innovation Questionnaire

A STUDY OF SCHOOL DISTRICT AND COMMUNITY PERCEPTIONS OF THE NEW STATE PLAN FOR SPECIAL EDUCATION

The State Board of Education in February, 1970, approved a new state plan for special education, calling for local school districts to implement "Comprehensive Special Education for Exceptional Children (Plan A)" by September, 1976. The plan has a number of new components. Specifically, the new state plan provides:

1. Increased contact for the handicapped student with the normal stream of education by utilizing approaches such as: resource rooms, diagnostic classrooms, itinerant teachers, special supportive personnel, services and materials, etc.

2. A more liberal allotment of state funds under the minimum foundation program of school financing. Funds are to be allotted on the basis of the total school district average daily attendance rather than on the basis of a specific number of identified handicapped students.

3. Increased numbers and types of supportive personnel and services for special education, such as: special supervisors, special counselors, special visiting teachers, special psychologists, etc.

4. A broadening of the definitions of handicapped student and special education to include a larger per cent of the total student population between the ages of three and twenty-one years of age.

DESCRIPTIVE INFORMATION

CONFIDENTIAL: This data is confidential and will be reported only as group data with no identification of individual or school district.

Instructions: Complete the blanks with the appropriate information. If some information is not known, leave it blank.

1. Name_____
2. Sex: Male_____ Female_____
3. Age:_____
4. Educational level (Check):
   Less than Bachelor's Degree_____
   Bachelor's Degree_____
   Master's Degree_____
   Master's Degree plus
   additional courses_____
   Doctorate_____
5. School District:_____
6. Position; i.e., Lawyer, Rancher, Superintendent, Principal, etc.:_____
7. How long have you been employed or associated with this school district?_____
8. How long do you anticipate, as far as you know at this time, being employed or associated with this school district?

   _____
9. Check the personnel or services that are utilized in your school district:

   elementary supervisor_____
   secondary supervisor_____
   high school counselor_____
   elementary counselor_____
   curriculum specialist_____
   school psychologist_____
   school physician_____
   school nurse_____
   visiting teacher_____
   remedial reading specialist_____
   special education administrator_____
   special education supervisor_____

   Provided by resources outside the school district:

   parent counseling_____
   medical consultation_____
   psychological services_____
   medical services_____
   welfare services_____

10. Please check the following programs which have been tried in your school district within the past three years.

modern math_____	Teacher Corps_____
bilingual programs_____	student exchange_____
non-gradedness_____	independent study_____
flexible scheduling_____	extended field trips_____
I.P.I._____	community school_____
AAAS Science_____	open school architecture_____
typing in elementary_____	teacher exchange_____
language labs_____	micro teaching_____
student aides_____	released or shared time_____
computer assisted instruction_____	multiple school district cooperation_____
paraprofessionals_____	pre-school programs_____
programmed learning_____	other_____
extended school year_____	_____
team teaching_____	_____
work/study programs_____	

11. Which do you go to most often for reliable information about special education? (Check ONE)

Authoritative written sources, i.e., libraries, professional journals, ERIC, etc. _____

Knowledgeable People, i.e., superintendents, experts, University personnel, ESC, etc. _____

12. Did you attend the Texas Education Agency area workshop or any other TEA Conference specifically designed to disseminate information concerning the new special education plan?

Yes_____ No_____ Don't Know_____

13. Did anyone else from your school district attend any of these conferences?

Yes_____ No_____ Don't know_____

DESCRIPTION OF LAST YEAR'S

SPECIAL EDUCATION PROGRAM

Check the services and programs provided by your school district last year (1969-70). If you do not know about some of the programs or services, leave those blank.

Did your school district last year (1969-70):

1. Provide special funds to purchase special instructional materials for handicapped students?_____
2. Have a special program for pregnant students?_____
3. Have a special program for emotionally disturbed students?_____
4. Have a special program for language or learning disabled students?_____
5. Have a pre-school program for handicapped students?_____
6. Have a special program for multiple handicapped students?_____
7. Provide special transportation for all handicapped students needing it?_____
8. Contract services for handicapped students with:
   other public schools?_____
   non-public schools?_____
9. Have a diagnostic classroom?_____
10. Have resource rooms for some handicapped students?_____
11. Allow some handicapped students to spend time in regular classrooms?_____
12. Utilize some special education teachers for instructional roles other than those in the special education classroom?_____
13. Utilize in the special education program:
    paraprofessionals?_____
    special supervisors?_____
    special visiting teachers?_____
    special counselors?_____
    educational diagnosticians?_____
    school psychologists?_____
14. Obtain outside consultant services for:
    medical?_____
    psychological?_____
    physical therapy?_____
    occupational therapy?_____

CHARACTERISTICS OF PLAN A

In reacting to various components of the new State Plan for Special Education, some individuals have expressed enthusiasm and optimism, others caution and concern. We would like to ask you to give us your reactions to the major components of this new plan (Plan A).

