Determining an alternative organizational structure within two small/rural Iowa school districts: A case study of an innovative decision making process

David Wayne Stoakes

University of Northern Iowa
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Determining an alternative organizational structure within two small/rural Iowa school districts: A case study of an innovative decision-making process

Stoakes, David Wayne, Ed.D.
University of Northern Iowa, 1991

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DETERMINING AN ALTERNATIVE ORGANIZATIONAL STRUCTURE WITHIN
TWO SMALL/RURAL IOWA SCHOOL DISTRICTS: A CASE STUDY
OF AN INNOVATIVE DECISION MAKING PROCESS

A Dissertation
Submitted
In Partial Fulfillment
of the Requirements for the Degree of
Doctor of Education

Approved:

Dr. Robert H. Decker
Dr. James E. Albrecht

David Wayne Stoakes
University of Northern Iowa
December 1991
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An Abstract of a Dissertation

Submitted
In Partial Fulfillment
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December 1991
ABSTRACT

The issues confronting small/rural schools in the state of Iowa are very complex, ranging in scope from the loss of student population, limited financial resources, quality of academic and extra-curricular programs, and even to the very survival of the community in which the school is located. Because of these issues school administrators, boards of education, and school district patrons are confronted with finding a new organizational structure for their school. Processes and procedures used to make these decisions have typically led to emotional battles within the school and community.

The purpose of this study was to apply the Nominal Group Technique and the Interpretive Structural Modeling processes within two small/rural school districts to assess their potential usefulness as analytical tools when a school is faced with making a decision about its organizational structure.

The Nominal Group Technique and Interpretive Structural Model are two validated group techniques found to be useful when analyzing complex problems. To understand more clearly the problem of choosing an alternative organizational structure for a small/rural school these techniques were used to: (a) identify the substantive elements of the issue without the emotional and political influences so common in group decision making, and (b) identify and structure the relationships between the identified elements. Further, a follow-up questionnaire asked participants to assess the Nominal
Group Technique and Interpretive Structural Modeling processes as tools to improve communication and foster a better understanding of the issues when an alternative organizational structure is sought. The Nominal Group Technique and Interpretive Structural Model, as employed in this study, were found to be effective tools to improve the decision making process for two small/rural Iowa school districts faced with making a change in their organizational structure. Moreover, the techniques, because of their flexibility, were found to be useful in other educational settings. The transition process that occurs after two school districts have decided to combine educational programs, establishing consensus and priorities for budget cuts, or the process of restructuring an entire educational program are examples in which the Nominal Group Technique and Interpretive Structural Modeling processes will be useful.
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CHAPTER I
THE PROBLEM AND ITS SETTING

The issues confronting rural schools in the state of Iowa are indeed complex, ranging in scope from the loss of student population, limited financial resources, quality of academic and extra-curricular programs, even to the survival of the community in which a school is located. Attempts to resolve these issues have centered around several options. The most popular in the mid-west, and certainly in the state of Iowa, have been shared programs and services ranging in scope from an individual teacher, administrator, or student to an entire educational program. Other options selected by school districts to help resolve these issues have included reorganization, consolidation, and dissolution. Large segments of rural society no longer view reorganization or dissolution as an acceptable method of solving the dilemma facing small/rural schools. Nachtigal (1982, p. 12) stated, "Local control and tight linkages to the community are perceived to be more important than the claimed efficiency and effectiveness of larger size."

Typically a decision about a school district's organizational structure is made by the local board of education with the participation of school district patrons and, on occasion, outside professional educators. The actual decision making process varies from district to district, but is characterized by emotion and political involvement by school district patrons in all districts. The conceptual problems a district must work through when making a
decision regarding the organizational structure of its school include the disagreements that exist among patrons about the parameters of, and the solutions to, the problem.

Coupling the triple threats of declining enrollment, limited resources, and program accountability with the prevailing attitude in small/rural communities against reorganization, school boards and school administrators are searching for innovative methods to aid their decision making process. With half the school districts nationwide enrolling fewer than 600 students, the issue of the most appropriate organizational structure for small/rural school districts will remain a major focal point for educational policy makers and practitioners (Hobbs, 1988).

**Purpose of the Study**

The purpose of this study was to apply the Nominal Group Technique and the Interpretive Structural Modeling processes within two small/rural school districts to assess their potential usefulness as analytical tools when a school is faced with making a decision about its organizational structure. The Nominal Group Technique and Interpretive Structural Modeling processes were used to identify and analyze the criteria, and their relationships, considered most important by school district patrons, school administrators, and school board members. Moreover, the study used the data generated by these tools to analyze the similarities and differences between two small/rural Iowa school districts faced with making a decision about their organizational structure.
School board members, school administrators, and school district patrons are key participants in the process of defining a new organizational structure for a school district. This study initially looked at these three groups individually because, (a) school administrators are the educational professionals of the community with a frame of reference that differs from the other two groups; (b) school board members, while elected by the community, may not be truly representative of the different social, economic, and political groups within the community; and (c) school district patrons are chief among the major constituencies within the community who will influence the ultimate decision regarding a new organizational structure for the school system.

**Guiding Questions**

The following questions were used to guide the study:

1. When selecting an alternative educational structure for their school system, can the criteria determined most important by school district patrons, school administrators, and school board members be identified using the Nominal Group Technique?

2. When selecting an alternative educational structure for their school system, what similarities and differences exist among the criteria determined most important by school district patrons, school administrators, and school board members?

3. When selecting an alternative educational structure for their school system, can the relationships among the criteria identified as most important by school district patrons, school
administrators, and school board members be identified using the Interpretive Structural Model?

4. When two small/rural school districts select an alternative educational structure for their school, do the criteria deemed most important, and the relationships among those criteria, possess similarities and differences?

5. To what extent, if any, are the Nominal Group Technique and the Interpretive Structural Model useful tools for school districts to employ when making a decision about the organizational structure of their school?

**Assumptions**

The following statements were used as the foundation for the study which determined the usefulness of the Nominal Group Technique and the Interpretive Structural Model in an educational setting.

1. The Nominal Group Technique can be used with groups of varying backgrounds, cultures, education, or work roles who share a common problem or goal (Ulschak, Nathanson, & Gillan, 1981).

2. The Interpretive Structural Modeling technique is broadly applicable to a wide variety of areas where it is useful to develop an understanding of sets of elements related to complex issues (Thissen, Gage, & Warfield, 1980).

3. Members from each school district’s advisory committee selected to participate in the study were representative of the patrons of each school district.
4. All subjects used in the study responded truthfully and accurately.

Limitations of the Study

The generalizability of the study is affected by the following:

1. The superintendent of each school district was asked to select members of the district's advisory committee to participate in the study. The researcher was unable to control for the backgrounds of the members selected.

2. Facilitators for the Nominal Group Technique and Interpretive Structural Modeling processes must be trained and have appropriate inter-personal skills.

3. The Nominal Group Technique and the Interpretive Structural Modeling processes were structured to be completed within a two and one-half hour time frame. Participants become fatigued when working for longer periods of time. Asking volunteers to return for multiple sessions was not appropriate.

Definition of Terms

The following terms are defined to provide a common understanding for all readers.

Consolidation. The change in boundary lines of two or more attendance centers to create a larger attendance center (Knezevich, 1984).

Dissolution. A decision by the patrons of a school district to discontinue the existence of their school district.
Reorganization. The merger of two or more administrative units into a larger unit (Knezevich, 1984).

School District Organization. "A structure through which a state provides educational opportunities for all; the framework which facilitates the accomplishment of educational goals" (Hanson & Purdy, 1968, p. 24).

Small/Rural School. School system located in a community with a population smaller than 2,500—U.S. Census Bureau Definition (Sher, 1978; Doak, 1989).

Methodological Overview

The Nominal Group Technique and Interpretive Structural Model are two validated group techniques found to be useful when analyzing complex problems. To understand more clearly the complex problem of choosing an alternative organizational structure for a small/rural school these techniques were used to: (a) identify the substantive elements of the issue without the emotional and political influences so common in group decision making, and (b) identify and structure the relationships between the identified elements (Warfield, 1976). Further, the data generated by these techniques were used to analyze the similarities and differences found between two small/rural Iowa school districts confronted with a decision relative to their organizational structure. The usefulness of the Nominal Group Technique and Interpretive Structural Model as analytical tools in a small/rural school district was determined by a questionnaire.
completed by participants in both the Nominal Group Technique and Interpretive Structural Modeling processes.

Organization of the Study

Chapter I includes the introduction, the purpose of the study, and the questions that were used to guide the study. The assumptions, limitations, and the definition of terms are also presented. Chapter II reviews the literature related to rural education. An historical perspective of rural education in the United States which examines the changing organizational structure of schools in light of changes in society is presented. The school size issue in the state of Iowa today, and historically, is discussed and the varied "solutions" to the problems of small/rural schools and the resultant controversies examined. The section concludes with a presentation of educational decision making theory and how it relates to issues of school size. Chapter III presents a review of the Nominal Group Technique and Interpretive Structural Modeling processes. Further, specific demographic information relevant to the participant school districts is presented, documenting the need for these districts to seek a change in their organizational structure. The chapter concludes with a description of the procedures used in the study. Chapter IV presents the results of the investigation including an analysis of the Nominal Group Technique, the Interpretive Structural Model, and the follow-up questionnaire. Chapter V includes a summary of the study,
conclusions drawn from the study, and offers recommendations for further research.
CHAPTER II
THE REVIEW OF RELATED LITERATURE

This chapter is organized in two major sections. The first section is an historical overview of rural education in the United States beginning with the origins of the comprehensive high school. An examination of the changing organizational structure of schools in light of societal changes and the resultant national debate over small/rural schools is presented. The second section presents the school size issue in the state of Iowa today and includes a brief historical review. The debate over the various "solutions" to the problems of small/rural schools in Iowa, and the controversies created by these "solutions" is discussed. The section concludes with a presentation of educational decision making theory and how it relates to the school size issue.

Historical Perspective

The history of the secondary school in America can readily be defined as the struggle between small and large, i.e., the inexorable movement from a rural America to a more urbanized America. The changes brought about by those advocating a "bigger is better" philosophy of education are reflected in the urbanization process that occurred in the United States beginning in the mid-1800s. Rosenfeld and Sher (1977) provided a five-part framework for exploring the urbanization process in the United States and the resultant developments in our educational system. Within this structure the theme of small vs. large prevails.
The First Stage of Urbanization: 1840-1870

The forerunner to the comprehensive high school, the Academy, became the dominant institution of secondary education during the mid-1800s. The Academy was designed to meet the major social, economic, and political trends of the time. Politics became more open and accessible to those less affluent and the economy was characterized by the development of the entrepreneur and the small businessman. Secondary education became assessable by the common person as well as the affluent, and the curriculum reflected the need to prepare students for a varied economic structure. The Academies, unfortunately, were dictated by local circumstances, with variations in purpose, educational philosophy, and academic quality. Financial support and quality of instruction were also highly suspect in most Academies. To correct these educational deficiencies educational professionals of the time period such as Horace Mann, secretary of the Massachusetts Board of Education, and Henry Barnard, Connecticut's State Superintendent of Schools, advocated the centralization of schools and changing the control of schools from parents and the local community to the state and professional educators. The debate over the organizational structure of secondary schools in the United States had begun (Rosenfeld & Sher, 1977; Gutek, 1986).

Urbanization: 1870-1895

The transformation of the United States from a predominantly agrarian economy to an urban-industrial society was in full swing
during this time period. This rapid transformation, especially in the North and East, was aided by large quantities of natural resources and cheap labor. Immigrants from southern and eastern Europe as well as internal migration— from farms to cities— provided the necessary labor force. As a result of this rapid urbanization, large cities faced problems with healthy living conditions, adequate police protection, transportation, and educational services. Compounding these problems were the cultural differences brought to the United States by the immigrants from southern and eastern Europe. To help alleviate the cultural shock of moving into an urban-industrial society from a rural village, the immigrants clustered in ethnic enclaves in large cities (Rosenfeld & Sher, 1977).

Although some Americans favored a domestic policy of pluralism, spokespersons for major institutions, such as education, advocated the "assimilation of the immigrants and their children by a policy of Americanism in the public schools" (Gutek, 1986, p. 180). Social integration would thus be gradual and not involve ethnically mixed residential areas. The mission of the public schools was to assimilate the new immigrants into a nation that would manifest the concepts of righteousness, law and order, and a representative government. In addition to assimilating immigrants into the American culture, the schools were also required to prepare students to function in an industrialized economy. This type of economy required a more comprehensive knowledge of the natural, physical, and social
sciences. Young people were in need of an education that would prepare them for specialized professions and skilled occupations. Changes in secondary education during this time period were twofold: the curriculum changed to ensure students received the knowledge and skills necessary to be successful in an ever changing economy, and a more humanistic approach to the psychological and social needs of adolescents was made possible by a more affluent economy (Rosenfeld & Sher, 1977).

Life in rural America, for those who stayed, was changing dramatically as well. Mechanization and specialization enabled the farmer to increase production and thus profit, while needing less manual labor. Social relationships in rural America however, remained basically the same. The nuclear family continued as the primary force in all phases of production, time schedules were guided by the changing of the seasons, and social and political responsibilities were not specialized. Education in rural America, as with urban America, became increasingly important; however not for the assimilation and amalgamation of a new culture, but for the sense of power and control over their lives and the lives of their children that it provided for rural Americans (Rosenfeld & Sher, 1977). Rural education was explicitly a vestige of grass roots democracy.

The consolidation movement became more formalized during this time period with the passage of legislation to mandate centralization. Also becoming more formalized was the rift between
professional educators advocating centralization and rural citizens advocating local control of their schools. Neither group, unfortunately, based their arguments on educational merit. Professional educators were mainly interested in expanding their own power, authority, and control over education, while rural Americans were worried about depreciating land values, higher school costs, location of schools, and the availability of their children to work at home. Many rural schools were in need of improvement because of untrained teachers and inadequate facilities, but the arguments over control negated any substantive improvements. By the 1890s quantity and growth were equated with progress leaving small/rural schools vulnerable to arguments of economy and efficiency.

City schools were the accepted model of educational excellence and, rather than attempting to revise the model to ensure its consistency with rural life, reformers sought to change rural schools so that they would become consistent with the urban model. (Rosenfeld & Sher, 1977, p. 20)

Urbanization: 1896-1920

Industrialization continued unabated in the United States as did the massive immigration from Europe during this quarter century. To ensure the enrollment of immigrant children in the public school system the first compulsory education laws were adopted. Public education, though still fraught with problems, was evolving in the same manner as industry. To deal with thousands of students, large city superintendents adopted the corporation model of business which stressed managerial and operational efficiency. The central...
office staff of school districts became more involved in managerial functions such as supervision, building maintenance, organization of records, and budgeting (Gutek, 1986).

To accomplish even more standardization among schools, and resolve the curricular problems in secondary schools inherited from the Academies, additional reforms were necessary. In 1892 the National Education Association established the "Committee of Ten" to standardize the high school curriculum. The high school was reinforced by this committee as a college preparatory institution and advocated that college preparatory students, as well as students not continuing their education beyond high school, receive the same curriculum. Standardization took another step forward in 1902 when the North Central Association began to accredit schools based on "units" taught. The National Education Association, in 1918, undertook still another reexamination of secondary education. As a result, the "Cardinal Principles of Secondary Education" were adopted that identified the objectives of secondary education: vocational preparation, citizenship, worthy use of leisure time, and ethical character. Moreover, the high school was to be an agency for social integration, i.e., a "comprehensive" institution. Socially, the high school was to be comprehensive to integrate adolescents of different racial, religious, economic, ethnic and social classes in the same institution. Academically comprehensive, by educating students pursuing different curricula—college prep, vocational, clerical, or terminal (Rosenfeld & Sher, 1977). The
development of the comprehensive high school was socially and educationally significant because it represented an institutional effort to continue the philosophy that the United States was a melting pot where those who were educated and worked hard would be economically successful.

As city schools evolved with an emphasis on economy and efficiency, education in rural America varied from town to town, depending on the wealth of the community and the community's philosophy concerning an appropriate education. Professional educators of the day, such as Cubberly, Foght, Betts, and Ayers, derided rural schools as "miserable, unsanitary boxes, with only the most primitive equipment and poorly trained teachers" (Dunne, 1981, p. 330). To improve education in the rural areas, professional educators wanted to create the same system of education evolving in the cities, one based on economy and efficiency. Tyack (1974) has characterized this philosophy of education as the "one best system," whereby size is the key to adequate funding and standardization the key to an adequate curriculum. Larger size and standardization, the professional educators argued, would result in better supervision, age-graded schools, specialized teachers, broader curricula, increased professionalism and expanded resources (Rosenfeld & Sher, 1977). Rural Americans, however, rarely had a counter plan for improving their schools in order to challenge the "one best system" movement. "Thus consolidation and objective standards became (and remain to this day) the professionally acceptable model for rural school reform" (Dunne, 1981, p. 331).
Urbanization: 1920-1944

The urbanization process continued during this quarter century. Mechanization on the farm began to transform agriculture into agribusiness. The Depression of the 1930s significantly decreased the rate of centralization because of limited financing.

Dawson (1934) conducted one of the most comprehensive early studies on school district organization at George Peabody College for Teachers in 1934. Dawson developed minimum standards for elementary and secondary schools in terms of student enrollment and number of teachers. His recommendations advocated elementary schools ranging from 240 to 280 pupils and with a pupil/teacher ratio of 40 to 1, while secondary schools—three years of junior high and three years of senior high—should range from 175 to 250 pupils and have a pupil teacher ratio of 30 to 1.

Urbanization: 1944-1970

As World War II drew to a close the reform of rural education again came to the forefront for educational policy makers. "The most recent and most effective reorganization effort started after World War II, and is still alive today" (Dunne, 1981, p. 332). Knezevich (1984) concurs, "One of the most dramatic developments in public education in the post World War II period has been the modification of school-district structure in the United States" (p. 219). Reduction in the number of school districts in the United States was rapid. During the 1945-46 school year there were 101,382 districts, twenty-five years later there were 17,289.
Seventy-five percent of the districts were eliminated during the twenty year period from 1945-1965 (Knezovich, 1984).

An example of the national attention school reorganization held is reflected in the establishment of The National Commission on School Reorganization (1948). This Commission recommended a minimum of 75 pupils for each age group, which would make for an attendance center of 450 students in both kindergarten through 6th grades and 7th through 12th grades. The Commission also recognized that many students dropped from secondary school and suggested that to ensure 450 students in the 7th-12th grades that elementary grades be increased by 100 students for a total enrollment of 1,000. These recommendations were consistent with the recommendations made approximately 10 years earlier by the United States Office of Education. Travel time for students on buses, however, was reduced from the Office of Education guidelines to 45 minutes one way for elementary students and 60 minutes one way for secondary-school pupils.

During this time period studies were also conducted to determine the relationship between the size of the school district and student achievement. A study conducted by Feldt (1960) at the University of Iowa concluded that the merits of attendance at small schools appeared to have no basis in fact as demonstrated by achievement scores on the Iowa Tests of Educational Development. Feldt reported that achievement scores in high schools of 100 or less were below scores of students who attended large schools of 200 or more students.
and medium sized schools of 101 to 200 students. Additionally, Feldt determined that students who transferred to a large high school after attending a small elementary school never offset the limitations of the elementary schooling. Stephens and Spiess (1967) reported after a meta-analysis that most studies in this area "pointed to a direct and positive relationship between size of school and pertinent factors: achievement, educational cost, breadth of educational program, extra-curricular activities, professional staff qualifications, and special services" (p. 186). Knezevich (1984), studying the issue of school size and student achievement during this time period, noted that test scores remained fairly stable from 1948-1955, but beginning in 1956 average scores rose consistently. A trend he attributed to the rapid increase in reorganization after 1955. Knezevich also predicted that if schools were asked to take on additional social and educational responsibilities they would need to approach 2,400 total students to offer an appropriate educational program. Reorganization, during this time period became the cornerstone of the professional educator's philosophy. Larger schools could provide more specialization and more professional control which would result in higher student achievement.

Secondary education in the United States from the mid-1800s illustrates a reflection of the changing economic structure based on the rise of industrialization. The production efficiencies of an assembly line were adapted to schools with large numbers of
students in one place more economically efficient to educate. This "best" system for public education was advocated for all populations and all communities; rural schools were to emulate the organizational patterns, curriculum, and standards of the urban school systems. Lost in this process of making organizational and structural changes were any substantive improvements for rural schools. Rosenfeld and Sher (1977) captured the essence of the process:

Consolidation ceased to be a coherent response to the very real and difficult problems confronting rural schools, and became elements of an ideology instead. It was an ideology of growth efficiency, and conformity designed to support the nation's rising commitment to industrialism, corporate capitalism, and urban life. (p. 40)

Rural Reality Today

Today there exists two opposing views of the reality of rural America. The first perceives rural America as a sparsely populated version of urban America. Improved transportation and communication systems are allowing rural Americans access to the economic and social benefits their urban counterparts enjoy. Many educational policy makers also hold this view of rural America and advocate the "one best system" philosophy. The second view sees rural America as falling behind urban areas in terms of financial status, adequate housing, access to education, and access to appropriate health care. Small/rural schools also have less than their urban counter-parts: less money, fewer support staff, and lower per-pupil expenditures. With over nine million students in the United States
attending rural schools, roughly 25% of the total school enrollment, rural education cannot be ignored (Nachtigal & Hobbs, 1988).