Specifically, we wish you to react to the plan by classifying the various components, using the following characteristics:

1. Relative Advantage--the degree to which Plan A is superior to current practices.

2. Compatibility--the degree to which Plan A is consistent with current philosophy and past experiences.

3. Complexity--the degree to which Plan A is relatively difficult to understand and use.

4. Divisibility--the degree to which Plan A may be tried on a limited basis.

5. Communicability--the degree to which the results of Plan A may be diffused to others.

Instructions: On the pages that follow, place a mark on each scale, which best expresses your perception of the particular component. Please respond to every item of this section; i.e., leave no items blank. For example, if you feel that the component you are considering is very advantageous over previous programs, you would mark the scale:

/	/	/	/	/	/	X
no advantage over current practices						very advantageous over current practices

If you feel that the component has very little advantage over current practices, you would mark the scale:

/	X	/	/	/	/	/
no advantage over current practices						very advantageous over current practices

COMPONENTS OF PLAN A

I. Plan A provides the opportunity for increased contact for the handicapped student with the normal stream of education. This new direction is toward integrating the handicapped student into more regular programs by utilizing approaches such as: resource rooms, diagnostic classrooms, itinerant teachers, special supportive personnel, services and materials, etc.

Relative Advantage

no advantage over current practices	/	/	/	/	/	very advantageous over current practices

Compatibility

not consistent with current philosophy and past experiences	/	/	/	/	/	very consistent with current philosophy and past experiences

Complexity

very difficult to understand and to use	/	/	/	/	/	very easy to understand and to use

Divisibility

cannot be tried on a limited basis	/	/	/	/	/	may be tried on a limited basis

Communicability

impossible to explain to others	/	/	/	/	/	very easy to explain to others

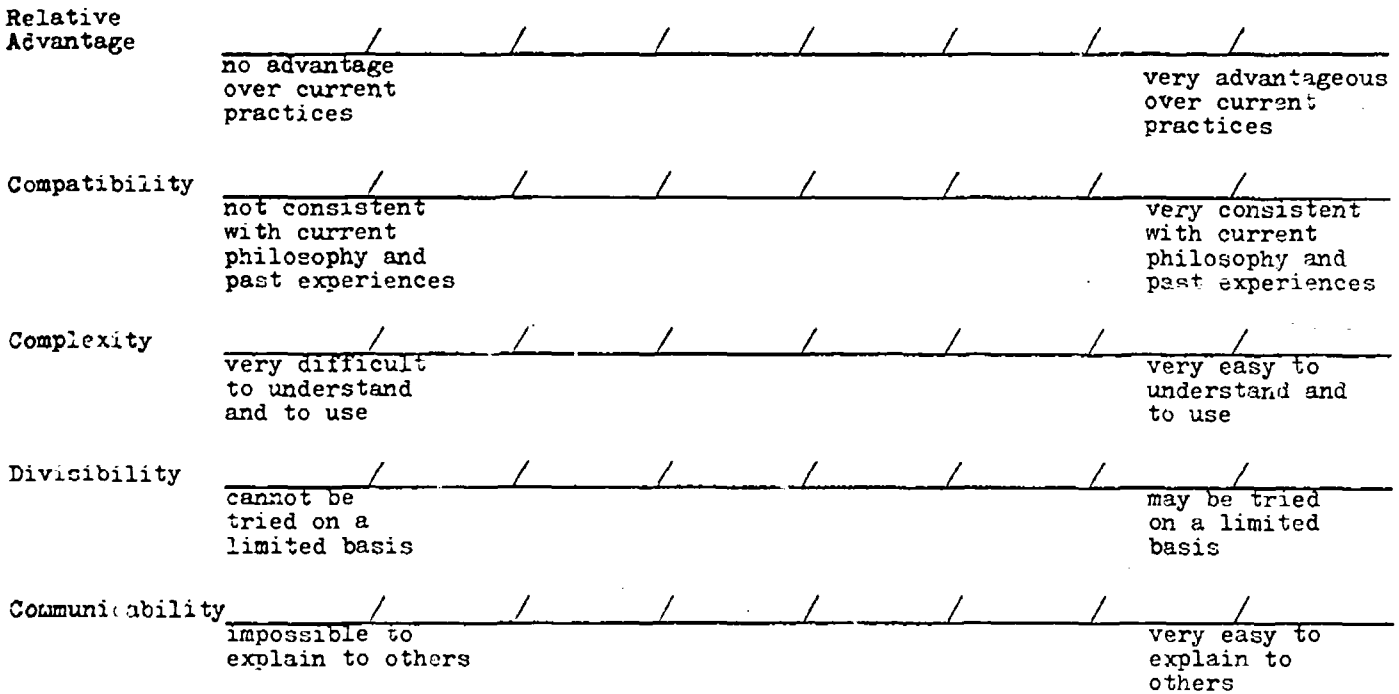
Do you feel generally positive / negative about this particular component of Plan A?