**Rural Schools and Communities**

The key to understanding a rural community is to realize that in a rural community social relationships are more personal and tightly knit due in measure to the homogeneity of these communities. In addition, moral values tend to be more traditional and the family structure remains primarily intact. Because of these relationships communication within the community is largely verbal, with validity of the information determined by "who said it." Individuals within rural communities hold multiple roles and responsibilities. Running the town, for example, is a part-time job, with the individual holding the mayor's position possibly retired or holding full-time employment elsewhere (Dunne, 1981).

The small/rural school system contains many of the same characteristics of the communities in which they are located. There is a close linkage between the school and community which contributes positively to the quality of education. The teaching staff is more vulnerable to community pressures than teachers in larger school systems because of these tight linkages. The teaching staff in a small/rural school is typically a combination of long-tenured teachers who are originally from the community, those who have moved to town to teach and married a community member, and young teachers who teach in a small/rural school for several years and then move on to a larger system. Teachers and administrators
also assume multiple roles within the school system; for example, the counselor and principal may both have teaching duties. The key figure in a small/rural school, however, is the superintendent. Because the small/rural school is generally free of bureaucracy, a superintendent with good leadership skills can create a positive environment for educational improvement (Sher, 1977; Dunne, 1981).

In most small/rural communities the extra-curricular activity program is of primary importance. The extra-curricular program, particularly athletics, is the direct linkage between the school and community. Extra-curricular activities, which have a much higher rate of participation in small/rural schools than larger schools, are generally the only source of public entertainment and public pride. The function of a small rural/school, in the eyes of the community, goes beyond that of educating children, it is often the vehicle that holds the community together and provides the community with an identity (Nachtigal, 1982).

Advantages and Disadvantages of Small/Rural Schools

Advocates of small/rural schools, when facing those purporting the "one-best system" of education, express vehemently their rationale for maintaining small/rural schools. Beckner (1983) gave an excellent summation of the advantages of small/rural schools: Community relations and control--because of the tight linkage in a small community an informal accountability mechanism is in place. Additionally, there is more parental involvement in the schools through closer contact with teachers and administrators.
and through active involvement in the activity program. Finance—Patrons of small/rural schools, because of tighter linkage with the school, are more willing to support them financially. Administration—Because of fewer layers of bureaucracy, administrators have a closer relationship with the teaching staff which simplifies the change process. Teachers—Have a greater sense of community and know parents on a more personal basis. When problems do arise cooperation is easier. Students—More pride and a higher morale results in better student conduct and more students participate in extra-curricular activities. Students are ultimately the beneficiaries of closer relationships among parents, teachers, administrators, and the community. Curriculum and Instruction—Class size allows for more learner-centered instruction, and even individualized instruction occurs out of necessity. Nachtigal (1982) recognized the advantages of small schools as: small schools serve small groups, human relations are basic, organization and operation are articulated, the operation is flexible, personnel are versatile, facilities serve multiple purposes, pupils participate in policy and planning, and the school is an integral part of the community. Pinsent (1980) and Barker (1986) categorized the advantages of small/rural schools as personal relationships, student morale, teacher-student interaction, administration, and curriculum and instruction. Sher (1977) identified local control, close relations among professionals, parents, students, community, and the opportunity for many more.
students to participate in school activities and leadership
development at a meaningful level as distinctive advantages of
small/rural schools. Nachtigal and Hobbs (1988) agreed with the
acknowledgment of the close interdependence between the school and
community as an advantage. They also identified the "rich
educational environment," meaning the link between education and
the local environment (land, local government, and the economy)
which can be established in a small rural school.

Proponents of the "one best system" of education, state
legislators, state department of education officials, and
administrators of urban schools, identify the disadvantages of
small/rural schools as the reverse of those items identified as
advantages: Community relations and control—Rural communities
have an overbearing influence in regard to their customs and values.
Students have less opportunity for contact with people from different
cultures and backgrounds. Finance—A quality program will require
a relatively high per pupil expenditure. Administration—The
potential benefit of close contact with teachers and students is a
disadvantage if the relationships are not positive, and
administrators are highly susceptible to pressure applied from
community members. Teachers—Teachers are faced with multiple
preparations with few support services. Keeping a quality teaching
staff in place is difficult to accomplish. Students—Homogeneity
of the student body limits their exposure to varied ethnic,
socioeconomic, and cultural groups. Students are also faced with
fewer courses and have fewer support services available such as guidance and counseling and health. Curriculum and Instruction— Small/rural schools have placed an overemphasis on the academic areas of the curriculum because of cost, conservatism of the community, and the pressure to prepare students for college (Beckner, 1983). Sher (1978) agreed with the identified disadvantages of small/rural schools as recruiting and maintaining quality teachers and administrators, providing special support services such as special education and talented and gifted programs, and limited financing. Sher also identified student absenteeism as a problem and saw a need to compensate in some rural districts for their geographic isolation. Dunne (1981) agreed that problems of small schools are the inverse of their strengths. The relationship between the school and community can be used inappropriately by teachers. Because of the familiarity with all students, for example, a teacher may pre-judge a student based on that student's, or sibling's, behavior. Innovation is slow to take place, and there is a tendency for a negative self-fulfilling prophecy. Once everyone "knows" the school is inadequate, it quickly becomes inadequate.

Consolidators vs. Conservators

By accepted standards of the professional education establishment—state departments of education, state boards of education, and state legislatures—small/rural schools are fraught with disadvantages. Reorganization is necessary, according to this philosophy, to redesign school districts that are capable of
delivering an educational program that meets the demands of society and is economically efficient. Knezevich (1984) summarized the long-held position of the professional education community.

School districts of today are challenged to stimulate greater learning among students served to prepare them to perform more efficiently in the world of work or in institutions of higher learning. The delivery of a program of education that is relevant for these times calls for a larger tax base, more students, and efficient utilization of resources available. (p. 170)

Needless to say, the opponents of consolidation consistently challenge this philosophy at every turn. Sher (1978) emphatically refuted the philosophy of the professional education establishment "... there is no strong empirical base to support the assumptions and assertions of school and district consolidation advocates" (p. 16). An analysis of the components of the major arguments are as follows:

Economy of Scale: This is the cornerstone of the consolidator's arguments. Simply stated, as the size of a school district increases unit costs are reduced. This argument, however, does not acknowledge that there are also dis-economies of scale. Guthrie (1979) reported that studies on economic efficiency indicate a U-shaped relationship between per pupil cost and school size. The studies indicated the optimum school size, for economic efficiency, is approximately 1,600 students. Schools that are very small or very large are not economically efficient. The areas of transportation and centralized purchasing have also been analyzed. Transportation studies fail to recognize the increased costs of capital expenditures, salaries,
and operating costs when greater numbers of students are bussed further as a result of reorganization. Small schools become more economically efficient as transportation costs increase due to reorganization (Sher, 1977). Centralized purchasing is also a concept shown not to be economically advantageous as the cost of distribution off-sets the savings found in quantity buying (Sher, 1977). Per pupil expenditures rose from $90.00 in 1939 to approximately $1,000 by 1972, a 400% increase, even when discounting inflation (Guthrie, 1979). School expenditures during this time grew faster than the Gross National Product, indicating consolidation did not hold down the total cost of education. A study of 1,800 schools by Kahn and Hughes (1970), revealed that administrative costs decreased as enrollment increased—an inverse relationship. Expenditures for administrative purposes ranged from 8.8% in districts under 300 students to 3.8% in districts exceeding 25,000 students. The study revealed that administrative economies were not realized in districts over 25,000 students. To summarize the arguments concerning economies of scale Guthrie (1979) wrote,

Evidence in favor of cost savings associated with larger size schools and school districts is, at best, ambiguous. In the instance of rural schools, the setting where consolidation has been most dramatic, it is exceedingly unclear that efficiency favors larger organizations. Transportation appears to make the difference. (p. 23)

Instructional Outcomes: As mentioned previously, traditional advocates of consolidation have based their arguments on grounds that larger schools would lead to expanded course offerings, and higher quality and more specialized instruction. The classic study
The American High School Today, Conant (1959), was well received by an American public reacting to the Soviet presence in space, and was used by consolidation advocates as a confirmation of their ideology.

Conant (1959) was committed to the comprehensive high school as a vehicle to ensure equality of opportunity for all students as well as an equality of status. A comprehensive high school, according to Conant, provides a good general education for all pupils, an elective program for a majority of the students to develop useful skills, and advanced academic subjects for talented students. To accomplish these objectives Conant believed high schools must graduate at least 100 seniors, with reorganization as the key to improve quality. "The number of small high schools must drastically reduced through district reorganization. Aside from this important change, I believe no radical alteration in the basic pattern of American education is necessary in order to improve our public high schools" (Conant, 1959, p. 15).

Conant (1959) attempted to establish the existence of a linear relationship between school size and comprehensiveness. He failed to recognize that several of the largest high schools in his study were the least comprehensive. Conant incorrectly assumed school achievement and success in life were directly related to schools possessing certain key resources (Sher, 1977). Other studies have since shown Conant to be in error. Coleman, et al. (1966) found a negative correlation between the size of the graduating class and
student verbal achievement. Kiesling (1968) also found a negative
correlation between school size and achievement, and Summers and
Wolfe (1975) found a positive correlation between attendance in
small schools in Philadelphia and higher student achievement.
Sher and Tompkins (1977) found that most early studies of the
relationship between school size and academic achievement showed
some degree of a positive relationship between larger size and
student achievement. These studies, however, did not control for
intelligence or socio-economic status of the students, while recent
studies (Coleman et al., 1966; Alkins, 1968; Thrasher & Turner,
1970) that do control for intelligence and socio-economic status
do not show a relationship between large school size and student
achievement. Another key instructional outcome is the participation
of students in the extra-curricular activity program. Barker and
Gump (1964) in one portion of their study Big School, Small School,
analyzed a variety of extra-curricular activities. The study was
conducted in 13 high schools located in eastern Kansas. Student
enrollment ranged from 35 to 2,287, while community size ranged
from 199 to 101,155. The most critical portion of the study compared
juniors in four high schools ranging in size from 83 to 151 with
juniors in the largest high school, enrollment 2,287. Despite the
disparity in size the schools were representative of a homogeneous
economic, cultural, and political society. All of the schools in
the study met the same accreditation standards adopted by the
state of Kansas. Barker and Gump found what has been labeled
the "inside/outside paradox." To someone on the outside looking in, large schools convey a message of power, achievement, and certainty while the small school does not. In the small school, the outside view is one of a relaxed atmosphere and congenial relationships, but in reality the inside view is one of teacher and peer pressure. This pressure is applied to fill the extra-curricular roles necessary for the programs to exist. In the large school, because of greater numbers and greater anonymity, there is less pressure and thus less probability that a student will participate in an extra-curricular activity. Barker and Gump found that the large high school provided a somewhat larger number and a wider variety of extra-curricular activities, but the small high school provided a higher proportion of activities to the number of students with the following consequences: (a) Small school students participate in the same number of settings commonly regarded as extracurricular as do large school students, (b) Small school students participate in a wider variety of extracurricular activities than do the students in a large school, (c) A much larger portion of small school students hold positions of importance and responsibility, and (d) Finally, small school students hold responsible and central positions in a wider variety of activities than do students in a large school (Barker & Gump, 1964).

There is one group of students however, those who are severely handicapped, in which attendance at a larger school does make a difference. Students who are deaf, visually impaired, or are
mentally or behaviorally handicapped need special teachers and special equipment. Large school districts generally have enough handicapped students, or are magnet schools for a geographic region, to make the specialized services cost effective with the resultant instructional benefits to the students (Guthrie, 1979).

Participation Outcomes: Has increased school size resulted in less parental involvement in a child's education and less participation in the governance of schools? Intuitively, it is assumed that as schools become larger there is less involvement in the schools. There is little empirical evidence, however, to substantiate intuition. A number of political changes that have taken place over the course of the consolidation period have created an effect that is difficult to assess (Guthrie, 1979).

Much of the local control of schools has been taken by increased requirements from state and federal governments. This probably has caused people to be less involved in the governance of their schools. Many individuals have an attitude that they cannot have a significant impact on the quality of education because of outside interventions, but again the extent of this is difficult to quantify. The massive changes in the organization of schools during the consolidation period is another factor that has impacted the participation of citizens in the educational process. Prior to the beginning of the consolidation movement in this country, each school board member represented approximately 250 constituents. It is very easy to image the type of personal contact parents had.
with their school board representative. School board representation, on average, is currently over 2,000 constituents. Finally, the influence of the professional educator has broadened during the school consolidation period adding to the perception that citizen involvement in education has declined. Neither consolidators nor conservators can point to the participation of the public in the educational process as evidence to substantiate their philosophical base (Guthrie, 1979).

The School Size Issue in the State of Iowa

The school size in the state of Iowa is a reflection of the national rural education debate, both historically and at the present time. Dunne (1981, p. 326) stated, "The Iowa situation . . . is typical of United States rural education reform conflicts over the last century." Rural education in the United States during the past 150 years has been a continual process of modifying the organizational structure of schools to match the changing social, economic, and political realities of the time; and the state of Iowa is certainly no exception. Hanson and Purdy (1968) identified six distinct periods of school organization within the state which provide an excellent historical background of the school size issue in Iowa.

Unorganized Period: 1830–1858

Schooling began in 1830 while the state of Iowa was still part of the Michigan Territory. By the time Iowa became a territory eight years later there were 40 schoolhouses. The creation of
schools, however, was a result of local initiative with no legal basis. The territorial government, as well as the first state legislature, began to formalize the legal structure for schools by mandating financial and organizational structures. By the time Iowa achieved statehood in 1846, 416 schools had been opened in the state.

**Township Period: 1858-1872**

The Iowa legislature in 1858 established the township as the legal entity for organizing school districts. An unlimited number of school districts were permitted by legislation within an area, but the township remained the legal area for taxing authority and organizational purposes. The township concept, from its inception, was challenged in the rural areas of the state.

**Sub-districting Period: 1872-1900**

Legislation passed in 1872 permitted the sub-division of townships for school organization purposes. This concept resulted in a chaotic, fragmented, and inefficient school organizational structure. In 1900, for example, there were 16,335 schools in operation with 12,623 of these one-room rural schools.

Two innovative organizational concepts were introduced during this time period which, if either had been successful, may have permanently altered the organizational structure of public education in Iowa. The first was the county high school. Guthrie County was the only county to use this option and in 1875 opened a high school in Panora. The second innovation introduced during this
time period was an administrative district with multiple attendance centers. The state superintendent of public instruction introduced this concept to the legislature in 1868. There is no evidence, however, that this concept was ever put into practice.

Consolidated School Movement Period: 1900-1922

The Consolidated School Law, passed in 1906, was intended to provide the impetus for statewide school consolidation. The movement was very slow to develop, and by 1910 only 10 new districts had been created. The first recorded evidence of the Iowa legislature providing financial incentives for district reorganization occurred in 1911. Five hundred dollars was offered to schools which provided "normal training courses," and in 1913 the incentives were expanded to provide $250-$500 to districts which provided "adequate" facilities and equipment and employed certified teachers for vocational education. The Consolidated School Movement Period was halted by the agricultural recession of 1921-22.

Organizational Stability Period: 1922-1953

The lack of economic prosperity during this 30 year time period was instrumental in the relative stability of school district organization. In addition to the agricultural problems of the early 1920s and the national depression of the 1930s, problems of transportation and the cost of operating schools deterred the creation of larger school districts. Consolidated schools offered an expanded curricular program, but with an increased cost to taxpayers. During this period taxation rates were lowest in the
rural independent districts, and the highest rates were paid in the larger city districts. In 1947 the legislature again passed legislation to facilitate the reduction of school districts in the state by establishing county boards of education. These boards were directed to develop master county plans for school district organization by 1953. To help ease the transition, a moratorium was placed on reorganization during the 6 year process. The number of school districts in the state during this period was reduced by 81, from 4,639 to 4,558.

**Community School Movement Period: 1953-1965**

The Iowa legislature passed legislation in 1953 that kept the reorganization movement alive. The legislature desired to accomplish two major objectives: (a) create districts consistent with legislative desires for equal educational opportunities in districts that were efficient and economical, and (b) eliminate non-high school districts. By 1965, 1,056 school districts remained. Additional legislation was required in 1965 to ensure all areas of the state were part of a school district maintaining a high school. In a single year, 552 of these "non-high school" districts were eliminated. The Community School Movement was the first period characterized by a reduction in the number of school districts because of the development and enforcement of educational standards, as well as changing demographics within the state.

Gahn (1990) has added a seventh period of school organization entitled the Enrollment Decline Period. Beginning with the
1966-67 school year and continuing through the 1984-85 school year, the period is characterized by very few changes in the organizational structure of schools. A total of 17 reorganizations took place during this time period, a rate of approximately one per year. The rural areas of the state were undergoing a continual transformation with farms becoming larger, fewer children enrolling in schools, and small town merchants either moving to metropolitan areas or being forced out of business. Declining enrollment was felt by both large and small districts in the state. For example, the enrollment in the Des Moines public school system fell from approximately 45,000 to 30,000 students. The impact of losing 15,000 students was not nearly as severe, however, as the drop from 300 to 107 students in the Lakota district. The Iowa-based Great Plains School District Organization Study (1968) was conducted during this time period. The study cited the concept of using a local community, or group of interrelated communities, as the bases for a school district as indefensible. The authors recommended that local school districts, because of emerging demographic changes, should be located around cities with populations ranging from 2,500 residents to 5,000 residents and contain a minimum of 1,000 students to be cost efficient and provide an adequate educational program (Hanson & Purdy, 1968; Dunne, 1981). This study had very little effect on the school districts in the state. The pace of changing the organizational structure of the state's schools during this time can only be characterized as one of stability.
The State of Iowa Today

During the decade of the 1980s demographic changes have increased dramatically. Small/rural schools experienced a period of declining enrollment and limited financial resources. Coupled with the educational reform movement and its call for program accountability, the issue of the organizational structure of Iowa's school districts was again being hotly debated within the educational and political arenas.

U.S. Census statistics (1980) indicated a state population of 2,914,000 residents. By 1987 the population had decreased to 2,834,000, a net loss of 6.7% (Bartusek, 1988). The most recent census, conducted by the United States Census Bureau during the summer of 1990, showed preliminary estimates of Iowa's population declining by 5% during the 1980s or a total of 150,000 people. This rate is unparalleled in the state's history (Roos & Norman, 1990). Moreover, Iowa's birth rate, another key demographic variable, was the lowest ever recorded in 1987 at 13.2 births per 1,000 residents (Decker & Talbot, 1989). From 1980 to 1987 new households increased by 1.8%, the lowest rate in the nation, while outmigration was also at an all time high. In addition, demographers have predicted that during the 1990s the number of deaths in the state will equal the number of births (Bartusek, 1988).

The dramatic shift in demographics is inextricably linked to a changing economic structure. The key to Iowa's economy has historically been agriculture. Seven of 10 Iowans are involved...
in some endeavor related to agriculture. From 1970 to 1981 an acre of farm land increased from an average of $419 per acre to $2,147 per acre (Fruhling, 1990). Unfortunately, with inflation in the country exceeding 14% late in 1979, the Federal Reserve Board decided to limit the amount of money available to the U.S. economy by driving up interest rates. The effect on the independent farmer was devastating. By 1986 the value of farm land fell to an average of $787 per acre, a decrease of 63% in five years (Fruhling, 1990). As their net worth plummeted, many farmers were unable to secure the necessary financing to continue their farming operation. With Iowa's economy so heavily dependent upon agriculture the entire state was thrown into a severe recession. At the close of the 1980s there were 39 fewer banks than 10 years earlier, 27 fewer savings and loans, 458 fewer grocery stores, 257 fewer automobile dealers, and 1,458 fewer gas stations (Fruhling, 1990). Looking back to the early 1970s and drawing comparisons with the late 1980s, an even darker picture appears—22,000 fewer farms, metropolitan residential construction down 50%, manufacturing workers in farm machinery and equipment down 50%, and a loss of 60% of the state's agricultural wealth (Avenson, 1987).

The dramatic shifts in Iowa's demographics and economic structure have created multifarious changes in the state's school districts. Iowa's peak enrollment, during the 1969-70 school year, totaled 659,888 students. During the 1987-88 school year enrollment totaled 478,859 students, a loss of 181,029 students; or the
equivalent of losing the 20 largest school districts in the state (Bartusek, 1988). Analyzing the most recent 10 year enrollment figures, from 1978 to 1988, total school district enrollment declined 91,002 or 15.9%. The enrollment decline has varied among districts in different enrollment categories, with lower enrollment districts experiencing the most significant decline. School districts enrolling fewer than 250 students experienced a 26.8% decline from 1978 to 1988 with districts of more than 1,000 students losing 14.5%. Two Iowa districts experienced an astronomical 44% and 41% decline in student enrollment during this 10 year period (SAI newsletter, 1988).

Because Iowa finances its schools with a funding formula based on student enrollment, schools throughout the state during the 1980s have experienced very difficult financial circumstances. Decreased tax revenues forced the governor to cut authorized state aid payments by 75 million dollars during the 6 year period from 1980-1986 (IASB, 1987, p. 6). Even financially sound districts felt the negative effects of the economic recession. To help school districts weather the financial storm the foundation aid plan was modified to include an enrollment cushion and a budget guarantee. Even with these modifications to the funding formula, a total of $83 million dollars, the purchasing power of school districts has declined 9.5% when adjusted to 1967 dollars. Further complicating the financial problems is a decline in property taxes of $10.42 per $1,000 dollars of assessed valuation. Property taxes fund
approximately 50% of the controlled budgets in the state (IASB, 1987, p. 7). Another option given school districts by the legislature to ease the financial pressure was the addition of optional tax levies. School boards were given the authority to levy additional taxes to make improvements to their buildings and grounds, and pay for tort liability insurance and unemployment compensation. Gahn (1990) indicates these modifications in funding have helped to prolong the life of small/rural schools.