II. Plan A provides for a more literal allotment of funds under the minimum foundation program of school financing. Funds are to be allotted on the basis of total school district average daily attendance rather than on the basis of a specific number of identified handicapped students.

Relative Advantage	no advantage over current practices	very advantageous over current practices
Compatibility	not consistent with current philosophy and past experiences	very consistent with current philosophy and past experiences
Complexity	very difficult to understand and to use	very easy to understand and to use
Divisibility	cannot be tried on a limited basis	may be tried on a limited basis
Communicability	impossible explain to others	very easy to explain to others

Do you feel generally positive / negative about this particular component of Plan A?

III. Plan A provides for an increased number of special supportive personnel and services for special education, such as special supervisors, special counselors, special visiting teachers, special psychologists, etc.



Do you feel generally positive / negative about this particular component of Plan A?

IV. Plan A provides for a broadening of the definitions of handicapped student and special education to include a larger per cent of the total student population between the ages of three and twenty-one years.

Relative Advantage	no advantage over current practices	very advantageous over current practices
Compatibility	not consistent with current philosophy and past experiences	very consistent with current philosophy and past experiences
Complexity	very difficult to understand and to use	very easy to understand and to use
Divisibility	cannot be tried on a limited basis	may be tried on a limited basis
Communicability	impossible to explain to others	very easy to explain to others

Do you feel generally positive / negative about this particular component of Plan A?

CHARACTERISTICS OF PLAN A

If you were to make the decision for your school district concerning initiating Plan A, which of these pairs of characteristics would be more important to you? Circle your choice in each pair. For example, if the Relative Advantage of Plan A over current practices is more important to you than its Compatibility with current philosophy and past experiences, you would:

(Relative advantage).....Compatibility

If, however, Compatibility is more important than Relative Advantage, you would:

Relative advantage.....(Compatibility)

- - - - -

Relative advantage.....Compatibility

Complexity.....Divisibility

Compatibility.....Communicability

Divisibility.....Relative advantage

Communicability.....Complexity

Relative advantage.....Communicability

Complexity.....Compatibility

Divisibility.....Communicability

Complexity.....Relative advantage

Compatibility.....Divisibility

PERCEPTIONS OF PLAN A

Place a mark on the scale that best expresses your perception of that particular item, when it is contrasted with the old state plan for special education. Please respond to every item of this section; i.e., leave no items blank.

1. Plan A, in contrast with the old special education plan, provides a school district with:

more net operating funds	/	/	/	/	/	/	less net operating funds

2. Plan A, in contrast with the old special education plan, provides a school district with:

more freedom in the allocation of funds	/	/	/	/	/	/	less freedom in the allocation of funds

3. Plan A, in contrast with the old special education plan, provides a school district with:

a need for less expenditure of local funds	/	/	/	/	/	/	a need for greater expenditure of local funds

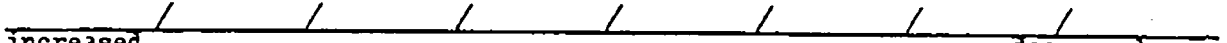
4. Plan A, in contrast with the old special education plan, provides a school district with:

a net increase in personnel	/	/	/	/	/	/	a net decrease in personnel

5. Plan A, in contrast with the old special education plan, provides a school district with:

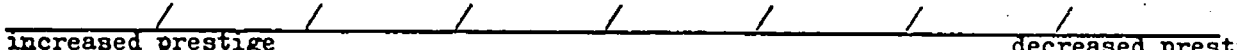
increased freedom in the assignment of personnel — decreased freedom in the assignment of personnel