Coping With Change

The search for appropriate educational responses to these demographic and economic changes has created a continual debate among educators, legislators, taxpayers, parents, and school district patrons. This debate, characterized as "a quiet war" (Dunne, 1981) is pitting the professional education establishment (Department of Education, State Board of Education, and Iowa Legislature) against the citizens of the state's small/rural communities. At issue is the type of school district organizational structure that will ensure a quality educational program.

The professional education establishment in Iowa purports the virtues of reorganization. This philosophy was very much in evidence when, in 1977, the most recent reorganization bill was introduced in the Iowa legislature. The bill was written to eliminate schools with fewer than 300 students (Dunne, 1981). The bill failed to receive enough support for passage. The reorganization issue has come to the forefront again during the trying economic times of
the 1980s. Then State Superintendent Robert Benton, speaking through the Department of Education's own newsletter, summarized the position of the department. "We are past time when we can continue to support our present configuration of school districts. We've got to face up to the demographic and socio-economic changes in the state and start using our resources more efficiently" (DE Dispatch, 1987, p. 1). Benton was directed by the State Board of Education, upon mandate from the Iowa legislature, to develop recommendations for changing the organizational structure of school districts. Benton's proposal contained four alternatives: (a) establish districts, through forced reorganization, of 1,000 students by 1992. At the time of his proposal 333 of the 436 districts or 76% of the districts in the state had fewer than 1,000 students; (b) create 99 county-sized school systems by 1992. This alternative, according to Benton, would reduce the total number of superintendents in the state from 425 to 99, broaden the number of programs for students, but would also have increased the time students spent riding on buses; (c) do not force reorganization, but rely on financial incentives to encourage a "natural progression" of combining schools; and (d) establish a School District Restructuring Commission to develop guidelines for reorganization by 1992. This commission would then over-see the reorganization process by mediating disputes that arose during the restructuring process (Lantor, 1987).

The "bigger is better" philosophy has continued under new leadership at the Department of Education. Dr. William Lepley,
director of the department, outlined eleven strategic issues to be focal points for the 1988-89 school year. The fifth issue Lepley addressed is entitled "School Organization/Structure."

A number of demographic and other changes in the state and in the educational community call for changes in the structure for delivering education and support services in Iowa. This is perhaps one of the most important areas deserving our attention. The Department will be studying restructuring the area education agencies, along with continued efforts to support school district sharing and reorganization. . . . (DE Dispatch, 1988, p. 2)

Lepley used a much softer tone than his predecessor, but the meaning is the same—Iowa is in need of eliminating many of its small/rural schools.

Reorganization is also a very viable alternative to many school board members, superintendents and area education officials within the state. The Iowa Association of School Boards conducted a survey (Lantor, 1988) to determine the philosophical position of these education officials toward reorganization. Sixty percent of the respondents indicated a need to reorganize school districts, and 50% felt that reorganization would improve educational programs. Officials representing districts under 500 in enrollment narrowly favored reorganization, while those in large districts of 3,500 or more students were overwhelmingly in favor of reorganization. The results indicated many favor reorganization, especially when it does not involve their own school district. Only 35% of the respondents were in favor of changing the organizational structure of their own districts by reorganization.
The response to the reorganization push of the 1980s was swift and direct in the rural communities of the state. Memories of reorganizations that took place during the Community School Movement of the 1950s and 60s fostered the development of a grass-roots political organization to fight for the maintenance of small/rural schools. In February of 1977 PURE (People United for Rural Education) was born to combat the urban attitude toward small/rural schools, and "to promote the qualities that have been inherent in rural education and to pursue educational excellence that will enhance rural community life" (Dunne, 1982, p. 189). "Enhance rural community life" is really the foundation of the fight to maintain small/rural schools. Members of PURE, and rural citizens who are represented by PURE, felt their way of life was being threatened. If a small/rural community loses its school, "the whole town dries up," is the common feeling. In addition to economic concerns, small/rural communities fear they will lose their community spirit without a school. To those living in rural communities the school and its activity programs pull the citizens together for social activities and a sense of community cohesiveness. The close-knit relationship between the school and community is seen as the way to perpetuate small town values and delay their children coming into contact too soon with "urban values." The tenacity with which members of small/rural communities support their way of life is equally as fierce when denouncing larger towns and school systems. Larger schools are perceived as greedy, educationally
sloppy, and having a pervasive lack of discipline. "The presence of an external enemy seems to fuel the resistance of the small-schools proponents by giving them a concrete, nearby model of precisely what they do not want for their children" (Dunne, 1982, p. 193).

The effects of a community losing their school are indeed traumatic. A school district located in north central Iowa is a vivid example. The citizens of the community were confronted with many tough decisions even after the school was closed. Class composites, athletic trophies, and the equipment in the building itself had to be removed and discarded or a new home found. Rural mental health experts liken the response of a community losing a school to a family losing a loved-one. A sense of grief is pervasive—"The sense is that if you take away our children, you take away our future" (Fowler, 1988, p. 1). These feelings of loss are not experienced by those who advocate reorganization. Sher (1978) captured the essence of the reorganization debate, ...

... (the) reorganization movement has been opposed most vehemently by the groups on whom such reforms would have the greatest effect and supported most strongly by groups on whom the direct effects would be minimal. Reorganization is a classic example of an externally instigated and imposed reform—one that is done to communities rather than by them. (p. 16)

The Response to Change

Very few alternatives to reorganization are available to school districts. Dissolution, whereby the school district as an entity ceases to exist, is considered less desirable than reorganization.
The most common and successful alternative, pursued as a middle ground between the professional education community and patrons of small/rural schools, is the concept of shared programs and services. Legislative initiative (1978) granted school districts the power to "share" employees and resources (Dunne, 1981). The first "whole-grade" sharing arrangement between school districts was begun in 1980-81 with the Corwith-Wesley and LuVerne school districts. The combined high school was located in Corwith and the combined middle school in LuVerne. This concept of sharing grew dramatically in the decade of the 1980s. During the 1989-90 school year 84 school districts combined at least their high school programs (Gahn, 1990). Other sharing arrangements have been implemented to help solve financial and enrollment problems. These agreements have included the sharing of an individual teacher, principal, activity program, or even superintendent. During the 1987-88 school year 272 school districts were engaged in some type of sharing (Bartusek, 1988). Shared superintendents have increased more dramatically than whole-grade sharing. Two school districts began sharing a superintendent during the 1984-85 school year and by the 1989-90 school year there were 50 shared superintendents (Gahn, 1990).

Presently, 87 school districts within the state have less than 300 students. The total student enrollment in these districts is approximately 19,000 students, or the equivalent of one of the states metropolitan districts. Over half of the remaining 430 school districts in Iowa have less than 600 students, or
approximately 480,000 students (Gahn, 1990). Iowa's population decline is expected to continue into the 1990s and it is projected that another 20,000 students will be lost by the 1992-93 school year (Bartusek, 1988). Two trends are certain to continue for small/rural schools in the state of Iowa. The pressure to change the organizational structure of small/rural school districts will continue unabated from the legislature and Department of Education. Department officials are frustrated by the slow pace of change taking place in rural Iowa. Gahn (1990), a Department of Education consultant, recommends the adoption of statewide planning and policy development for small/rural schools. Without such state intervention Gahn sees the problems of slow progress and poor planning to continue. The other certainty for citizens of small communities is the outpouring of emotion that accompanies discussions of reorganization, dissolution, and even program sharing. Bitter battles among community members are often characterized by vandalism and verbal threats. School board members, committing themselves on one side of an issue, are sometimes forced to remove their students from school, or tenants threatened with removal from their farm if an objection petition to reorganization is not filed. School administrators, boards of education, and school district patrons will continue to face a very complex issue. The appropriate organizational structure for small/rural schools in the state of Iowa will be debated well into the next decade.
The dynamics of this debate will vary from community to community, as will the process for dealing with the resultant controversy. State statutes and Department of Education mandates require certain procedures and timelines that must be followed and met by school districts when making a change in their organizational structure. School superintendents and boards of education are at the focal point of the entire process and must deal with the intergroup conflict that arises. Hersey and Blanchard (1988, p. 353) indicated the key to managing intergroup conflict "is to establish high-productive, collaborative intergroup relations."

Educational decision making theory, upon which superintendents draw when faced with changing the organizational structure of a school, offers very little help in how to go about establishing collaborative intergroup relations.

**Educational Decision Making: Theory and Practice**

Sharman (1984) outlined four types of decision making processes for educational decisions. The rational decision making process was identified by Sharman as the "ideal" model. The major assumption behind this model was that any number of people working on a problem will arrive at the same solution if they use the same inputs. The seven step process lends itself to analysis of each step: (a) Identify or recognize the problem; (b) Describe, analyze, and evaluate the problem; (c) Collect information pertinent to the problem; (d) Identify alternatives for action; (e) Evaluate alternatives; (f) Select the preferred alternative and implement
it; and (g) Evaluate the decision. The second process Sharman entitled the modified rational decision making process. Sharman identified this process as the one most commonly used in educational settings. The process begins with very little time and effort spent identifying and analyzing a problem, which is not clearly defined, before the decision makers jump into the solution phase. In this process decisions are made based on the previous experience and perceptions of those involved. If the decision made is successful then no other action is taken. If the decision is not successful, then the decision makers revert to the data-gathering stage to gather data that supports the solution that had been selected. Sharman's third category was entitled nonroutine decision making. Nonroutine decisions were identified as being complex, high risk, and occurring infrequently. Further, the decisions cannot be made by simply referring to a policy manual and usually require time and study by those effected. Sharman advocated the use of the seven step rational decision making process when confronted with a nonroutine decision. The fourth category of decisions Sharman defined as routine decisions. These decisions are made routinely by referencing board policy, master contracts, or handbooks.

Filley (1975) offered another sequential decision making process with a stated goal of arriving at consensus decisions. Consensus decisions, according to Filley, are those which are not unacceptable to anyone and the process is characterized by little conflict among
the individual decision makers and little disagreement about the method or process of solving the problem. Integrative Decision Making is a six step process: (a) review and adjustment of relational conditions, (b) review and adjustment of perceptions, (c) review and adjustment of attitudes, (d) problem definition, (e) search for solutions, and (f) concensus decision. Filley stated that the Integrative Decision Making process is particularly useful when a conflict needs to be resolved because decision makers are polarized around several possible solutions. Breaking through the "may way" vs. "your way" attitude toward conflict resolutions is key. The Integrative Decision Making process does this by refocusing the decision makers' attention from their own solution to the goals or motives of the decision makers. Solutions are then sought which enable both sides of the conflict to feel their needs have been met.

Saphier, Bigda-Peyton, and Pierson (1989) also advocated a sequential decision making process. The authors stated the process will foster an attitude of acceptance by those involved. The first phase of the decision-making process was entitled planning: (a) state the issue, (b) acknowledge discretion to take action or not take action, (c) state who will make the preliminary decisions, (d) state who will make the final decision, and (e) state the values to be upheld in the decision. The second phase of the process was entitled deciding: (f) check out the consequences of the decision, (g) involve all who will be affected by the decision, (h) establish
timelines for deciding and implementing the decision, (i) decide, and (j) determine how and when evaluation will be done.

Implementation was identified as the last phase: (k) communicate reasons for the decisions, and (l) monitor and support the day-to-day implementation of the decision.

The sequential decision making processes, as identified above, have been effective for many types of decisions. These processes, however, have been found lacking when a significant change in a schools’ organizational structure is faced. The involvement of stakeholders in the decision making process is critical. Educational decision making theory does not address this need to any significant degree. Casburn (1976) summarizes the problem:

The dilemma for administrators is operating under this institutionalized structure with a growing need for personal involvement at every level. No other public agency or private enterprise can compare with the public school for cutting across the entire spectrum of social strata. (p. 62)

Likert and Likert (1976, p. 4) expressed the same view, "People are enthused about being involved in decisions, but the enthusiasm changes to frustration, bitterness, anger, and aggressive behavior when their successive attempts to be involved in decisions important to them are unsuccessful." Blake, Mouton, and Sheperd (1964) identified this type of decision making as "high stakes." Stakeholders in the decision do not believe agreement is possible and resort to win-lose confrontations and power struggles. "People will more than likely persist in using methods which are not
particularly effective just because they have used them before" (Blake, Mouton, & Sheperd, 1964, p. 124).

To deal with the problems associated with a sequential decision making process innovative tools and procedures derived from systems analysts have been advocated for educational decision makers (Knezevich, 1984). Administrators, Knezevich asserted, have limited competence in clarifying issues, compiling essential data, utilizing sophisticated procedures for the comparison and analysis of alternatives, and have also been confronted by time limits and budget constraints.

Even the simpler of the mathematical or qualitative approaches to the improvement of decision making are relatively uncommon in educational administration. There continues to be an over reliance on the subjective opinions and judgments of the educational decision makers even in situations where the data and quantitative analysis techniques are available and have much to offer. (Knezevich, 1984, p. 46)

Some authors, however, have expressed doubts about the viability of innovative decision making techniques in educational settings. Sharman (1984, p. 25) declared that schools do not have the requisite "specialized personnel or complex computer simulations," necessary to participate in this type of decision making.

There are very few studies that have analyzed decision making in school districts forced to make changes in their organizational structure. Bozza (1985) conducted a study of four school districts in the state of New Jersey which closed elementary attendance centers due to declining enrollment. The study was designed to investigate the "incidence and intensity of conflict in school districts which
closed schools due to declining enrollment and to develop a model for action for board members and school administrators in the school closing process" (Bozza, 1985, p. 6). This was accomplished by the use of a theoretical model which suggested the interaction between school board member/community leaders and the school system’s capacity for handling demands were related to the frequency and magnitude of conflict in a community which closed an elementary attendance center. Bozza surveyed community leaders, school board members, and chief school administrators to determine the political role of these groups during the school closing process. The study found minimal degrees of conflict in school districts with a "greater capacity for ordering, reducing, or regulating demands concerning the school closing" (Bozza, 1985, p. 141). The two school districts which had minimal conflicts employed a better system for processing community demands for interaction with the board of education and the chief administrator of the school district. Bozza recommended the establishment of citizens advisory committees to increase the linkages between the community and the school system and reduce conflict when an attendance center must be closed.

Establishing citizens advisory committees to improve communication and reduce conflict is a good idea. In fact, the state of Iowa requires school districts to employ this technique when making a change in their organizational structure. This requirement, however, does not address the methods by which
superintendents and boards of education can involve committee members in the decision making process. Innovative decision making techniques referenced by Knezevich (1984) are designed to involve the community and reduce intergroup conflict.

**Summary**

The struggle over the appropriate organizational structure for our public high schools has been unyielding for the past 150 years. The state of Iowa is a reflection of the confrontations that have occurred in the nation not only today, but over time. The review of literature indicates two remarkable characteristics of the issue.

The opposing factions have been extremely monolithic whenever and wherever the issue of appropriate school size has been addressed. The professional education establishment has stood by the "one best system" philosophy and the proponents of small/rural schools have clung to their schools to give them a sense of power and control over their lives. Second, both sides have worked more from a position of emotion rather than evidence. Dunne (1981, p. 326), speaking of the conflict between PURE and the Iowa Department of Education remarked, "Evidence, on both sides, is used less as a means of testing hypotheses than as a bludgeon to keep an enemy at bay."

The decision making processes employed by school districts attempting to change their organizational structure have not eased the turmoil. Instead, the processes have worked only to inflame the emotions and steadfastness of the factions involved. Innovative
decision making techniques that include all stakeholders in consensus building activities must be employed.

One piece of evidence is crystal clear. When a community confronts the issue of selecting an appropriate organizational structure for its school an emotional battle ensues. When the battle is over, the scars remain. Innovative decision making processes are necessary that enable communities to make a change in the organizational structure of their school without the emotional battle or the resultant scars.
CHAPTER III
METHODOLOGY

This chapter presents a review of the Nominal Group Technique and Interpretive Structural Modeling processes. Further, specific demographic information relevant to the participant school districts is presented, documenting the need for these districts to seek a change in their organizational structure. The chapter concludes with a description of the procedures used in the study.

Instrumentation

Introduction

The fields of individual and group decision making have been found useful when analyzing complex societal issues. These issues are routinely termed large scale (for example international peace keeping), or small scale (improving education in a small school). Complex issues, or problems, involve multiple interactions and feedback among those involved (stakeholders). Moreover, social, economic, political, and emotional factors are highly intertwined, and any proposed solution changes the stakeholders' social system in complex ways (Warfield, 1989). When viewing Iowa's small/rural schools at the time of the study, it was readily apparent the issues were easily defined as a small scale societal problem.

Three concepts have been found to be at the focal point when working toward the resolution of complex problems. One, individual judgments need to be combined to arrive at decisions that cannot be made by an individual (Delbecq, Van de Ven, & Gustafson, 1986).
School districts are comprised of individual board members, administrators, teachers, parents, students, and patrons, who are all stakeholders in their school system. Any decision about a school district must be made by a group. Two, participants in the "problem" have different perspectives and values and are a part of the situation (Warfield, 1976). Differing value structures, religious backgrounds, ethnic heritages, and the like, are represented in each community. The school brings these varying viewpoints together, and when a change is made in the school, the varying philosophies of the community members are brought to the surface. Three, participants in the "problem" have their own picture (mental image) of the problem and its proper solution (Warfield, 1976). Because societal problems are complex and ill-defined, stakeholders often consider themselves "experts," knowing the cause(s) of the problem and the proper solution(s).

When attempting to solve complex problems, or to answer research questions about complex problems, it is reasonable to expect that the proposed solution(s) to the problem (or research findings), will be more acceptable to the stakeholders if they have participated in the decision-making process. This is particularly true when the research has political implications. Working with small/rural schools to identify their most important criteria when making a decision about their future organizational structure is certainly political in nature. Moore (1987) summarized the findings of researchers on the usefulness of research:
Research on knowledge and research utilization has found that a critical factor in the usefulness and use of research is decision-maker involvement in the research process, which can only occur if there is communication among decision makers and researchers. (p. 16)

The group setting is an excellent context for such communication; where ill-defined problems can be addressed by "pooled intelligence" (Olsen, 1982). Moreover, quantitative research methods often are not suitable to address complex problems, as variables of human behavior are not clearly defined. Quantitative research assumes that the clearer the variable the more easily it is measured/quantified, but as the problems become increasingly complex, and therefore ill-defined, quantification becomes less useful (Moore, 1987).

The Nominal Group Technique and Interpretive Structural Model employed in this study are two validated group techniques found to be useful when analyzing complex problems. To understand more clearly the complex problem of choosing an alternative organizational structure for a small/rural school these techniques were used to: (a) identify the substantive elements of the issue without the emotional and political influences so common in group decision making, and (b) identify and structure the relationships between the identified elements (Warfield, 1976).

Nominal Group Technique (NGT)

The Nominal Group Technique (Delbecq, Van de Ven, & Gustafson, 1986), was developed in 1968 to overcome many of the barriers which normally occur when groups attempt to define problems and explore
solutions. The process was designed to encourage equal participation of group members by neutralizing those individuals with strong personalities who typically dominate small group discussions. The characteristics of a complex problem that needs to exist for the Nominal Group Technique to be effective were identified as, "the lack of agreement or incomplete state of knowledge concerning either the nature of the problem or the components which must be included in a successful solution" (Delbecq, Van de Ven, & Gustafson, 1986, p. 5). The issues surrounding the selection of an alternative educational structure for a small/rural school district certainly contain these characteristics.

The Nominal Group Technique was designed as a six step process:

1) Silent generation of ideas in writing: The first step is to have group members respond to a pre-designed question silently and in writing. This first step is the key step in the NGT process. Silently generating key ideas provides group members adequate time for thinking and reflection, facilitates social cohesiveness by allowing group members to observe other members of the group working hard, avoids interruptions, avoids undue focusing on a particular idea, allows for a sufficient time for mental search and recall, avoids competition and status pressures, allows the group to remain problem-centered, and avoids the choosing among ideas prematurely. It is critical in this first step that the facilitator resist nonprocess clarifications, and sanction individuals who disrupt the silent independent activity. The facilitator must be very cautious not to lead the group toward his or her own interpretation of the nominal question and thus bias the response of the participants.

2) Round-robin recording of ideas: The goal of step two is an accurate list of ideas generated by step one, recorded in brief words or phrases on a flip chart in front of the entire group. The facilitator asks each individual in turn to provide one response at a time to ensure: (a) equal participation in the presentation of ideas—which increases group creativity; (b) an increase in problem-mindedness; (c) depersonalization—which separates ideas from
personalities; (d) an increase in the ability to deal with a larger number of ideas; (e) tolerance of conflicting ideas; (f) encouragement of hitchhiking (piggy-backing on another group members idea) and allowing for the consideration of conflicting ideas without pressure; and (g) the provision of a written record and guide. With the ideas in writing, individuals are better able to separate them from the personality or position of the individual who contributes the idea. Moreover, the written list is an important early group reward. Group members are impressed with the array of ideas generated by the group, the amount of overlap of ideas provided areas of agreement and consensus, the differentiated contributions of individual group members, and there is protection against premature focus on selected ideas or over-simplification of the problem.

3) Serial discussion for clarification: Discussing each item in turn enables the group to avoid focusing unduly on any particular idea or subset of ideas, the opportunity for the clarification and elimination of misunderstanding, the opportunity to provide the logic behind arguments and disagreements, and to record the differences of opinion without undue argumentation. The purpose of serial discussion is to enhance clarification while minimizing the influence of the verbal prominence or status of some group members. The role of the facilitator in this step is to allow differing points of view to be aired, but not to resolve differences of opinion. Differences of opinion will be recorded during the voting procedure.

4) Preliminary vote on item importance: Through serial discussion group members will come to understand the meaning of each item, the logic behind each item, and the arguments for and against the importance of individual items. To increase the judgmental accuracy of group members and to reflect true group preference the following steps are required: (a) have individual members of the group make independent judgments, (b) express these individual judgments mathematically by rank-ordering each item, and (c) use the mean value of the independent judgments as the group's decision.

5) Discussion of the preliminary vote: This very brief step is included to allow group members to examine any inconsistent voting patterns or discuss items which are perceived as having received too many or too few votes. For example, a single item may receive the highest ranking by several group members and the lowest ranking by other members of the group. Discussing an item with split votes is important to ensure differences concerning the item are not caused by unequal information, misinformation, or misunderstanding.
6) Final vote: The final rating of the items combines individual judgments into a group decision, provides a sense of closure and accomplishment, and documents the group judgment. (Delbecq, Van de Ven, & Gustafson, 1986, p. 44-66)

Delbecq, Van de Ven, and Gustafson (1986) identified the characteristics of the Nominal Group Technique which facilitate the decision-making process when the prescribed process steps are followed:

1) Low variability among groups in member and leader behavior leads to consistency in decision making.
2) A balanced concern for social-emotional group maintenance roles and performance of task-instrumental roles offers both social reinforcement and task accomplishment reward to group members.
3) The silent independent generation of ideas, followed by further thought and listening during the round-robin procedure, results in a high quantity of ideas.
4) Search behavior is proactive, characterized by extended periods in generating and clarifying alternative dimensions of the problem, tendencies for high task-centered group effort, and the generation of new social and task-related knowledge.
5) The structured process forces equality of participation among members in generating information about the problem.
6) NGT meetings tend to conclude with a perceived sense of closure, accomplishment, and interest in future phases of problem solving. (p. 33)

Ulschak, Nathanson, and Gillan (1981) confirmed the utility of the Nominal Group Technique.

1) The technique can be used with groups of varying backgrounds, cultures, education, or work roles who share a common problem or goal.
2) NGT can be used in groups where participants do not have previous training in group process or communication skills.
3) The highly structured process is a quick method of bringing people together to approach a common task.
4) NGT promotes the generation of many ideas surrounding an issue.
5) NGT allows for maximum and equal participation of all group members, encouraging input from many areas of expertise.
6) The structure of NGT makes it a relatively easy process to run.

7) NGT allows the group to reach consensus in only about two or two and one half hours. (p. 69)

Moore (1987) agreed with Ulschak, Nathanson, and Gillan as well as Delbecq, Van de Ven, and Gustafson. The Nominal Group Technique was appropriately designed to circumvent factors such as verbal aggressiveness and status that have a negative impact on group processes, generates more alternatives than a traditional interacting group, and promotes group effectiveness, even when group members are not familiar with each other. The Nominal Group Technique "can improve a group's productivity, eliminate confusion, promote appreciation of the realities that need to be considered by the group, inventing alternatives, using time wisely, and circumventing many of the problems inherent in group activity" (Moore, 1987, p. 19).

Mahler (1987) conducted a meta-analysis of three purported advantages of the Nominal Group Technique. Delbecq, Van de Ven, and Gustafson (1986) stated that the Nominal Group Technique was designed to overcome many of the problems associated with interactive group techniques because it will do a better job of generating innovative alternatives, there will be greater participation and commitment among group members, and the technique will provide for greater consensus building. Mahler (1987) concluded, "... evidence for the first and most commonly cited claim for NGT is relatively well established, research on the other claimed advantages has mixed results" (p. 338).
The Nominal Group Technique, developed to minimize the process losses of the interacting method of group decision making, has been used in a wide variety of settings. NGT used by itself, or with other techniques, has successfully identified the dimensions of a problem. A few of the areas in which NGT has been used include adult and continuing education, vocational education, identification of job stressors in elementary educators, and in curriculum development. Shifflett (1984) conducted a study to test a modification of the Nominal Group Technique to improve its utility for school administrators. Because school administrators face many time constraints, time necessary for their own duties as well as limited access to teachers, Shifflett modified the NGT process to be conducted in two sessions on two consecutive days. Her study found that the NGT format can be divided successfully and without violating the reliability of the original format and can be successfully used by school administrators who have limited time for faculty meetings.

Interpretive Structural Model (ISM)

To analyze the relationships among the elements of an issue identified by using the Nominal Group Technique, the Interpretive Structural Modeling technique (Thissen, Gage, & Warfield, 1980) was used. Eggers (1984) defined Interpretive Structural Modeling as a systematic and logical methodology for understanding a complex, multi-element problem or issue by breaking the situation into its component parts and then relating the component parts by building
a visual model. Moore (1987) identified Interpretive Structural Modeling as a method for identifying and summarizing relationships among specific items that define an issue or problem and ISM as a means by which a group can impose order on the complexity of those items. Thissen, Gage, and Warfield (1980) simply defined the process as an individual or group approach to structuring sets of elements, such as objectives, goals, obstacles, or activities, and Waller (1975) defined ISM as a methodology designed to assist humans in confrontations with complexity. Looking at each word individually, Moore (1987) provided a broader definition of Interpretive Structural Modeling:

Interpretive—in that the group's judgment decides whether and how items are related; structural—in that the overall structure is extracted from the complex set of items on the basis of the relationships; modeling—in that the specific relationships and overall structure are portrayed in graphic form. (p. 11)

The Interpretive Structural Model process designed by Thissen, Gage, and Warfield (1980) is a six step process:

1) Generate an element set from the perceived reality of the group members. (An element is defined as a 'piece' of the problem). This step is accomplished by the use of the Nominal Group Technique. For example, NGT could be used to identify job-related stressors of elementary teachers.

2) Select an appropriate way to relate pairs of elements from the set. This is accomplished by asking a specific question about how two elements are connected or related. The relationship among the elements must be transitive. For example, if element A is more important than element B and element B is more important than element C, then one knows automatically element A is more important than element C.

3) Group members are asked to determine the existence or non-existence of the relation between every pair of elements in the element set.
4) After the existence or non-existence of the relation between each pair of elements has been determined, the computer is used to create a hierarchical structuring algorithm to identify and order different levels in the set of elements. The computer will then produce a map of the structural model. A map is a visual representation of the structural relationships among the elements (i.e., interpretive structural model or relation map).

If the structuring of the elements is done by the group facilitator the related elements will be placed on a grid and the model will be extracted from the grid. For example, a problem with nine elements would require an eighty-one box grid. The facilitator fills in the grid based on answers from group members concerning the chosen relation and the elements. If the relation is "contributes to," for instance, the facilitator will ask: Does A contribute to B? Does A contribute to C? Does A contribute to D? This continues for all elements. The grid boxes are filled with a one for a yes answer and a zero for a no answer. After completion, a second grid can be made by rearranging the elements so that those with the most ones (yesses) are at the bottom of the list of elements and moving up to those elements with fewer and fewer ones. After completion of the second grid, the facilitator can create a map by placing the element receiving the most ones as the first item and continuing in order until the element with the fewest ones is the last item.

5) Review the model to determine if there are identified inconsistencies with the group's perception. It is possible, during this step, to add elements or define elements in another way through discussion with group members.

6) Prepare the final structural model. Interpretation of the model is made by analyzing the structure by revealing how the parts relate to each other and to the whole in order to aid decision making. (Thissen, Gage, & Warfield, 1980, p. 137)

In addition to producing a map of the structural model, Interpretive Structural Modeling has been found to foster greater communication and consensus among group members which will lead to improved decision making. Thissen, Gage, and Warfield (1980) identified the typical results of the ISM process as a common understanding of the issue among group members and improved
communication among the participants who have participated in a common experience. Warfield (1989) expanded this concept by noting that the debate on each question posed to the group will draw out differences among group members without "leading to protracted bickering" (p. 347). Moore (1987) confirmed Warfield's assertion that ISM improves communication among group members and leads to a better understanding of the issue under consideration.

Linking the techniques of NGT and ISM produces a "power" that will be greater than if each technique were implemented by itself. The word power refers to what group members learn about the elements discussed during both processes. Generally, people want to work collectively to solve problems, but really do not know how. NGT and ISM, used collectively, will capitalize on this motivation and offer an opportunity for group members to view the same variables from differing perspectives and create a commitment to solving the problem and working cooperatively (Moore, 1987).

Applications of ISM have been used in a variety of disciplines where a complex problem existed. Educational systems, economic development, human service systems, management in the United States Department of Defense, and quality control of an industrial product are examples. Specific applications in education have included departmental planning for the Department of Communication at George Mason University, departmental planning for the Systems Science Department at City University in London, designing a mathematics curriculum for computer science, and designing a policy of shared
governance for school districts in the state of Pennsylvania (Warfield, Unpublished manuscript).

It is essential that several appropriate conditions exist to ensure the validity of an ISM process. A complex problem confronted by a group of stakeholders can be more easily analyzed by understanding the structure of a set of elements that are related to the problem, but a hierarchy of the elements is needed for the analysis. In addition, the problem has created a need for a focal point of the group's discussions; it is also necessary to communicate and discuss the stakeholders perception of the structure of the problem. Other validity checks include the leadership of the group being facilitative rather than issue-oriented. And as previously mentioned, an opportunity must also exist for the participants to amend the structural model. In terms of validity Thissen, Gage, and Warfield (1980, p. 12) stated, "The soundest indication of validity is the post-use confidence that policy makers and decision makers express in the process and views concerning usefulness."

Participants

The superintendents of two northeast Iowa school districts were initially contacted by telephone and given a brief overview of the study. Subsequently, a meeting was scheduled with each to further delineate procedures, timelines, and expected results. A formal written proposal was submitted by each superintendent (Appendix A) to their respective boards of education for final
approval. Both boards of education formally agreed to participate in the study.

Demographic Information

Data are presented which characterize the need for small/rural schools to make critical decisions for their respective communities in an effort to change the present organizational structure of their school system.

School District A

School district A is located in Northeast Iowa approximately 25 miles east of school district B. District A was invited to participate in the study because of the researcher's familiarity with the superintendent of schools, the school district, and also the district's close proximity to the University of Northern Iowa. School districts contiguous to school district B ranged in K-12 enrollment from 551 to over 5,000 students for the 1990-91 school year. In sharp contrast to school district B, district A was bounded by only two small/rural schools. Recognizing the need to make a change from the present organizational structure school district A's board of education, during the fall of 1989, contracted two consultants from the University of Northern Iowa to study the school district and provide recommendations.

The K-12 enrollment in district A for the 1989-90 school year was 338. During the past four years the K-12 enrollment decreased 60 students, from a high of 398 in 1986-87. Enrollment projections at the time of the study indicated the trend of decreasing student
population would continue in the immediate future. The 1990-91 enrollment was expected to be 328 students, a decline of 10 students from the 1989-90 school year. The high school enrollment numbers were also declining. Enrollment during the 1989-90 school year was 112 students and the projection for the 1990-91 school year was 102.

The high school in district A offered 69 different courses for its students. District A's class size dilemma was slightly worse than that of district B as a total of 29 different courses enrolled fewer than 10 students; one course, advanced computers, enrolled only a single student. District A was in the third year of an extensive sharing program with a contiguous school district. At the time of the study, district A's students attended a neighboring district for vocational agriculture I, II, III, and IV, ecology, general mathematics, woods, and Spanish III and IV. In addition, the neighboring district's students were bused to district A for world geography, anatomy, senior mathematics, power mechanics, and home economics I. This two-way sharing arrangement had been continued for the 1990-91 school year with approximately 25 district A students attending classes in the neighboring district and approximately twenty-seven neighboring district students attending classes in district A.

The oldest portion of the district's facility, which housed the bulk of the high school, was built in 1917. The gymnasium, a Works Project Administration project, was built in 1938. A lunchroom
facility was added in 1961, and the most recent addition was constructed in 1972, which included an industrial arts facility and an elementary classroom wing. Classroom space which housed the mathematics, social studies, and language arts departments was in good condition. Similarly, the specialized instructional areas of industrial arts, home economics, physical education, instrumental music, and vocal music were characterized as adequate to good. However, the library facility, science rooms, and the business education room were in need of considerable improvement. The science area, for example, contained no laboratory. The district consultants upon completion of their study stated, "Specifically-certain specialized facilities must be modified and upgraded if a quality 9-12 program is to be realized. The continual deficiencies in these areas unquestionably impinge negatively on program effectiveness and quality" (Albrecht & Decker, 1989, p. 28). The quality of the facility was a key variable for school district A as it faced a decision about the organizational structure of its school district.

School district A displayed another very common characteristic of small/rural schools in the state of Iowa, namely a very weak financial condition. A weakened farm economy during the early and mid 1980s caused a $6.5 million reduction in assessed valuation. The majority of the loss, $4.3 million, came between the 1978-88 and 1988-89 school year. Correspondingly, the tax rate increased 17.21% during this time and the percentage of general fund dollars received in state aid rose 7% from the 1988-89 school year to the
1989-90 year. Also during the 1989-90 school year, the district received 1.5% in new money, the smallest increase in three years. Teachers salaries were projected to continue to rise in excess of new money. In an effort to cut administrative costs the board of education began sharing superintendent services with a neighboring school district during the 1987-88 school year. In addition to the sharing of students and an administrator, the district also shared two vocational education instructors. A vocational agriculture instructor and an industrial arts instructor were employed half-time by each district. As with the shared superintendent, additional state aid dollars were generated for both districts by this arrangement. The board of education annually voted to continue with the 21.5 cent site levy, and in 1981-82 district patrons voted to add the 67.5 cent school house levy to help alleviate the financial strain on the general fund. However, additional dollars were anticipated to accomplish future needs since budget projections indicated, with continued declining enrollment, the 1993-94 budget would lose $45,000 in comparison to the 1989-90 budget.

Teacher load was not a problem in school district A, but retaining a quality faculty was tenuous. Operating on a seven-period school day, the common teaching load was five contact periods and one planning period. The 17 junior and senior high teachers averaged 10.5 years of experience with 8.2 years of that experience being in the district. During the 1988-89 school year
only one instructor taught out of his/her major area of preparation, a physical education major teaching 7th and 8th grade science and math.

Participation by the student body in extra-curricular activities was excellent. Football, volleyball, boys' and girls' basketball, boys' and girls' track, baseball, softball, cross country, instrumental music and vocal music were offered in the district. Six boys participated in a shared wrestling program with a neighboring school district. The athletic program was very important to the patrons of the district, and a key variable when changes in the organizational structure of the school were discussed. At the time of the study the district did not offer students any opportunity to participate in Mock Trial, Quiz Bowl, or Academic Decathlon.

During the 1989-90 school year all state standards for accreditation were being met by the district. The vocational education and foreign language standards, typically two of the most difficult for small/rural schools in the state to meet, were successfully accomplished through the sharing arrangement with the neighboring district.

School district A displayed those characteristics that made it necessary for the board of education, administrative team, and patrons of the district to consider alternatives for the organizational structure of the school. The district, at the time of the study, was in compliance with state standards and was meeting its financial obligations. Financial projections for the district
indicated this would not continue indefinitely. District A was rapidly approaching the point where it could not afford to offer its students a comprehensive high school education.

School District B

This district is also located in the northeastern quadrant of the state. The district was invited to participate in the study because of the researchers familiarity with the superintendent of schools, knowledge of the school district itself, and the district's proximity to the University of Northern Iowa at Cedar Falls. School district A is surrounded by five school districts that range in kindergarten through twelfth grade student enrollment from 233 to 545. By definition, these districts are considered small/rural.

Currently, school district B enrolls 399 students in kindergarten through twelfth grades (K-12). For the past five years the enrollment has declined from a high of 435 in the 1987-88 school year. Administrators projected another slight decline in enrollment for the 1990-91 school year. The need for significant decisions regarding a change in organizational structure in the high school was evident. From a high school population in 1987-88 of 132, the high school enrollment at the time of the study was 118. Due to a small senior class, the enrollment was projected to increase to approximately 129 students for the 1990-91 school year.

Two of the most critical issues for small/rural schools attempting to offer a comprehensive high school curriculum are
the number of high school courses offered and the total number of
students in each class. Typically, upper-level academic courses
and vocational education courses suffer from very small enrollments.
In school district B, 61 different courses were offered, with 22
courses enrolling 10 or fewer students. During the study the school
district was sending students to a neighboring district for
automotives, general mathematics I, and general mathematics II, while
students from the neighboring district attended Spanish III and IV
in school district B. This sharing arrangement, while alleviating
some of the problems associated with course offerings, still left
the district with several very small classes.

The main building, built in 1917, housed the majority of the
junior high and high school classrooms. A gymnasium and two story
classroom additions were built in 1950, a one story elementary
addition was constructed in 1956, a vocational wing was added in
1967, and a 1974 addition included a lunchroom facility, kitchen,
science laboratory, and offices. The general condition of the
complex, excluding the 1974 addition, was in need of considerable
upkeep and repair. The two most critical areas in the academic
portion of the school were the chemistry/physics laboratory and
the business education facility. Both were badly in need of major
renovation and new equipment. The elementary classrooms were
adequate for a lack of storage. However, furniture in several of
the classrooms was in need of replacement. The elementary and
secondary media centers had adequate floor space, but additional
books and other media supplies were needed. The best classroom space in the high school portion of the building housed the vocal and instrumental music programs. The district superintendent rated the entire school facility as one that would not exceed the 50th percentile when compared to facilities in other school districts, and one that would not cause people living outside the district to enroll their children.

School district B's financial condition has weakened considerably during the last several years. The most notable indicator was the decrease in assessed valuation of the district. For the 1985-86 school year, the district's assessed valuation was $85.6 million, declining to $72.2 million for the 1988-89 school year. Correspondingly, the tax rate increased from approximately 9.1% to 9.8% during the same four year time period, and the amount of state aid received rose from $495,000 to $710,000. Finally, the total general fund budget only increased approximately $150,000 from the 1985-86 school year to the 1988-89 school year, and the school house fund decreased from $79,000 to $43,000. School district patrons voted passage of the 67.5 cent school house levy to help maintain their facilities and offer a measure of financial relief to the general fund. In an effort to stem the rising financial constraints, the board of education, in addition to the sharing arrangements previously mentioned, began sharing a superintendent with a neighboring school district during the 1988-89 school year. Additionally, the board took steps to reduce 1.5 teaching positions
for the 1990-91 school year, and increased the sharing of high school course offerings with the neighboring district. However, the superintendent indicated the budget deficit to be nearly $200,000 at the conclusion of the 1990-91 school year.

All junior and senior high school instructors were assigned seven periods of student contact during an eight period day. Most teachers taught six classes, supervised a study hall, and were given one preparation period. Except for three faculty members, all were teaching in their major areas. An elementary-certified teacher taught junior high math and reading, an art-certified teacher taught seventh grade reading, and a business education-certified teacher taught junior high science and eighth grade English.

The activities program consisted of football, volleyball, boys' and girls' basketball, boys' and girls' track, baseball, softball, vocal and instrumental music, speech, drama, and Future Farmers of America. Some difficulties were being faced by the district in continuing to offer these programs. During the 1988-89 school year a director for the fall play could not be found. To ensure the continuation of this activity, the responsibility for production of the school play was transferred to the drama class. This eliminated the need for most out-of-school rehearsals, but it also restricted participation to those enrolled in the class. Also, due to staffing problems in boys' track, a sharing arrangement for both boys' and girls' track with a neighboring school district began during the spring of the 1989-90 school year. Additional
athletic sharing included two junior high students who wrestled with another school district's team, two seniors who wrestled in another program, and three students who participated in a third district's tennis program. At the time of the study, school district B's students did not have the opportunity to participate in more academically oriented activities such as Mock Trial, Quiz Bowl, or Academic Decathlon.

During November of 1989 a Department of Education Consultant, from the Bureau of Administration and Accreditation, conducted an annual accreditation review of school district B. The consultant identified fifteen state standards that were either partially or entirely unfulfilled. These included such items as the establishment of a district wide needs assessment, the implementation of a school health services program, the expansion of the TAG program, the development of an at-risk plan, and expansion of the guidance program to include the elementary grades.

School district B, as evidenced by the characteristics above, needed to make a decision about its organizational structure. The patrons of the district were rapidly approaching the point where they no longer would be able to provide a comprehensive education for their high school students due to financial restrictions, lack of student numbers, and the resultant inability to meet state of Iowa accreditation standards.
Procedures

The facilitator for the investigation was Dr. Donna Thompson, Associate Professor, School of Health, Physical Education, and Leisure Services, University of Northern Iowa. Dr. Thompson is a trained facilitator and served as facilitator for both the Nominal Group Technique and the Interpretive Structural Model processes. The principal researcher observed the entire process, acting as a recorder for the voting procedures and made anecdotal records of significant developments that occurred during the process. In addition, Dr. William Wood, Associate Professor, School of Management, University of Northern Iowa, who received his training in the Interpretive Structural Modeling process from Dr. John Warfield at George Mason University, Fairfax, Virginia, provided assistance in the interpretation of the completed Interpretive Structural Model.