6. Plan A, in contrast with the old special education plan, provides a school district with:



increased prestige — decreased prestige

7. Plan A, in contrast with the old special education plan, provides:



increased prestige for the local community — decreased prestige for the local community

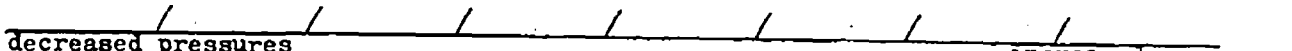
8. Plan A, in contrast with the old special education plan, provides a school district with:

increased prestige for the special education administrator — decreased prestige for the special education administrator

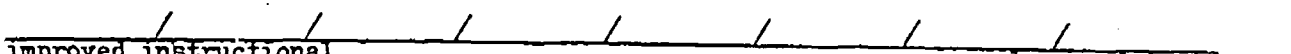
9. Plan A, in contrast with the old special education plan, provides a school district with:

increased prestige for the superintendent — decreased prestige for the superintendent

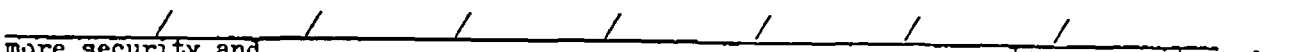
10. Plan A, in contrast with the old special education plan, provides a school district with:



11. Plan A, in contrast with the old special education plan, provides a school district with:



12. Plan A, in contrast with the old special education plan, provides a school district with:



13. Plan A, in contrast with the old special education plan, provides a school district with:

14. Plan A, in contrast with the old special education plan, provides a school district with:

a gain in regular Classroom Teacher Units	/	/	/	/	/	/ a loss in regular Classroom Teacher Units

15. Plan A, in contrast with the old special education plan will:

have a significant influence on regular teachers	/	/	/	/	/	/ not have a significant influence on regular teachers

16. Plan A, in contrast with the old special education plan, will:

have a significant influence on regular education programming	/	/	/	/	/	/ not have a significant influence on regular education programming

17. Your community, with regard to special education, is generally:

supportive	/	/	/	/	/	/ non-supportive

18. What part of Plan A do you like most:

19. What part of Plan A do you like least?

APPENDIX E

Letter of Instruction to Principals

THE UNIVERSITY OF TEXAS AT AUSTIN
COLLEGE OF EDUCATION
AUSTIN, TEXAS 78712

Department of Educational Administration
Education Annex

Area Code 512 471-7551

Dear Principal:

The State Board of Education in February, 1970, approved a new state plan for special education (Plan A). The Departments of Educational Administration and Special Education at the University of Texas at Austin are conducting a statewide study to obtain local school district perceptions of this new plan.

Mr. has agreed to participate in this study. There are two aspects of the study:

1. Information is obtained from the Superintendent and Director of Special Education.

2. Principals are asked to help identify what types and how many individuals in the school district and community are active in special education decisions.

Would you be so kind as to help us with this information by completing the attached form?

Thank you for your assistance. It should be returned to Mr. office by .

Sincerely,

James R. Yates

A STUDY OF ADOPTION OF INNOVATION IN SPECIAL EDUCATION:
A COMPARISON OF TEXAS SCHOOL DISTRICTS APPLYING
AND THOSE NOT APPLYING FOR "COMPREHENSIVE
SPECIAL EDUCATION FOR EXCEPTIONAL CHILDREN (PLAN A)"

The study investigated how school districts that adopt a specific innovation differ from school districts that choose not to adopt the innovation. Specifically, members of the power structure of the school districts as related to Special Education were identified. These members of the power structure, as well as superintendents and Special Education administrators, characterized this innovation according to the dimensions, relative advantage, compatability, complexity, divisibility, communicability.

The results of the study indicate that decision-making power in the sample school districts is very tightly confined to individuals in administrative positions of the school system. There were no statistically significant differences in the perceptions of adopters, non-adopters regardless of their level in the organization of the school districts. However, a number of other significant differences were observed in the characterization and in the perceptions of components of the new state plan.

Most significant differences obtained from the data are related to increased numbers of supportive personnel and services. This suggests that funding is such a strong incentive for decision-makers that they fail to see the necessity of any extensive testing of the innovation.