The participant school districts agreed to complete the Nominal Group Technique and the Interpretive Structural Model during a one-week period. Members of the board of education, administrative team, and selected members of each school district's citizens advisory committee formed the three NGT groups. (Each school district in the state of Iowa is required under Iowa Code 280.12 to appoint members of the community to function as an advisory committee to the local board of education.) These three groups represented a cross section of the community who are involved when a decision must be made about a school's organizational structure.
After concluding the Nominal Group Technique process, three members of the advisory committee, two members of the board of education and one member of the administrative team, were asked to participate in the Interpretive Structural Modeling session. Olsen (1982) indicated that for best results not more than eight participants be used. After completion of the Nominal Group Technique, Dr. Thompson combined the criteria generated into one list of sixteen items to be structured.

The Interpretive Structural Model computer program was available on the Harris mainframe at the University of Northern Iowa at the time of the study. Due to technical difficulties the computer was inaccessible by telephone modem, and structuring of the criteria was completed by hand for both school districts. The criteria generated by the Nominal Group Technique was limited to a total of sixteen statements which allowed the Interpretive Structural Modeling group to complete its work in approximately two hours. ISM can be an extremely tiring process, "... most groups will be willing to consider 15 to 20 items. As you move beyond that number, the group must be prepared to expend an unusual amount of time and energy" (Moore, 1987, p. 87). The criteria generated by the ISM process was entered into the ISM program at a later date and a structural model for each district was then prepared by the computer. The computer model was then compared to the model done by hand for similarities and differences (Appendix B).
Two weeks after the conclusion of the Interpretive Structural Modeling process, a questionnaire was sent to the participants. The questionnaire (Appendix C) allowed judgments to be made about the usefulness of the process within school districts that were faced with making a decision about the organizational structure of their school.
CHAPTER IV
PRESENTATION OF DATA

The purpose of this study was to apply the Nominal Group Technique (NGT) and the Interpretive Structural Modeling (ISM) processes within two small/rural Iowa school districts to assess their potential usefulness as analytical tools when a decision about the organizational structure of the school district must be made. The Nominal Group Technique was used with school district patrons, school administrators, and school board members in each district to identify criteria they deemed most important when changing their schools' organizational structure. The Interpretive Structural Modeling process was then used to determine the relationships among the criteria established by each group. A follow-up questionnaire was sent to those who participated in both the NGT and ISM sessions. The data gathered from the Nominal Group Technique, the Interpretive Structural Model, and the follow-up questionnaire are presented in this chapter.

School District A

Guiding Question One

The first question established to guide the study asked, "When selecting an alternative educational structure for their school system, can the criteria determined most important by school district patrons, school administrators, and school board members be identified using the Nominal Group Technique?"
The advisory committee was the first group to work through the NGT process. Ten members of the committee were present; however, one member was unable to complete the entire process. The advisory committee was composed of six men and four women. By occupation the group included a roofing contractor, a school custodian, a secretary for an insurance company, a member of the clergy, an executive of a manufacturing company, two teachers, a teacher aide, and two students. After introductions were made and objectives of the study explained, a pre-designed question was presented to the group. The question, developed by the facilitator of the study, asked, "What are the most important criteria that you see when making a decision about the organizational structure of your school?"

To help clarify appropriate responses examples were provided, such as: length of time children should spend riding a bus to and from school, and faculty members teaching in their major field. The six steps of the NGT process were then followed:

1. Silent generation of ideas in writing: The group was given as much time as needed to generate as many responses as possible to the question. It took 8 minutes for the group members to complete this task.

2. Round-robin recording of ideas: Each individual was asked, in turn, to provide one of his/her responses to the question. These were written on large sheets of paper and taped to the wall so all responses were visible to the entire group. The group provided the following responses to the question:
A. Academics—(Complete offerings)
B. Sharing teachers
C. Provide good facilities and equipment
D. Provide positive environment to build self-esteem/self-image
E. Elementary program should stay in local town
F. Meet state requirements
G. To provide inclusive education for all
H. Transportation considerations (Least amount of busing time)
I. To provide a wide range of electives
J. To maintain your school identity
K. Athletics
L. Class size
M. Students are treated equally from each school (extra curricular activities)
N. Cost
O. Organizational/Administrative Leadership
P. Drug Awareness Issues (Places for help)
Q. Right of district(s) to influence decision (from people to board)
R. Open enrollment
S. Keep school in town
T. Junior high or middle school and high school should be in different locations.
3. Serial discussion for clarification: Each item, in turn, was discussed by the group. Questions were asked by members of the group to help clarify in their minds what each item meant. In several cases items were expanded for better understanding, and two items were eliminated because they were included in another item. The results of the clarification step were:

A. Include college bound, vocational, high school and wide range of electives.

G. Include all levels, developmentally disadvantaged, TAG, and all ages.

H. Include cost. (Initially transportation considerations only involved the time students would spend on the bus. This expanded the item to include all costs associated with transporting students.)

I. Eliminate

X. Eliminate

M. Include athletics. (Equal treatment of students was defined as those students involved in the extra-curricular activity program. This item was expanded so all would know that athletics were included.)

N. Include building and debts. (Cost was not defined when initially added as a criterion. This clarification was added to explain that cost meant the total dollars to remodel an existing building
for a new instructional program, and also the bonded indebtedness of each district.)

0. Include representative. (Organizational/administrative leadership was clarified to mean that each district included in a new organizational structure should be represented administratively.)

4. Preliminary vote on item importance: Members of the group were then asked to independently pick their own top 10 criteria from the 20 that had been generated by the entire group. Group members then voted on each item, by a show of hands, if the item was included in their top 10. The total vote for each criterion was used to determine the top 10 criteria of the entire group.

5. Discussion of preliminary vote: A brief discussion of the results of the preliminary voting was held and no changes were made.

6. Final vote: Group members completed the NGT process by rank ordering the 10 selected criteria. A value of 1 was assigned to the most important criterion and a value of 10 to the least important. Each individual completed his/her own rank ordering and then the mean value for each criterion was used to determine the final rank order. The 10 most important criteria, in rank order, as determined by members of the advisory committee were:

1. Academics—complete offerings, college bound, vocational, high school, and wide range of electives.

2. To provide inclusive education for all—all levels, developmentally disadvantaged, TAG, and all ages.
3. Meet state requirements.
4. Provide good facilities and equipment.
5. Provide positive environment to build self-esteem/self-image.
6. Students are treated equally from each school—extra curricular activities including athletics.
7. Cost—A remodeled building and bonded indebtedness.
8. Organizational/administrative leadership—new organizational structure should have administrative representation from each district.
9. Elementary program should stay in local town.
10. Junior high or middle school and high school should be in different locations.

The board of education of school district A was the second group to participate in the Nominal Group Technique. Three members of the five member board were available to participate. All three individuals were male, with one employed as a construction worker, one engaged in farming, and one member an executive with a manufacturing company.

1. Silent generation of ideas in writing: The same procedures were followed and the same predetermined question was used with the board members as the advisory committee. The board members took 8 minutes to complete this step in the process.

2. Round-robin recording of ideas: The responses to the question by the three members of the board of education included:
A. Academics—(Emphasis on secondary)
B. Quality of education
C. Transportation
D. Cost—(Financing)
E. Effect on the community—(Survival of towns)
F. Open enrollment
G. Facilities and equipment
H. Athletics
I. Administration/staffing
J. Enrichment programs (TAG and disabled)
K. Compatibility of communities
L. Division of grades—(Where schools are located)
M. Test scores (Iowa Basic Skills, National).

3. Serial discussion for clarification: Discussion resulted in the following changes:
   A. Include class offerings and K-12. Eliminate emphasis on secondary. (i.e.—curricular program K-12.)
   B. Include compete with others in other areas, college, and vo-tech. (Board members were very concerned that the students graduating from their high school would be able to compete with students from other schools.)
   C. Include cost/time/distance. (All facets of transportation of a new organizational structure were included.)
D. Include taxes. (i.e.—board members were concerned what their tax rate would be in comparison to neighboring districts.)

H. Include concern re: identity. (Board members recognized the importance of successful athletic programs bringing recognition to their community and were concerned about losing their identity if their students went to another community for athletic participation.)

4. Preliminary vote on item importance: Group members were again asked to pick their top 10 criteria. The same voting procedure was used to determine the top 10 criteria of the entire group.

5. Discussion of preliminary vote: A brief discussion of the preliminary vote was again held.

6. Final vote: The top 10 criteria, in rank order, as determined by members of the board of education were:
   1. Quality of education—compete with others, college, and vo-tech.
   3. Facilities and equipment.
   5. Administration/staffing.
   6. Effect on the community—survival of towns.
   8. Test scores—Iowa Basic Skills and national.
8. Test scores—Iowa Basic Skills and national.
9. Enrichment programs—TAG and Disabled.
10. Division of grades—Where schools are located.

The final group to work through the NGT process was the administrative team. The superintendent and secondary principal were available to participate; the elementary principal, however, had a prior commitment and was unable to attend. Both individuals were male.

1. Silent generation of ideas in writing: This group also received as much time as needed to respond in writing to the predetermined question. Four minutes were needed by the administrators to complete this task.

2. Round-robin recording of ideas: The responses to the question were shared in the same manner as the first two groups. The responses of the administrative team were as follows:

   A. Finances
   B. Facilities/supplies
   C. Academic offerings
   D. Program offerings
   E. Teacher load—(Personnel availability)
   F. Community concerns
   G. Competitiveness re: class size.

3. Serial discussion for clarification: The same procedures were again followed. Each item was discussed by the group so all
group members had a common understanding of the meaning of each item. The results of this step were:

A. Include sharing incentives, reorganization incentives, all costs of transportation.

B. Include availability, building structures, and efficient use of.

C. Include state mandates, advanced levels, and varied needs.

D. Include extra curricular.

E. Include certification/qualifications.

F. Include is this what is best for district’s patrons? Do patrons want it? Consider their concerns.

G. Include results of interaction and T/P ratio.

4. Preliminary vote on item importance: Members of the administrative team were asked to independently rank order the seven criteria. Because the group initially identified only seven criteria they were all included in the group's top 10.

5. Discussion of preliminary vote: A brief discussion of the preliminary vote was held and no changes were made.

6. Final vote: The administrative team completed the process by rank ordering the seven identified criteria. The results of the rank order were:

1. Academic offerings—state mandates, advanced levels, and varied needs.
2. Finances—sharing incentives, reorganization incentives, all costs (transportation), and total availability.

3. Facilities/supplies—availability, building structures, and efficient use of.

3. Program offerings—extra curricular.


3. Competitiveness re: class size—results of interaction and T/P ratio.

4. Teacher load—personnel availability and certification/qualifications.

Guiding Question Two

"When selecting an alternative educational structure for their school system, what similarities and differences exist among the criteria determined most important by school district patrons, school administrators, and school board members?" Figure 1 was developed to offer a visual representation of the top 10 criteria as determined by the administrative team, board of education, and advisory committee.

Comparing the rank order of the criteria generated by the three groups reveals few similarities and many differences. "Academics—Complete Offerings" was the criteria that had the most agreement among the three groups, ranked first by the administrative team, second by the board of education, and third by the advisory
Figure 1. School district A: Nominal group technique top 10 criteria.

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Administrative Team</th>
<th>Board of Education</th>
<th>Advisory Committee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academics • Complete Offerings</td>
<td>1</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Inclusive Education For All</td>
<td></td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Meet State Requirements</td>
<td></td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Provide Facilities &amp; Equipment</td>
<td>3</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Positive Environment For Self-Esteem</td>
<td></td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>Students Treated Equally</td>
<td></td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>Cost (Finances)</td>
<td>2</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>Organ/Admin. Leadership</td>
<td></td>
<td></td>
<td>8</td>
</tr>
<tr>
<td>Elementary Program In Local Town</td>
<td>10</td>
<td></td>
<td>9</td>
</tr>
<tr>
<td>J. H./H. S. Different Locations</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Quality of Education</td>
<td>3</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Administration/Staffing</td>
<td>4</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Effect on Community</td>
<td>3</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Athletics</td>
<td>3</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>Test Scores</td>
<td></td>
<td></td>
<td>8</td>
</tr>
<tr>
<td>Enrichment Programs</td>
<td></td>
<td></td>
<td>9</td>
</tr>
<tr>
<td>Competitiveness &amp; Class Size</td>
<td>3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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committee. The only other criteria to have a similar ranking among the three groups was "Provide Facilities and Equipment." The administrative team and board of education ranked this criterion third and the advisory committee determined a rank of fourth. By looking at the other 15 criteria listed on the table it is very apparent that none have a similar rank from all three groups.

Guiding Question Three

"When selecting an alternative educational structure for their school system, can the relationships among the criteria identified as most important by school district patrons, school administrators, and school board members be identified using the Interpretive Structural Model?"

In preparation for the Interpretive Structural Modeling process the facilitator and researcher combined the rank ordered criteria generated by the Nominal Group Technique into a single list of 16 criteria. The combined list of criteria presented to those who participated in the ISM session included:

1. Academics—Comprehensive High School
   Complete Offerings  Wide Range of Electives
   College Bound  High School
   Vocational

2. Educational Opportunities for All
   All levels  Advanced levels
   Developmentally disadvantaged  Varied needs
   TAG  Class offerings
   All ages

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3. Finances
   - Total available dollars
   - Reorganization incentives
   - All costs (transportation)
   - Sharing incentives
   - Taxes
   - Building debts

4. Facilities and Equipment
   - Availability
   - Building structures
   - Efficient use of

5. Meet State Standards

6. Community Concerns
   - Is this what is best for district patrons?
   - Do patrons want it?
   - Consider their concerns (input)

7. Organizational/Administrative Leadership
   - Representative

8. Positive Environment Build Self-Esteem (Self-Image)

9. Extra Curricular Program Offerings

10. Survival of Town

11. Students Have Equal Athletic and Extra Curricular Opportunities

12. Class Size Effect on Competition

13. Athletics Gives Community Identity

14. Certification/Qualification of Teachers
   - Teacher load
   - Personnel availability
15. Test Scores

16. Transportation

\textbf{Cost/time/distance}

Four days after the completion of the Nominal Group Technique the facilitator and researcher met with the six volunteers to conduct the ISM session. Due to circumstances beyond their control the facilitator and researcher were unable to access the U.N.I. mainframe computer with an IBM-PC and telephone modem from school district A. This possibility had been anticipated and the ISM was conducted using a gridwork projected on a screen by an overhead projector. Several weeks following the completion of the field work the results of the ISM session were structured using the ISM computer program at the University of Northern Iowa. The structural map produced and a comparison with the map structured by hand can be found in Appendix B. The Interpretive Structural Modeling process as conducted in school district A follows:

1. Generate an element set from the perceived reality of the group members: This step was accomplished, as explained above, by using the Nominal Group Technique. Members of the advisory committee, board of education, and administrative team were asked to respond to the question, "What are the most important criteria that you use when making a decision about the organizational structure of your school district?"

2. Select an appropriate way to relate pairs of elements from the set: The predetermined relationship used between pairs of
elements was "more important than." The initial question asked participants was, "is criteria number one more important than criteria number two when making a decision about the organizational structure of your school?"

3. Group members were asked to determine the existence or non-existence of the relation "more important than" among every pair of elements (criteria) in the element set: The 16 criteria were then presented to group members with an explanation of how the rank ordered criteria were combined by the facilitator and researcher. The 16 criteria were again clarified, and questions to aid the clarification were answered. During the clarification process the elements "organizational/administrative leadership," "positive environment builds self-esteem," "students have equal athletic and extra-curricular opportunities," "class size effect on competition," and "athletics gives community identity" were discussed. Clarification of "positive environment builds self-esteem" was made by adding "for students and staff," (i.e., a positive environment will lead to positive self-esteem for students and staff). In addition, "class size effect on competition" was clarified to mean the effect of class size on learning. (i.e., the emphasis on class competition was eliminated. The group wanted to focus on the effect of class size on student learning.)

Group members were then asked to vote, by a show of hands, on each pair of elements in the element set. For example, element number one was compared to element number two, "Is a comprehensive
high school more important than educational opportunities for all?"
If the majority responded "yes" a 1 was placed on the grid, if the
majority voted "no" a 0 was placed on the grid (Figure 2). Element
number one was then compared to the other 15 elements. After element
number one was compared to all other elements, element number two
was then compared to the other 15 elements. This process
continued until all 16 elements were compared to every other element
in the element set. In all, 256 decisions were made by the group.

In addition to a structural model produced, ISM has been found
to foster greater communication among group members, promote a
common understanding of the issue, and lead to improved decision
making. During the voting/discussion process observations were
made by the researcher to document the interactions that took place
among group members. Four times there were tie votes taken which
resulted in group members discussing the criteria to add further
clarification. The criteria discussed most frequently included
"state standards," "facilities," "extra-curricular activities,"
"survival of town," "effect on community," and "community concerns."

4. Interpretive Structural Model developed: Initial findings
were presented to group members after the conclusion of step three.

5. Review the model to determine identified inconsistencies
with group perception: The group members had no desire to add or
re-define any of the elements. No changes were made.
**Figure 2.** School district A: ISM voting summary.

```
|                      | Comprehensive H.S. | Ed op all students | Finances | Facilities and Equipment | Meet State Standards | Org/Ad Leadership | Environ. build self-esteem | Extra curric prog offer | Survival of Town | Students - op-ex curr | Class size - effect comp | Athletics gives comm ID | Teacher cert/qualif | Test Scores | Transportation |
|----------------------|-------------------|-------------------|----------|--------------------------|---------------------|-------------------|--------------------------|-----------------------|------------------|----------------------|------------------------|----------------------|----------------|----------------|
| 1 Comprehensive H.S. | X                  | 0                 | 0        | 1                        | 0                   | 1                 | 1                        | 1                     | 1                | 1                    | 1                      | 1                    | 1              | 1             |
| 2 Ed op all students | 1 X                | 1                 | 1        | 1                        | 1                   | 1                 | 1                        | 1                     | 1                | 1                    | 1                      | 1                    | 1              | 1             |
| 3 Finances           | 0 0 X              | 1                 | 1        | 1                        | 1                   | 1                 | 1                        | 1                     | 1                | 1                    | 1                      | 1                    | 1              | 1             |
| 4 Facilities and Equipment | 0 0 X                | 0                 | 1        | 1                        | 1                   | 1                 | 1                        | 1                     | 1                | 1                    | 1                      | 1                    | 1              | 1             |
| 5 Meet State Standards | 0 0 0 0 0 X         | 0                 | 0        | 1                        | 1                   | 1                 | 1                        | 1                     | 1                | 1                    | 1                      | 1                    | 1              | 1             |
| 6 Community Concerns | 0 0 0 0 0 0 X       | 0                 | 0        | 1                        | 1                   | 1                 | 1                        | 1                     | 1                | 1                    | 1                      | 1                    | 1              | 1             |
| 7 Org/Ad Leadership  | 0 0 0 0 0 0 X       | 0                 | 0        | 1                        | 1                   | 1                 | 1                        | 1                     | 1                | 1                    | 1                      | 1                    | 1              | 1             |
| 8 Environ. build self-esteem | 0 0 0 0 0 0 X       | 1                 | 1        | 1                        | 1                   | 1                 | 1                        | 1                     | 1                | 1                    | 1                      | 1                    | 1              | 1             |
| 9 Extra curric prog offer | 0 0 0 0 0 0 0 0 0   | 0                 | 0        | 1                        | 1                   | 1                 | 1                        | 1                     | 1                | 1                    | 1                      | 1                    | 1              | 1             |
| 10 Survival of Town  | 0 0 0 0 0 0 0 0 0 0 0 1 X | 0                 | 0        | 1                        | 1                   | 1                 | 1                        | 1                     | 1                | 1                    | 1                      | 1                    | 1              | 1             |
| 11 Students - op-ex curr | 0 0 0 0 0 0 1 1 0 1 1 X | 1                 | 1        | 1                        | 1                   | 1                 | 1                        | 1                     | 1                | 1                    | 1                      | 1                    | 1              | 1             |
| 12 Class size - effect comp | 0 0 0 0 0 0 1 0 1 1 0 X | 1                 | 1        | 1                        | 1                   | 1                 | 1                        | 1                     | 1                | 1                    | 1                      | 1                    | 1              | 1             |
| 13 Athletics gives comm ID | 0 0 0 0 0 0 0 0 0 0 0 X | 0                 | 0        | 1                        | 1                   | 1                 | 1                        | 1                     | 1                | 1                    | 1                      | 1                    | 1              | 1             |
| 14 Teacher cert/qualif | 0 0 0 0 0 0 0 1 1 0 0 1 X | 1                 | 1        | 1                        | 1                   | 1                 | 1                        | 1                     | 1                | 1                    | 1                      | 1                    | 1              | 1             |
| 15 Test Scores       | 0 0 0 0 0 0 1 1 0 0 0 X | 1                 | 1        | 1                        | 1                   | 1                 | 1                        | 1                     | 1                | 1                    | 1                      | 1                    | 1              | 1             |

Relationship: "More Important Than" 1 = yes 0 = no

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6. Prepare the final structural model: The model visually represents the structural relationships among the elements.

The model is "read" from the top to the bottom (Figure 3). Each level contains an element or elements that were determined, by the group, to be more important than the succeeding level. "Educational opportunities for all" was determined to be more important than "finances" by group members if they were to make a decision about the organizational structure of their school. Similarly, "finances" was determined to be more important than "Academics--comprehensive high school" and "meeting state standards."

The rest of the model is read in the same manner. "Extra curricular program offerings" and "athletics gives community identity" were the least important elements. Elements within the dotted boxes were determined to be of equal importance and are termed cycles. These occurred on levels three, six, seven, ten, and eleven.

To help explain the data generated by the ISM process, in addition to the structural model, the criteria were placed in categories predetermined by the researcher. These categories reflect the major areas which must be considered by a school district when faced with making a decision about the organizational structure of their school.

Local School Policies

11. Students Have Equal Athletic and Extra Curricular Opportunities

9. Extra Curricular Program Offerings

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Figure 3. School district A: ISM structural model.

SCHOOL DISTRICT A MODEL

2 Educational Opportunities for All

3 Finances

1 Academics - Comprehensive High School
5 Meet State Standards

4 Facilities and Equipment

8 Positive Environment Builds Self-esteem

11 Students Have Equal Athletic and Extra-Curricular Opportunities
12 Class Size Effect on Competition

6 Community Concerns
7 Organizational/Administrative Leadership

14 Certification/Qualifications of Teachers

15 Test Scores

10 Survival of Town
16 Transportation

9 Extra Curricular Program Offerings
13 Athletics Gives Community Identity

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7. Organizational/Administrative Leadership

Local Resources
3. Finances
4. Facilities and Equipment
16. Transportation

Classroom Experiences
1. Academics—Comprehensive High School
2. Educational Opportunities for All
8. Positive Environment Builds Self-Esteem
12. Class Size Effect on Competition
14. Certification/Qualifications of Teachers
15. Test Scores

State Mandates
5. Meet State Standards

Local Political Influences
6. Community Concerns
10. Survival of Town
13. Athletics Gives Community Identity

The total number of elements in each category, as well as the relative importance of the elements in each category, was revealing. The category "classroom experiences" contains 6 of the 16 total elements, indicating the importance of these elements to the individuals who participated in the ISM session. However, three of the elements were considered very important and the other three were determined to be of lesser importance. "Local resources" and
"local political influences" also contains elements that ranked relatively high and also relatively low, while the category "local school policies" contains elements that fell fairly close together on the model. Because the categories contain criteria in both the bottom and top half of the ISM model, one would anticipate that group members who participated in the ISM session had little agreement as to the appropriate direction their school district should take when making a decision about its organizational structure.

Guiding Question Four

"When two small/rural school districts select an alternative educational structure for their school, do the criteria deemed most important, and the relationships among those criteria, possess similarities and differences?"

This question is answered by comparing the top and bottom half of the ISM map from each district and by also comparing the criteria in the five predetermined categories. The top half of the ISM map for school district A contains criteria that are philosophical in nature and the most important category for district A was "Classroom experiences." The summary section of Chapter V contains this discussion.

Guiding Question Five

"To what extent, if any, are the Nominal Group Technique and the Interpretive Structural Model useful tools for school districts
to employ when making a decision about the organizational structure of their school?

Approximately two weeks after the conclusion of the NGT and ISM sessions the NGT/ISM questionnaire (See cover letter--Appendix C) was sent to the six individuals who participated in both the NGT and ISM sessions. Three responses were initially received. The questionnaire was sent again approximately two weeks later (See cover letter--Appendix D) and one response was received. A board member from school district A who participated in both the NGT and ISM sessions passed away before the completion of the follow-up questionnaire. One other questionnaire was not returned.

NGT/ISM Questionnaire

The first question asked the respondents if the process allowed group members sufficient opportunity to express their opinions. Two individuals stated they did not have enough time, one individual felt there was sufficient time, and the fourth indicated "pretty much so," but added more time would be beneficial in "a real situation." The second question asked if group members had a better understanding of the issues confronting their school district at the conclusion of the process. All four respondents agreed they did have a better understanding of the issues after completing the process. Two individuals stated their involvement in the process was the first time priorities had been established, another individual felt this was the first time they were aware of many of
The issues, and the last respondent indicated there was a better understanding among various factions on the committee.

The third question asked the respondents if the process fostered improved communication among group members. Two individuals responded that the process did improve communication. One of these individuals stated somewhat "taboo" subjects were discussed openly and also other individuals not associated with the school should have been involved in the process. Of the other two individuals one responded "I think so," but did add those present learned where those "at the meeting stand," and the other individual responded "yes and no," adding group participants had special interests to consider. The fourth question asked the respondents to reflect on the activities and explain if they liked the process. The first respondent liked the group discussions, but thought more people working at the school should have been involved in the process. The second individual expressed a concern of overlap between some of the topic areas. Of the last two individuals, the first liked the opportunity to observe the perspectives and opinions of the other group members and the last respondent liked generating the criteria and then being able to prioritize the criteria.

Questions five and six asked about the usefulness of the NGT and ISM processes for small/rural school districts faced with making a change in their organizational structure. The responses to question five included three "yes," the process would be useful, and one who responded "to a point." This last person felt the
group he/she represented probably would not have a say when an actual decision was made. The responses to question six were also very positive. Three individuals stated "yes" the process would be useful, and the fourth stated "probably so." Improved communication was identified by all four as the reason why they felt the process would be useful for small/rural schools.

The last question asked the respondents to state the most important thing learned from the process. The first individual stated the pluses and minuses of working with all school employees, the second that "kids" were the first priority of the group, the third individual felt the group was more united in providing a quality education for the students than first anticipated, and the last respondent learned the priorities of the group.

The NGT/ISM questionnaire and actual responses for school district A are listed in Appendix E.

School District B

Guiding Question One

"When selecting an alternative educational structure for their school system, can the criteria determined most important by school district patrons, school administrators, and school board members be identified using the Nominal Group Technique?"

The administrative team, composed of the superintendent, secondary principal, and elementary principal, was the first group to complete the NGT process. The same predetermined question used in school district A was also used in school district B. "What are the most important criteria that you see when making a decision
about the organizational structure of your school?" Again, examples such as length of time students spend on buses and the qualifications of the teaching staff, were given to help clarify appropriate responses. The six steps of the Nominal Group Technique were then followed:

1. Silent generation of ideas in writing: The group was given as much time as they needed to generate as many responses as possible to the question. The administrators were finished in five minutes.

2. Round-robin recording of ideas: The administrators, in turn, each provided one response they had written down. These were again written on large sheets of paper and taped to the wall. The following responses were provided by the group:

   A. Curriculum considerations
      Program availability
      Possibilities
   B. Class size(s)
   C. Finances
      Funds
      Budget
      Resources available
   D. Facilities and equipment
      Plus which one meets student needs best
E. Sizes of schools
   re: Athletics
       Music
       Speech
F. Meeting the new standards
G. Transportation
   Costs
H. Teacher preparation re:
   Teaching assignment
I. Schedules
   Common calendars
   Teachers
   Students
J. Timelines
   For reorganization of school district
K. Public's perception of effect on community
L. Divided public community
M. Compatibility of programming
N. What's best for students
O. Board decisions and commitments, elections
P. Compatibility of leadership styles
   Administration
Q. Declining enrollment
R. Short/long range plans
S. Public support on 10% levy?
T. Middle school concept
U. Teacher input/unions
V. Sharing dollars and state incentives
W. Public informational hearings
X. Student information/input
Y. Location of high school
Z. Open enrollment

Effects of?

AA. Sharing committees
   Between districts

3. Serial discussion for clarification: Each item was discussed by members of the group to ensure a common understanding. Because of the large number of items generated, very little overlap existed among the items, which resulted in only minor changes. The results of the clarification included changes to the following:

C. Add new state funding formula

E. The group changed "sizes of schools re: athletics, music, and speech" to "Classification re: athletics." (The group was concerned that a change in organizational structure might result in competition with larger schools.)

F. Add concern about meeting standards and not exceeding standards. (The group was only concerned with meeting the minimum requirements of the state standards, and not with exceeding the standards.)
G. Cost of transportation was clarified to include the group's feeling that this was a problem but not one that would be a deciding factor.

L. The community was divided on whether it was necessary to share programs and also divided over who the sharing would be with if it actually came about.

N. What's best for students was expanded to include "from whose perception." (The group expressed concern about those community members who had no children in school.)

T. Add "Who is allowed to attend the school?" (This addition reflected the group's concern about having a structure with the middle school in one town and the high school at another site, or have the middle school and high school in one building.)

4. Preliminary vote on item importance: Group members were asked to write down their own top 10 criteria. Each item was then voted upon by members of the group. If the item was included in their top 10 the group members voted by raising their hands. The 10 criteria receiving the most votes were the top 10 criteria of the group.

5. Discussion of preliminary vote: A brief discussion of the results of the preliminary voting resulted in no changes.

6. Final vote: The administrative team was then asked to rank order the 10 selected criteria. A value of 1 was assigned to
the most important criteria and a value of 10 to the least important.

Each individual completed his/her own rank ordering and then the mean value for each item was used to determine the final rank order. The 10 most important criteria, according to the administrative team, when selecting an alternative organizational structure for their school district, were:

1. Finances  
   - Funds  
   - Budget  
   - Resources available  
   - New formula (state)

2. Meeting the new standards  
   - Also concern re: exceeding standards

3. Facilities and equipment  
   - Plus which ones meet student needs best

4. Curriculum considerations  
   - Program availability  
   - Possibilities

5. Short/long range plans

6. Timelines  
   - For reorganization of school district

7. Divided public community  
   - re: Where/whether to share

8. Declining enrollment
9. Schedules
   Common calendars
   Teachers
   Students

   Four of the five board members from school district B were the second group available to participate in the Nominal Group Technique activity. All four members were male. Three members of the board of education were farmers, and the fourth individual was employed as an accountant.

   1. Silent generation of ideas in writing: The same procedures as used previously were employed. Eight minutes were required by the board of education to list all possible criteria.

   2. The responses to the NGT question by the board members included:

   A. Quality of personnel
      Whole system
   B. Quality of students produced
   C. Seek district preference re: structure
   D. Finance
   E. Facilities
      Condition of existing
      Needed to improve
   F. State mandates
   G. Strength of administration/administrators
   H. Teacher/student ratio
I. Effect on community
   Effect on businesses
J. Strength of extra-curricular programs
K. Long term community goals
L. Student safety
M. Transportation
   Time
   Cost
N. Financing options
O. Equipment/supply needs
P. Declining enrollment
Q. Ethics
   Board
   Administration
   Teachers
   Parents
R. Balancing needs:
   Teachers/Parents/Students/Community
S. Administrator/Teacher ratio

3. Serial discussion for clarification: The following
   clarifications were made after the discussion of the board members:

   N. Delete this criteria entirely (financing options)
      and add to item D (finance).

   O. Delete this criteria (equipment/supply needs) and
      add to item E (facilities).
P. Protracted discussion, but no changes were made.

4. Preliminary vote on item importance: Group members were asked to pick their top 10 criteria. Voting was done by a show of hands.

5. Discussion of preliminary vote: No changes were made as a result of this discussion.

6. Final vote: The board of education determined their top 10 criteria in rank order. The results were:

1. Quality of personnel
   Whole system
2. Quality of students produced
3. Finance
   Budgeting constraints
   Options
4. State mandates
5. Strength of administration/administrators
6. Effect on community
   Effect on businesses
7. Facilities and Equipment and Supplies
   Condition of existing
   Needed to improve
8. Balancing needs:
   Teachers/Parents/Students/Community
9. Declining enrollment
10. Administrator/teacher ratio
The advisory committee was the final group to participate in the Nominal Group Technique. Six members of the committee were available to participate. This group was composed of two women and four men. By occupation, three of the men were farmers, one a machinist, one of the females participants was a medical technologist and one a homemaker. The basic six steps of the NGT process were followed:

1. Silent generation of ideas in writing: The group was told to take as much time as needed to identify as many criteria as possible. Due to the late arrival of one group member the advisory committee took fifteen minutes to complete this first step.

2. Round-robin recording of ideas: The same procedures were again followed. Group members, in turn, communicated to the entire group one criterion they had written down.

   A. Adequate curriculum to prepare students for work/college
   B. Lack of advanced courses at Junior high level
      More courses available
   C. Effect of town and businesses
      Jobs
   D. Finances
   E. Teacher/student ratio
   F. Are children's best interest being served?
   G. Best instructional staff for dollars
   H. Facilities and equipment
      Building, computers, etc.
I. Transportation
   Distance, Cost

J. Athletics
   Travel
   League
   Ability for student participation

K. Extra-curricular activities other than athletics
   Ability for student participation

L. Ability to adjust staff, as needed

M. Change where there will be minimum effect of enrollment

N. Flexibility of scheduling

O. Decision re: Location of various schools

P. Opportunities for all kids
   Special needs

TAG

3. Serial discussion for clarification: After discussion, no changes were made.

4. Preliminary vote on item importance: Group members independently identified their own top 10 criteria from the 16 generated by the entire group. If the criterion was included in their top 10 the group members voted by raising their hands. The 10 criteria receiving the most votes were the top 10 criteria of the group.

5. Discussion of preliminary vote: No changes were made as a result of the discussion.
6. Final vote: The final rank ordering of the advisory committee's top 10 criteria included:

1. Adequate curriculum to prepare students for work/college
2. Finances
3. Are children's best interest being served?
4. Facilities and equipment
   Building, computers, etc.
   Classrooms
5. Opportunities for all kids
   Special needs
   TAG
6. Decision re: Location of various schools
7. Effect on town and businesses
   Jobs
8. Flexibility of scheduling
9. Athletics
   Travel
   League
   Ability for student participation
10. Extra curricular activities other than athletics
    Ability for student participation

Guiding Question Two

"When selecting an alternative educational structure for their school system, what similarities and differences exist among the criteria determined most important by school district patrons,"
Comparing the criteria from the administrative team, advisory committee and board of education again indicated few similarities and many differences. This is the same pattern that was identified when the NGT criteria were compared from school district A. The criteria "Finances" and "Divided Public Community/Effect on Community" received very similar rankings from all three groups. "Finances" was ranked as the number one criteria by the administrative team, second by the advisory committee and third by the school board. "Divided Public Community/Effect on Community" was ranked seventh by the administrative team, sixth by the board of education, and seventh by the advisory committee. None of the other 18 criteria on the table has a similar ranking among the groups.

**Guiding Question Three**

When selecting an alternative educational structure for their school system, can the relationship among the criteria identified as most important by school district patrons, school administrators, and school board members be identified using the Interpretive Structural Model?" The facilitator and researcher combined the rank ordered criteria generated by the Nominal Group Technique into a single
Figure 4. School district B: Nominal group technique top 10 criteria.

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Administrative Team</th>
<th>Board of Education</th>
<th>Advisory Committee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finances</td>
<td>1</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Meet New Standards</td>
<td>2</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Facilities &amp; Equipment</td>
<td>3</td>
<td>7</td>
<td>4</td>
</tr>
<tr>
<td>Curriculum Considerations</td>
<td>4</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Short/Long Range Plans</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Timelines: For Reorganization</td>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Divided Public Community/Effect on Comm.</td>
<td>7</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Board Decisions, Commitments, Elections</td>
<td>7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Declining Enrollment</td>
<td>8</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Schedules</td>
<td>9</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Quality of Personnel</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Quality of Students Produced</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Strength of Administration</td>
<td></td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>Balancing Needs: T/P/S/C</td>
<td></td>
<td></td>
<td>8</td>
</tr>
<tr>
<td>Administrator/Teacher Ratio</td>
<td></td>
<td></td>
<td>10</td>
</tr>
<tr>
<td>Children's Best Interest</td>
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<td></td>
<td>3</td>
</tr>
<tr>
<td>Opportunities For All Kids</td>
<td></td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>Location of Various Schools</td>
<td></td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>Athletics</td>
<td></td>
<td></td>
<td>9</td>
</tr>
<tr>
<td>Extra-Curricular Activities (Other than Athletics)</td>
<td></td>
<td></td>
<td>10</td>
</tr>
</tbody>
</table>
list of 16 criteria. The combined list of criteria presented to those who participated in the ISM session included:

1. Curriculum Considerations
   Adequate preparation for work/college
   Program availability

2. Quality of Personnel
   Whole system

3. Finances
   Funds
   Budget
   Resources available
   New Formula (state)
   Budgetary constraints
   Options

4. Meet new standards (State mandates)
   Exceeding standards

5. Quality of Students Produced

6. Kids Best Interest

7. Facilities/Equipment
   Condition of existing—need to improve
   Buildings, computers, classrooms, etc.
   Which ones best meet student needs

8. Opportunities for all students: Special needs/TAG

9. Short/Long Range Plans

10. Strength of Administration

11. Seek District Preference re: Structure
    Where or whether to share

12. Location of Various Schools
13. Location of High School

14. Effect on Community
   Effect on business
   Jobs

15. Timelines—Reorganization of District

16. Board Decisions—Commitment and Elections

The timelines used were the same for both districts. The ISM session was conducted four days after the completion of the Nominal Group Technique. Because the computer program was inaccessible for the ISM session in school district A, there was no attempt made to use the computer during the ISM session in school district B. Just as in school district A, an overhead projector was used to project a gridwork in order to complete the ISM session. Appendix F contains the comparison done between school district B's map structured by hand and the one done by the ISM computer program.

The Interpretive Structural Modeling process contained six steps:

1. Generate an element set from the perceived reality of group members: This step was accomplished, as explained previously, by using the Nominal Group Technique. Advisory committee members, board of education members, and members of the administrative team responded to the question, "What are the most important criteria that you use when making a decision about the organizational structure of your school district?"

2. Select an appropriate way to relate pairs of elements from the set: The relationship "more important than" was used in the same manner as in school district A.
3. Group members were asked to determine the existence or non-existence of the relation "More important than" among every pair of elements (criteria) in the element set. The 16 criteria were presented to the group with an explanation about the process. A few minutes were taken to allow the group to ask questions about the criteria for clarification purposes. Item one, "curriculum considerations," was clarified to mean the students should be able to participate in as many programs/courses as possible. Item six, "kids' best interest," meant from the adult viewpoint—-are the adults of the community doing what is best for the kids. "Opportunities for all students," item eight, was clarified to mean that students at both the bottom and the top need special resources. "Short/long range plans," item nine, was explained to the group as a concern for how far in advance budgetary and curricular plans could be made because of the rapid changes occurring within the state.

The same voting procedure was then employed with the participants from school district B. Each element, in turn, was compared to the other 15 using the relationship "more important than" (Figure 5). The decisions were placed on a gridwork and projected by an overhead.

During the voting/discussion process the researcher again made observations to document the interactions that took place among group members. Tie votes among criteria were recorded 13 times, resulting in clarifying discussions by the group members.
**Figure 5.** School district B: ISM voting summary.

<table>
<thead>
<tr>
<th>Relationship</th>
<th>Curricular Considerations</th>
<th>Quality of personnel</th>
<th>Finances</th>
<th>Meet state mandates</th>
<th>Quality of students produced</th>
<th>Facilities/equipment</th>
<th>Short-term range plans</th>
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Relationship - "More Important Than" 1 = yes 0 = no

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The criteria discussed most frequently included "seek district preference," "board decision," and "effect on community."

4. Interpretive Structural Model Developed: Initial findings were presented to the group after the conclusion of step three.

5. Review the model to determine identified inconsistencies with group perception: There were no changes made by the group. The group did not want to add any elements or re-define any of the elements.

6. Prepare the final structural model: The model visually represents the structural relationships among the elements.

"Reading" the model (Figure 6) from the top indicates the elements that are "more important than" the other elements. The elements contained within the dotted boxes are of equal importance. This is identified as a cycle. The members of the group indicated the most important criteria that should be used when making a decision about the organizational structure of their school district was the "quality of students produced" and what is in the "kids" best interest." These two criteria, the group felt, were more important than "meeting the new state standards" which was more important than "finances" which was more important than the "quality of personnel." The rest of the model is read in the same manner. It should be noted that "quality of personnel" was determined to be more important than "curriculum considerations," "administrative strength," and "seek district preference." "Curriculum
Figure 6. School district B: ISM structural model.

SCHOOL DISTRICT B MODEL

5 Quality of Students Produced
6 Kids' Best Interest

4 Meet State Standards (State Mandates)

3 Finances

2 Quality of Personnel

1 Curriculum Consideration
10 Administrative Strength
11 Seek District Preference

8 Opportunities for all Students: Special Needs/TAG

16 Board Decisions - Commitments and Elections

14 Effect on Community

7 Facilities/Equipment
9 Short/Long Range Plans
12 Location of Various Schools
13 Location of High School
15 Timelines - Reorganization of District
considerations" and "administrative strength" were determined to be of equal importance.

The data were also analyzed by placing the elements in categories predetermined by the researcher. The same categories were used with the data from each school district. Again, the categories reflect the major areas that must be considered by a school district when making a decision about the organizational structure of its school.

Local School Policies

10. Administrative Strength
16. Board Decisions—Commitments and Elections
9. Short/Long Range Plan

Local Resources

3. Finances
7. Facilities

Classroom Experiences

5. Quality of Students Produced
6. Kids' Best Interest
2. Quality of Personnel
1. Curriculum Considerations
8. Opportunities for All Students: Special Needs--TAG

State Mandates

4. Meet New Standards
15. Timelines--Reorganization of District
Local Political Influences

11. Seek District Preference
14. Effect on Community
12. Location of Various Schools
13. Location of High School

The total number of elements, and the rank of the elements within each category, gives additional insight into what group members felt were important when their school system faced changing its organizational structure. The category "classroom experiences" contains the greatest number of elements. Further, all of the elements in this category rank in the top half of the ISM model. The category "local resources" also contains elements that ranked in the top half. The category "local political influences" contains the next greatest number of elements. The rank order of these elements, however, are all within the bottom half of the model. The category "local policies" also contains elements within the bottom half of the model. The final category, "state mandates," contains one element in the top half and one in the bottom half of the model.

The participants from school district B appear to be in general agreement about what is of greater importance when a decision about the organizational structure of their school is made. The elements which fall in the category "classroom experiences" are of primary importance to the individuals who participated in the study. Similarly, the elements which deal with "local political influences"
are of lesser importance. Perhaps the most unusual outcome for
the participants from school district B was the seemingly low regard
for the influence of extra-curricular activities. Extra-curricular
activities, or co-curricular activities, or athletics, did not
appear in the top 16 criteria. Barker and Gump (1964) found the
participation rates in extra-curricular activities to be much higher
in small schools than large schools. The difference found was so
significant it "pointed to a different way of life in small and
large schools" (Barker & Gump, 1964, p. 74).

Guiding Question Four

"When two small/rural school districts select an alternative
educational structure for their school, do the criteria deemed
most important, and the relationships among those criteria, possess
similarities and differences?"

This question is answered by the comparing the top and bottom
half of the ISM map from each district and by also comparing the
criteria in the five predetermined categories. The top half of
the ISM map for school district B contains criteria that are
pragmatic as well as philosophical and the most important category
for district B was "classroom experiences." The summary section
of Chapter V contains this discussion.

Guiding Question Five

"To what extent, if any, are the Nominal Group Technique and
the Interpretive Structural Model useful tools for school districts
to employ when making a decision about the organizational structure of their school?"

Approximately two weeks after the conclusion of the NGT and ISM sessions the follow-up questionnaire (Appendix C) was sent to the six individuals who participated in both the NGT and ISM sessions. Four responses were received. The questionnaire was sent again approximately two weeks later (Appendix D) and one additional response was received. The same questionnaire was used in both school districts.

NGT/ISM Questionnaire

The first question asked the respondents if there was sufficient opportunity to express their opinions during the NGT and ISM sessions. Three of the five individuals responding to the questionnaire indicated there was sufficient time to express their opinions. One individual stated "for the most part," but would have liked more time during the ISM session to better understand the opinions of the group members. The last individual simply stated "no" there was not enough time. The second question asked if the group had a better understanding of the issues confronting their school district at the conclusion of the process. Four of the five respondents indicated they indeed had a better understanding of the issues after the completion of the process. One individual, however, felt the group did not have an improved understanding of the issues. This individual felt "many facets" of the problem
were not explored. It is interesting to note this individual also responded negatively to the first question.

The third question asked respondents if the process fostered improved communication among group members. Four of the five responded in the affirmative, some with clarification, and the fifth individual stated "hard to tell." Of those responding in the affirmative two were very positive, one individual stated "for those willing to listen" (the individual who responded negatively to the first two questions), and the fourth stated the process improved communication "to some degree." The fourth question asked the participants to reflect upon the activities that took place and identify what was liked about the process. The first respondent liked the groups that were picked and thought they were very representative of the school district. The "result of the process" was identified by the second individual as what was liked. The third individual thought the process a very "fair" way to cover the different aspects of the school district. Listening to the other group members express their ideas was identified by the fourth individual, and the last respondent liked rank ordering the identified priorities. This individual also stated the results needed to be made public.

Question five and six were very similar, asking the respondents if they felt the NGT and ISM processes would be useful to small/rural school districts faced with making a change in their organizational structure. In response to question five, asking if the NGT and
ISM processes were useful techniques, two individuals stated "yes" they would be, one individual stated the process would allow the school board to devise a plan for reorganization, another individual stated the "most highly considered" points would be put in perspective, and the last individual stated the process would be useful "to some degree" because state guidelines and balancing the budget would really drive the final decision. Question six, asking if the process would be useful to other districts, received a positive response from all five respondents. Reasons given for their positive response included improved communication, gaining input from the community, and helping the community to identify and understand the most important topics.

The last question asked the respondents to identify the most important thing that was learned from the process. The first individual felt all groups agreed student education "ranks above everything else." The technique was identified by the second individual as the most important thing learned. The third individual did not realize the extent of the requirements to run the school district, and the fourth individual learned "there are a lot of alternatives, a lot of opinions, and a lot of emotional feelings in a school district." The final respondent stated that "contrary to popular belief," the school building was not the "most important thing to the best interests of students."

The NGT/ISM questionnaire and actual responses for school district B are listed in Appendix G.
CHAPTER V
SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

This study was concerned with small/rural Iowa schools faced with changing their organizational structure due to declining enrollment, limited resources, and increased demands for program accountability. Specifically, the study sought to determine if the Nominal Group Technique and the Interpretive Structural Modeling processes were useful as analytical tools for small/rural school districts confronted by a change in their organizational structure. Two small/rural school districts in northeastern Iowa volunteered to serve as case studies for the project.

Chapters I, II, and III outlined the conceptual background necessary for the study, presented a review of the related literature, and described the instrumentation used in the study. Chapter IV presented the data generated by the Nominal Group Technique, Interpretive Structural Model, and follow-up questionnaire. The purpose of this chapter is to summarize the findings from each school district, present conclusions the data suggest, and offer recommendations for educational practitioners and researchers.

Summary

School District A

The Nominal Group Technique (NGT), Interpretive Structural Modeling (ISM), and follow-up questionnaire were successfully completed in this northeast Iowa school district. Individuals who

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participated were members of the board of education, administrative team, and advisory committee. A one week timeline was established by the facilitator to complete the NGT and ISM sessions.

The superintendent of schools was responsible for asking members of the three groups to participate in the study. The composition of the advisory committee for school district A was different than initially anticipated by the facilitator and researcher, and was also different from the composition of the advisory committee in school district B. The board of education appointed several individuals associated with the school as members of the advisory committee, in contrast to school district B which excluded individuals associated with the school. Two teachers, a teacher aide, a custodian, and a school board member from school district A all participated in the NGT session as members of the advisory committee. Moreover, the member of the board of education also participated in the NGT session with the other board members. This may have had an impact on the results of both the NGT and ISM sessions, though it is impossible to determine to what extent.

Comparing the criteria identified by the three groups through the Nominal Group Technique process revealed far more differences than similarities. School district A did share, among all three groups, an attitude/belief that "academics" was paramount. The other criterion that was similarly ranked, third by the administrators and school board and fourth by the advisory committee, was "facilities." School district A's facilities were judged to
be very poor. Those who participated in the study recognized the need to be concerned about the quality of the facilities when changing the organizational structure of their school system.

Many of the other criteria, when comparisons were made among the three groups, were not similarly ranked primarily because of the participants' frame of reference. For example, the "location of the school" was very important to the advisory committee and board of education, but was not identified by the administrative team as an important criterion. The element "athletics" was also very important to the advisory committee and board of education. The focus of the administrators, however, was on other areas such as program offerings, finances, and facilities--areas that their expertise tells them are most critical to a quality educational system. Another example of difference among the rankings was the criterion "staffing." The board and administrative team ranked this element in their top five, but it was not included by the advisory committee. Again, this criterion would not be a focal point for the advisory committee as its background would not have included an awareness of this issue. The most surprising differences occurred with the criterion "effect on the community." This criterion was ranked third by the administrators and sixth by the board of education, but it was not identified by the advisory committee as an important criterion to be considered when making a change in the school's organizational structure.
The differences that exist when comparing the criteria identified by the administrative team, board of education, and advisory committee illustrate the divergent views that exist within small/rural schools and communities regarding the organizational structure of the school system. These differences have been the focal point for heated community battles during the decision making process.

The divergent backgrounds among the participants of the ISM session had an effect on the outcome of the structural map. Because several of the members of the advisory committee who participated in the NGT session were associated with the school, the participants in the ISM session were also closely tied to the school system. The advisory committee representatives for the ISM session included two elementary teachers and the school custodian. Of the two school board representatives participating in the ISM session, one individual participated in the NGT session with both the advisory committee and the board of education. The elementary principal participated as the representative of the administrative team. Though the composition of the ISM group affected the structural map produced, the two major benefits of the ISM process, increased communication and a better understanding of the issues among the participants, was not hindered.

The structural map produced by the ISM process contained eleven different levels. Analyzing the model by comparing the top six levels to the bottom five offered additional insight into what the
participants believed were the key elements to drive the decision when selecting a different organizational structure for their school (Figure 7). The top six levels encompass the educational program, finances, facilities, class size, and student needs. The elements included were those that should be the most important, at least philosophically. The elements contained in the bottom five levels, community concerns, test scores, survival of the town, transportation, and athletics/extra-curricular activities with the emphasis on athletics, were not as important. The close association the ISM participants had with the school system probably helped to explain the relative position of the criteria.

Another useful tool to analyze the model was to place the elements into predetermined categories. Local school policies, local resources, classroom experiences, state mandates, and local political influences were major areas that were considered by the school district when contemplating a change in the organizational structure.

Local School Policies

Level 6 Students have equal athletic and extra-curricular opportunities

Level 7 Organizational/administrative leadership

Level 11 Extra-curricular program offerings

Local Resources

Level 2 Finances

Level 4 Facilities and equipment

Level 10 Transportation
**Figure 7.** School district A: ISM structural model.
Classroom Experiences

Level 1 Educational opportunities for all
Level 3 Academics—comprehensive high school
Level 5 Positive environment builds self-esteem
Level 6 Class size effect on competition
Level 8 Certification/qualifications of teachers
Level 9 Test scores

State Mandates

Level 3 State mandates

Local Political Influences

Level 7 Community concerns
Level 10 Survival of town
Level 11 Athletics give community identity

By comparing the identified levels within each category it was apparent the ISM participants placed the most importance on the criteria categorized as "classroom experiences." This category contained the most criteria, and the criteria at the highest levels. "Local resources" was also regarded with criteria from levels two and four, though one element from level 10 was also included. "Local school policies" and "local political influences" contained elements from the levels on the bottom half of the model. The category "local political influences" was the least important to the participants of the ISM session when the organizational structure of their school needed to be changed.
Historically, when decisions about a small/rural school district's organizational structure have been made, local political clashes, power struggles, and community conflicts (Iannaccone & Lutz, 1969) have played a much greater role in the process than the participants from school district A have indicated. One would anticipate such criteria as "survival of town" and "athletics gives community identity" at the top of the ISM Model rather than the bottom. The composition of the ISM group may be an explanation for this outcome. Another explanation may be that academics/classroom experiences were viewed by the participants as the "thing we should say," especially to outsiders, i.e. the facilitator and researcher. A third interpretation was that the decision making process may be viewed as a way for communities to overcome the tremendous influence of local politics, allowing the decisions about their school system to be made on the most important considerations, the educational program.

The follow-up questionnaire, returned by four of the six participants, offered insight into the utility of the Nominal Group Technique and Interpretive Structural Model in a setting where a small/rural school must make a decision about its organizational structure.

In terms of increased understanding among group members, all four respondents indicated they had a better understanding of the issues facing their school district after completing the process. The responses indicated participants had received greater information
than before, had a better understanding of differing viewpoints, and prioritized concerns based on the entire group rather than individual preferences. Three of the four members indicated communication had improved among the group members. The fourth member responded "yes and no," indicating the presence of special interests. (One member also indicated that more community members needed to be involved in the process.)

All four respondents also agreed, with qualifications, that the NGT and ISM processes would be useful to school districts in their efforts to arrive at a new organizational structure. The qualifications centered around the process of the final decision, not knowing for sure how it would be made. All four respondents indicated they had benefited from the process. Two individuals indicated they were very happy knowing the high priority placed by group members on providing a quality education for their students and another stated he learned what their priorities were when faced with a decision.

The respondents also agreed they would have liked more of an opportunity to express their opinions. Two of the four specifically said they did not have a sufficient opportunity, one felt the facilitator moved too quickly through the ISM session, and the fourth would want more time if an actual decision about the district were to be made.

Over all, those who participated in the study from school district A were very receptive to the NGT and ISM processes and
their involvement appeared to be very genuine. Those who participated did not treat the NGT or ISM sessions in a lighthearted manner, even though they knew their efforts were part of a research project.

The key participant from both school districts was the superintendent of schools. Soliciting volunteers, making arrangements for a meeting room, actively supporting the project, were very important parts of the study. Sher (1977) and Dunne (1981) identified the key role the superintendent plays in a small/rural system. In school district A, the superintendent did not become as actively involved as did the superintendent in school district B. The superintendent participated in the NGT session, but did not want to become further involved. This had a direct effect upon the board of education and its perception of the process. After concluding the field work a follow-up presentation was made to the board of education. After the completion of a 20 minute presentation there were very few questions, little interest expressed in the results (except from the one board member who participated in the ISM session), and a stated desire to quickly run through the remainder of their agenda. Had the superintendent taken more time to become actively involved in the entire process the interest from the school board would probably have been different. The positive responses received from those who responded to the questionnaire certainly indicated their support of the process.
School District B

The same procedures and timelines for the data collection were successfully implemented in school district B as they were in school district A. The participation of the facilitator for the NGT and ISM processes and the participation of the researcher in the data collection were conducted in the same manner in both districts. Again, members of the advisory committee, administrative team, and board of education were asked by the superintendent to participate in the study. The total number of representatives from each group participating in the ISM session was also the same in both districts.

Unlike school district A, there were no individuals who participated in the study as representatives of more than one group. Consequently, there were no individuals from school district B who participated in more than one NGT session. School district B's board of education did not include teachers, or other school personnel, on their advisory committee. As explained previously, this was a local board of education decision. The only "overlap" among group members was the result of family relationships. A school board member's daughter-in-law participated as a member of the advisory committee, and there was a husband and wife who participated in the study, though in different NGT groups. It should be noted that close family relationships by those in various decision making positions is often the norm in small/rural schools and communities.
The criteria identified by the administrative team, board of education, and advisory committee were again compared. The results, as in School District A, indicated a pattern of more differences than similarities. "Finances" and "divided public community/effect on community" were the only criteria with similar rankings. "Finances" was ranked very high by all three groups, and "divided public community/effect on community" was ranked in the bottom third of all criteria.

Differences in the ranking of the identified criteria again indicated a divergence among the three groups. The most noteworthy, and also very different from the situation in school district A, was the criterion ranked number one by each group. The administrative team selected "finances" as its most important criterion, the board of education identified "quality of personnel," and the advisory committee felt that an "adequate curriculum" was most important. Obviously, these three criteria are quite different. It was also interesting to note that for many of the criteria ranked differently, two of the groups were quite similar in how the element was ranked, but the third group was very different. Six of the elements were ranked in the top 10 by two of the groups, but were either not ranked in the top 10, or identified at all, by the third group. Moreover, three of the criteria were ranked in the top 10 by one group, but again, were either not ranked in the top 10 or not identified at all by the other two groups.
One of the differences existed with the criterion "location of the high school." The administrative team and the advisory committee ranked this element as sixth most important. The school board, however, did not even consider "location of the high school" as one of 17 criteria they originally identified. Another criterion that was ranked differently by the three groups was "meeting the state standards." Though it was ranked second by the administrative team in importance, and fourth by the board of education, the advisory committee did not include it as one of its criteria. Finally, "athletics/extra-curricular activities" was an element that was ranked much lower than originally anticipated by the researcher. Ranked in the top 10 by the advisory committee, neither "athletics" nor "extra-curricular activities" received a top 10 ranking from the administrative team or the board of education.

The differences identified among the groups again emphasizes the divergent views that exist in small/rural communities. Only identifying these differences, however, is not enough when anticipating a change in the organizational structure of a small/rural school system. The individuals holding these views need the opportunity to express them, and also to listen to the alternate views that exist within their community.

The backgrounds of those who participated in the ISM session were very typical of small/rural schools and communities in the state of Iowa. The superintendent of schools was an "outsider" by community standards, having worked in the school system for only
two years. The other five participants were all connected either
directly or indirectly with farming. Both board members were engaged
in farming, two of the advisory committee representatives were
farmers, and the third was married to a farmer, though she was
employed as a medical technologist. Close family relationships
were again represented among the participants. The composition of
the group lacked someone from the local business community; however,
in this community the business constituency was very small.

The ISM model for school district B can also be analyzed by
comparing the first five levels to the last four, again offering
additional insight into what the ISM participants considered most
important when confronting a change in the organizational structure
of their school (Figure 8). The top five levels include the academic
program, finances, meeting state standards, the curriculum, quality
of administrators/other personnel, and also a concern for the
preference of community members. The criteria included in the top
of the model are very balanced in terms of pragmatic as well as
philosophical considerations. A positive financial position and
the ability to meet state standards have to be accomplished by any
school district. What constitutes a quality academic program, on
the other hand, is open to philosophical debate. The criteria
were also very balanced in terms of the people included. Students,
community members (tax payers), and school personnel were all
included. The bottom four levels again showed a balance between
school, community, adults and students. *Opportunities for all
Figure 8. School district B: ISM structural model.

SCHOOL DISTRICT B MODEL

5 Quality of Students Produced
6 Kids' Best Interest

4 Meet State Standards (State Mandates)

3 Finances

2 Quality of Personnel

1 Curriculum Consideration
10 Administrative Strength

11 Seek District Preference

8 Opportunities for all Students: Special Needs/TAG

16 Board Decisions - Commitments and Elections

14 Effect on Community

7 Facilities/Equipment
9 Short/Long Range Plans
12 Location of Various Schools
13 Location of High School
15 Timelines - Reorganization of District

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students," board decisions," the "effect on the community,"
"facilities," "planning," and the "location of the schools" were
included. The most surprising aspect of the model was the absence
of athletics and/or extra-curricular activities as an important
consideration when changing the organizational structure. In many
small/rural school districts faced with changing their organizational
structure, athletics and the other activities play a major role in
the decision-making process.

Placing the criteria in predetermined categories allows for
additional insight into the model. The same categories were used
for both districts.

Local School Policies

Level 5 Administrative strength
Level 7 Board decisions--commitments and decisions
Level 9 Short/long range plans

Local Resources

Level 3 Finances
Level 9 Facilities

Classroom Experiences

Level 1 Quality of students produced
Level 1 Kids' best interest
Level 4 Quality of personnel
Level 5 Curriculum considerations
Level 6 Opportunities for all students: Special needs/TAG
State Mandates

Level 2 Meet new standards
Level 9 Timelines

Local Political Influences

Level 5 Seek district preference
Level 8 Effect on community
Level 9 Location of various schools
Level 9 Location of high school.

By comparing the number of criteria found within each category, and also the level of those criteria within each category, the ISM participants indicated "classroom experiences" was the most important category to be considered when changing the organizational structure of their school. Just as in school district A, this category contained the most criteria and also the criteria from level one. The category "local political influences" contained the second highest number of criteria and also one element from the top half of the model, indicating the reality of local politics in the decision making process. This is in contrast with school district A which placed criteria from the bottom half of the model in this category.

Placing the elements in categories also indicated a balanced approach by the ISM participants. Each category contained at least one element from the top half of the model and at least one element from the bottom half of the model. When determining a new organizational structure for their school, the ISM participants
would presumably be very concerned about all phases of the school program.

The follow-up questionnaire was returned by five of the six individuals participating in the ISM session. The results again offer insight into the usefulness of the NGT and ISM processes in a small/rural school setting.

Increased understanding among group members is one outcome of the Interpretive Structural Modeling process. Four of the five respondents indicated the process did help them achieve a better understanding of the issues. The individual who responded negatively felt that "emotions" would have an impact on the decision making process and this was not explored during the ISM session. In terms of improving communications among group members three individuals responded positively, one responded "to some degree" and the fifth individual responded "hard to tell." Two individuals expressed the benefit of the group discussion that took place during the ISM session.

The questionnaire also asked the participants if they felt the process would be useful to other school districts. All five individuals responded that indeed it would be beneficial. One person stated the process would help those in other districts to determine priorities and one indicated the process enabled more people to be involved in the decision making process. Three of the five respondents also agreed with those from school district A
who would like to have had more of an opportunity to express their opinions during the process.

Participants from school district B were actively involved in the NGT and ISM sessions. The participants from school district B, just as in school district A, were very serious about their involvement. Even in the context of a research study it was readily apparent that people who live in small/rural communities are very serious about the organizational structure of their school system.

The superintendent of schools became very involved in the entire study from providing demographic and budgetary information about the school district, soliciting volunteers, taking care of technical arrangements, and participating in both the NGT and ISM sessions. This involvement, in my judgment, had a positive impact on the board of education and other community members that heard about the project. The presentation that was made to the board of education was enthusiastically received. Moreover, members of the advisory committee who had participated in the NGT session, but not the ISM session, attended the board meeting to hear the presentation. The leadership of the superintendent, and his expressed interest in the results of the study, had a positive impact on how the study was perceived by the community.

Conclusions

The conflict over the appropriate organizational structure for small/rural schools can be traced historically to the beginning of secondary education in this country during the mid-1800s. The
two ideologies reflected in the conflict, one represented by the professional education establishment, the other by citizens of small/rural communities, have remained steadfast in their opposition. The state of Iowa has been reflective of both the historic and current national debate.

A dramatic shift in demographics and a changing economic structure have characterized the state of Iowa during the past decade. Coupled with the educational reform movement and its call for program accountability, the controversies surrounding the appropriate organizational structure for Iowa's public schools were rekindled. Department of Education officials, and other advocates of reorganization, have anticipated incremental change in the organizational structure of small/rural schools without legislative mandate. Citizens of small/rural communities, conversely, have been hesitant to lose control over the governance of their local school system.

The decision making process employed in communities faced with changing the organizational structure of their school system has varied from community to community. One common problem, however, has been the emotional battle that is waged within these communities as a new structure is sought. Another problem, for those in educational leadership positions, has been the reliance on decision making processes that do not promote collaborative intergroup relationships involving those who have a very high stake in the ultimate decision about the organizational structure of their school.
Sharman (1984), Filley (1975), and Saphier, Bigda-Peyton, and Pierson (1989) advocated educational decision making processes very dependent upon those in decision making positions, but did not include in the decision making process various constituencies that are stakeholders in the final decision. Casburn (1976) stated the problem this causes for school administrators:

The dilemma for administrators is operating under this institutionalized structure with a growing need for personal involvement at every level. No other public agency or private enterprise can compare with the public school for cutting across the entire spectrum of social strata. (p. 62)

Likert and Likert (1976) expressed the same view, "People are enthused about being involved in decisions, but the enthusiasm changes to frustration, bitterness, anger, and aggressive behavior when their successive attempts to be involved in decisions important to them are unsuccessful" (p. 4). With the various constituencies present, even in a small/rural school district, superintendents and school boards are in need of a decision making process that will allow a positive contribution by all groups represented within their school district.

The Nominal Group Technique and Interpretive Structural Modeling, as employed in this study, were found to be successful as tools to aid the decision making process when a school district faces a change in its organizational structure. The Nominal Group Technique, designed to encourage equal participation of group members, identified the criteria determined as most important to the participants. Comparing the criteria identified found for
more differences than similarities. These differences indicated the attitudinal and philosophical divergence that exists among various constituencies within small/rural communities. The Interpretive Structural Model, designed to identify and summarize relationships among specific items, was used to analyze the relationships among the criteria identified by the Nominal Group Technique. Comparing the structural model of the two districts revealed similarities and differences. The elements related to "classroom experiences" were found to be the most important in both districts. "Local political influences" were not found to be of major importance to the participants from school district A. Comparing the top half and bottom half of each ISM model indicated several differences. The top half of the ISM model for district A were summarized as philosophical in nature. School district B included criteria not only philosophical in nature but also very pragmatic. School district B, as opposed to school district A, were cognizant of all major groups within their community, students, community members (tax payers), and school personnel. The success of using the Nominal Group Technique and the Interpretive Structural Model within a school district faced with making a change in its organizational structure, as was done in this study, supports the views of Knezevich (1984). The use of innovative tools and procedures derived from systems analysts was advocated by Knezevich for educational administrators to overcome their limitations in clarifying issues, compiling data, using sophisticated procedures
for comparison and analysis of alternatives, and facing time limits and budget constraints.

Even the simpler of the mathematical or qualitative approaches to the improvement of decision making are relatively uncommon in educational administration. There continues to be an over reliance on the subjective opinions and judgments of the educational decision makers. . . . (Knezevich, 1984, p. 46)

This study also counters the opinions of authors such as Sharman (1984) who have expressed doubts about the viability of innovative decision making techniques in educational settings.

More critical to school districts faced with changing the organizational structure of their school system than the identification of the most important criteria and their relationships, was the ability of the Interpretive Structural Modeling process to improve communication and foster a better understanding of the issues among the participants. The follow-up questionnaire indicated that most of the participants from both school districts felt communication among the group members had improved, that there was a better understanding of the issues, and the process would be useful to other districts confronted with making a change in their organizational structure. This supports the view of Thissen, Gage, and Warfield (1980) and Moore (1987) about the validity of the ISM process. "The soundest indication of validity is the post-use confidence that policymakers and decisionmakers express in the process and views concerning usefulness" (Warfield, 1989, p. 12).
The decision making processes used to change the organizational structure of a small/rural school district, historically, have not involved stakeholders. When people who want to be involved in the decision making process are excluded, emotional battles often result. It is reasonable to expect that the solution to the problem of an appropriate organizational structure for a school district will be more acceptable to the stakeholders when they have participated in the decision making process. Hersey and Blanchard (1988) indicated the key to managing intergroup conflict "is to establish high productive, collaborative intergroup relations" (p. 353).

The Nominal Group Technique and Interpretive Structural Model, as employed in this study, were effective tools to improve the decision making process for school districts that are faced with making a change in their organizational structure.

The results of this study also indicate the flexibility of the Nominal Group Technique and the Interpretive Structural Model. These decision making techniques are specific to a given situation and may be useful in a wide array of decisions faced by educational practitioners.

Rather than focusing on the question of the most important criteria when determining a new organizational structure, the process may be used to determine, for example, whether or not a school district should enter into a whole grade sharing agreement. It may be desirable for the school district confronting an issue of this type to expand the number of NGT and ISM groups. Senior
citizens, local business owners, high school students, college students who have recently graduated from the local high school, and even a group of citizens that are vocal critics of the school system could be included in the process. The greater the involvement by those within the community, the greater the opportunity for a shared consensus concerning the whole grade sharing agreement.

Another very appropriate circumstance for using the Nominal Group Technique and Interpretive Structural Model processes is with two separate communities that have previously decided to share educational programs or have even decided to reorganize into one district. Many times after the decision to change the organizational structure of two districts has been made, there continues to be issues that need to be resolved immediately before or after the change occurs. The NGT and ISM processes may be used to aid the two school districts in this transition.

Finally, because of the utility of the Nominal Group Technique and Interpretive Structural Modeling processes, it may be beneficial several years after a major decision such as a change in organizational structure is made, to bring the original groups back together. The NGT question might be refocused to ask, "Is our present organizational structure most appropriate for the educational needs of our students?" Working through the process will reconfirm the original decision or lay the ground work for future changes by involving the stakeholders in consensus building decision making.
Recommendations

The Nominal Group Technique and the Interpretive Structural Model, as used in this study, were completed for the first time in the context of determining a new organizational structure for a school district. Areas for continuing study include:

1. Replicate the process in a broader sample of school districts faced with changing their organizational structure. In addition to other small/rural schools, suburban and urban schools faced with closing attendance center(s) may benefit from the process. Such studies would show the utility of the process in other settings.

2. Future studies should also consider a change in the method of structuring the criteria during the ISM process. If access to a computer with the ISM program is not readily available, the criteria should be printed on index cards and then used to build the structural model visually as the group participants determine the existence or non-existence of the appropriate relationship. This procedure, rather than using a gridwork displayed by an overhead project, would eliminate the possibility of group participants identifying the existence, and then subsequently the non-existence, of the relationship between two criteria. It will also allow group members to see the development of the model during the ISM process rather than after the completion of the session.

3. The true test of the utility of this decision making process would be in a school district that agreed to use the process to help it make an actual decision. The participants in this study
indicated there should be representatives from other community groups. For example, business leaders, students, senior citizens, and school district patrons without children in school, should all be included in the NGT and ISM processes. The real benefit of increased communication and a better understanding of the issues when a decision about the organizational structure of a school district is to be made can only happen with a high degree of involvement by those who are stakeholders in the final decision.

4. Because the decision making process that encompasses the Nominal Group Technique and Interpretive Structural Model is very flexible, it may be used in a variety of settings: (a) School districts with limited financial resources are, at times, forced to make budget cuts. Using the NGT and ISM processes may be used to build consensus within the school and community concerning areas which should or should not be cut. (b) The NGT and ISM processes, after their initial use within a community concerning an appropriate organizational structure for their school district, may be used several years hence to reconfirm the decision that was made or to lay the ground work for another change. (c) Two communities that have decided to combine their organizational structure in some way may wish to use the NGT and ISM processes to ease the transition into the new organizational structure. The processes may be used to continue to build consensus between the two communities as issues arise.
5. The Nominal Group Technique and Interpretive Structural Model may be valuable tools to aid the current trend toward restructuring schools. Identifying which areas of a school system that need to be changed would be possible using the processes, and then building consensus among the stakeholders concerning the change could be accomplished.
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APPENDIX A

BOARD OF EDUCATION PROPOSAL
PROPOSAL TO SCHOOL DISTRICTS A & B

Introduction

The issues that face small/rural schools in the state of Iowa are very similar—loss of student population, limited financial resources, and increased demands for program accountability. The solutions to these complex problems, on the other hand, are very dependent upon local circumstances. That is as it should be. Local control of our children's schooling is a fundamental principle of our society. However, if a change is needed in the organizational structure of a school district, school patrons, board members, and administrators often become embroiled in a process that becomes ill-structured and ill-defined with many meetings and discussions accomplishing very little.

Methodology

The fields of individual and group decision making can be used to provide a framework to add objectivity when analyzing a complex societal issue such as our small/rural schools. Identifying and understanding the substantive elements of an issue, with the minimization of emotional and political influences so common in group decision making, can be done in a two step process.

Step 1—Identifying the elements of the problem. The Nominal Group Technique is a process that can be used when individual judgments need to be identified and then combined in order to make a group decision. NGT is structured to overcome the problems of group dynamics when gathering information from a small group of
people. The process assures that all members of the group will have equal participation by neutralizing those individuals with strong personalities who typically dominate small group discussions. NGT is an excellent tool to use when it is necessary to identify the critical elements of a problem if there is a lack of agreement on the nature of the problem or the components of a solution.

Step 2—Identifying and structuring the relationships between the elements of the problem. ISM is a systematic and logical methodology for understanding a complex, multi-element, problem or issue. The ISM is effective when breaking a problem into its component parts and then relating each of the parts by building a visual model. Those involved in the ISM process are asked to identify the relationship between pairs of elements that were generated using the NGT. A computer program is used to determine the relationships that exist between all identified elements. After the existence or non-existence of the relationship between each pair has been determined, the computer formulates a map of the structural. The key to the ISM is that the group members involved, after seeing the computer model, are usually surprised to learn that their "understanding" of the issue contains ideas that previously had not been considered, which leads to a clearer understanding of the issue and aids in decision making.

Time Commitment

The NGT and ISM, as outlined above, will be done with three groups—school board members, school district patrons (8-10), and
the administrative team. The process will involve approximately two to four hours. A follow-up presentation sharing the results of the study to all three groups simultaneously will last approximately one hour.
APPENDIX B

SCHOOL DISTRICT A

COMPUTER GENERATED STRUCTURAL MODEL

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School District A

Comparing the ISM structural map produced by hand (i.e., drawing the map based on the results of the ISM session conducted in the field) with the map generated by the ISM computer program at the University of Northern Iowa indicated the two maps were almost identical. Both maps contained eleven levels, and the only difference occurred at levels five and six. The map generated by hand included the criteria "positive environment builds self-esteem" at level five, and at level six the criteria "students have equal athletic and extra-curricular opportunities" and "class size effect on competition" were listed. The map generated by the computer program, however, listed "positive environment builds self-esteem" and "students have equal athletic and extra-curricular opportunities" at level five and "class size effect on competition" listed at level six.

One explanation for this difference may lie in the entry of data into the computer. Using the transitive relationship "more important than" the computer automatically determines if some criteria are more important than others. For example, if criteria A is more important than B, and criteria B is more important than C, the computer will automatically determine criteria A to be more important than criteria C. During the field work this was not possible, consequently some relationships may have been determined to be positive the first time two criteria were compared, but the

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second time they were compared the relationship was determined to be negative.

Two other explanations for the discrepancy in the two models exist—both strictly human error. During the course of the field work a mistake may have been made when recording the group decisions on the gridwork or a mathematical error made when the map was drawn; similarly, an error may have been made when the data was entered into the computer.
APPENDIX C

COVER LETTER AND NGT/ISM QUESTIONNAIRE
May 5, 1990

Dear __________:

I would like to take this opportunity to thank you again for your participation in the research project which analyzed the criteria by which small/rural school districts make decisions about their organizational structure. I certainly appreciate the time you took out of your busy schedule to help with this project.

To help in my assessment of the usefulness of this type of analysis, I would like to ask for five more minutes of your time to answer the questions on the attached page. I am particularly desirous of obtaining your responses because the Nominal Group Technique (1st session) and Interpretive Structural Model (2nd session) have not been used in a similar situation.

It will be appreciated if you will complete the questionnaire prior to May 15 and return it in the enclosed, self-addressed envelope. Please be assured that your responses will be held in strictest confidence.

Thanks again for your help.

Sincerely yours,

David Stoakes
NGT/ISM QUESTIONNAIRE

1) During the process (both sessions) did you feel you had sufficient opportunity to express your opinions? Why or why not.

2) At the conclusion of the process did you feel the group had a better understanding of the issues confronting your school district? Please explain.

3) Did the process foster improved communication among members of the group? Please explain.

4) Upon reflection of the activities that took place, did you like the process? Please explain.

5) Are the Nominal Group Technique (1st session) and the Interpretive Structural Model (2nd session) useful techniques when making a decision about the organizational structure of a school district? Please explain.

6) The most important thing I learned from the process was...

7) Would this process be useful to other school districts confronted by making a change in their organizational structure? Please explain.
APPENDIX D

FOLLOW-UP LETTER
May 16, 1990

Dear __________:

    I recently sent you a follow-up questionnaire to the research project which analyzed the criteria by which small/rural school districts make decisions about their organizational structure.

    At this time I have not received your completed questionnaire. Your opinions concerning the processes that were used are vital to my analysis of the usefulness of the Nominal Group Technique and Interpretive Structural Model. I have enclosed another copy of the questionnaire and a self-addressed envelope. It will be most appreciated if you would spend five minutes to fill out and return the questionnaire.

    Thanks again for your help. Your opinions are valued and are most important to help determine if this process should be used in other school districts.

Sincerely yours,

    David Stoakes
APPENDIX E

SCHOOL DISTRICT A

NGT/ISM QUESTIONNAIRE RESULTS
NGT/ISM QUESTIONNAIRE
School District A

1) During the process (both sessions) did you feel you had sufficient opportunity to express your opinions? If so, at what point.

A. No
B. Yes, I felt that a lot during the 2nd session because the facilitator moved so quickly.
C. Pretty much so, however if this were a real situation, I would want to have more time to think about some of the responses since I knew some of the members were on a schedule.
D. No not really, however it was more difficult to express opinions during the 2nd session.

2) At the conclusion of the process did you feel the group had a better understanding of the issues confronting your school district? Please explain.

A. Yes, without being on the board we don’t know many of the issues.
B. Yes—I felt we had a better understanding of how the various factions of the committee had different points of view.
C. Yes—forced us to prioritize what we think is important in a total school system instead of individual person preferences.
D. Yes, for the first time we had a list of concerns and priorities.

3) Did the process foster improved communication among members of the group? Please explain.

A. I think so. We know how all of us at the meeting stand.
B. Yes—a lot of these issues are not discussed openly because it’s considered a somewhat "taboo" subject.
C. Yes—but felt we needed more community individuals who were not associated with the school system and more business people.
D. Yes and no. We each had special interests to consider. Sometimes these ran counter to the group.

4) Upon reflection of the activities that took place, a) what did you like? and b) what did you dislike?

A. I liked the group discussions but I think more people NOT working at or for the school should have been involved.
B. The group's control over topics of discussion. Overlap--not clear boundaries between some of our topic areas.
C. Yes--helped each see others perspectives and opinions.
D. a) Priority rating of criteria. b) Generating the different criteria.

5) Are the Nominal Group Technique (1st session) and the Interpretive Structural Model (2nd session) useful techniques when making a decision about the organizational structure of a school district? Please explain.

A. Yes, if you get more and different ideas.
B. To a point. When it comes down to a final decision, does the group I represent really have a say? (probably not)
C. Yes--but allow more time or have people do some thinking before sessions as to what they will be doing.
D. Yes, they are helpful, but then considerations need to be made as well. Example--open forum.

6) Would this process be useful to other school districts confronted by making a change in their organizational structure? Please explain.

A. Community wise yes, as far as districts, I think the board would have to communicate with the taxpayers.
B. Yes--it brings things out in the open.
C. Probably so--would at least give them a place to start organizing their thinking and presenting it to the community.
D. Yes, forces choices.

7) The most important thing I learned from the process was . . .

A. The pluses and minuses of working with all school employees.
B. Kids do seem to be our 1st priority--that's important to know.
C. We all seemed more united on providing quality education first for our kids than I thought we might be.
D. Where my and others priorities lie.
APPENDIX F

SCHOOL DISTRICT B

COMPUTER GENERATED STRUCTURAL MODEL
School District B

The two structural maps done for school district B are also very similar, though not as similar as the two maps were for school district A. The map generated by hand for school district B contained nine levels, contrasted with the map done by computer which contained seven levels. The first difference between the two maps was at levels three and four where the criteria were just reversed. "Finances" and "quality of personnel" were at the third and fourth levels on the map structured by hand, and on the computer generated map "quality of personnel" was at the third level and "finances" was at the fourth level. The other differences between the two maps occurred at the fifth, sixth, and seventh levels. The computer generated map included criteria "curriculum considerations, "opportunities for all students," "administrative strength," and "seek district preference" together on the fifth level. The map structured by hand listed "opportunities for all students" at the sixth level and the other three criteria at the fifth level. The final difference was that the computer generated map included the criteria "effect on community" and "board decisions—commitments and elections" together on level six, contrasted with the map generated by hand which listed the two criteria on level seven and eight respectively.

Explanations for the differences between the two maps are the same as those for school district A; the computer automatically determining an individual criteria more important than another and human error.
SCHOOL DISTRICT B MODEL
Computer Generated

1 Curriculum Considerations
2 Quality of Personnel
3 Finances
4 Meet State Standards (State Mandates)
5 Quality of Students Produced
6 Kids' Best Interest
7 Facilities/Equipment
8 Opportunities for all Students: Special Needs/TAG
9 Short/Long Range Plans
10 Administrative Strength
11 Seek District Preference
12 Location of Various Schools
13 Location of High School
14 Effect on Community
15 Timelines: Reorganization of District
16 Board Decisions - Commitments and Elections
APPENDIX G

SCHOOL DISTRICT B

NGT/ISM QUESTIONNAIRE RESULTS
NGT/ISM QUESTIONNAIRE
School District B

1) During the process (both sessions) did you feel you had sufficient opportunity to express your opinions? If so, at what point.

A. The only part of the process that I felt uncomfortable with was the first question. I didn't know what to expect or what type of process we were doing.
B. No
C. Yes, there was enough time.
D. For the most part, the time given was sufficient. During the second session, there were several times that I felt we could have talked longer. Maybe even with more time, we still might not have been able to understand all opinions.
E. Yes

2) At the conclusion of the process did you feel the group had a better understanding of the issues confronting your school district? Please explain.

A. I feel the group had a much better understanding of the issues. I was surprised on how the different groups rated each of the criteria and that basically each group ranked in similar order of importance. As a member of the board of education this gives me a much better feeling on some of the decisions that we have recently had to make.
B. No--The problems many facets were not explored to the emotions that will affect decision making in the future.
C. Yes, I was more aware of the differing points of view that everyone held.
D. From my point of view, I think the process did help me understand better what the school board is confronted with in making decisions. Especially when there are so many alternatives to be considered.
E. Yes, but results did not go along with vocal local opinion.

3) Did the process foster improved communication among members of the group? Please explain.

A. It did foster improved communications especially when the group voted and tied on so many issues. This supports my idea that many times groups agree on ideas but interpret the questions differently. Upon explanation of the question most tied votes were eliminated.
B. Yes for those willing to listen to each other.
C. I think it made us all more aware of what we felt was important.

D. The process did to some degree improve communication. During the second session there were times that school board members had to explain their positions because it was based on things that we did not know. This is especially true when it comes to meeting state "guidelines."

E. Hard to tell.

4) Upon reflection of the activities that took place, a) what did you like? and b) what did you dislike?

A. I like the groups that were picked. I felt it is very representative of our school district. I disliked part of the second session due mostly to the length of the process and seemingly repetition but I know it was part of the whole process.

B. a) The result. b)

C. I thought it was as fair a way as possible to cover so many differing aspects of a particular school district.

D. Yes. I think the process was well worth my time. It was an interesting process and it was interesting to hear what other people think is important especially when the idea has to be considered with other ideas.

E. Being able to clarify put in rank order priorities. Disliked the results have not been used publicly.

5) Are the Nominal Group Technique (1st session) and the Interpretive Structural Model (2nd session) useful techniques when making a decision about the organizational structure of a school district? Please explain.

A. Final decision should still be made by voters of the district. These processes however enable a board to devise some sort of plan for reorganization to present to the public with different groups having had input on devising that plan.

B. Yes.

C. It puts in perspective which points are to be most highly considered, whether right or wrong.

D. To some degree the process is useful in helping to make decisions. Sometimes I feel that a small school or any school when it makes decisions, the decisions are going to be based mainly on trying to meet state guidelines and on trying to balance the budget. When this happens, there may be better alternatives that get put aside.

E. Yes—checks all possible answers and then narrows down.
6) Would this process be useful to other school districts confronted by making a change in their organizational structure? Please explain.

A. I think it would be very beneficial for other districts in understanding what the community is feeling. Such a process helps define future goals and how to go about solving them. From our results I was surprised that location of high school ranked on the lower end of the scale.
B. Yes.
C. I believe it would help them understand what was the most important topics to consider, however the structural change will not be made easier.
D. I think the process shows enough good to make it useful to other districts. I do not feel that more people should be involved in the process. Not only from the standpoint of better representation but more people would know about the process and know that some "means" was being used to help the school board members in their decision making. I think a lot of decisions are made by the board without concrete reasons or from input from the community.
E. Yes—letting all groups have input and show results.

7) The most important thing I learned from the process was ....

A. That all groups definitely agree students' education ranks above everything else. Buildings--finance, state mandates, location of schools all were secondary. This gives me support in future decisions and I have the feeling of support in working for student's education as our number one priority.
B. The technique.
C. The fact that there are so many requirements that have to be made to run your school district.
D. The most important thing that I learned was that there are a lot of alternatives, a lot of opinions, and a lot of emotional feelings in a school district. Hopefully, this process would narrow down the choices and give some stability to the district.
E. The building is not the most important thing to the best interests of students. Contrary to popular belief.