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A SOCIOMETRIC ANALYSIS OF THE INFORMAL NETWORKING

PATTERNS OF IOWA'S PUBLIC SCHOOL

SUPERINTENDENTS

A Dissertation

Submitted

In Partial Fulfillment

of the Requirements for the Degree

Doctor of Education

Approved:

Dr. David K. Else, Co-Chair

Dr. Patricia R. Krysinski, Co-Chair

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December 1996

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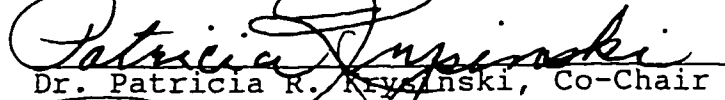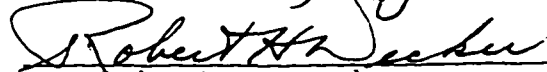THOMAS M. HOOVER

December 1996

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A SOCIOMETRIC ANALYSIS OF THE INFORMAL NETWORKING

PATTERNS OF IOWA'S PUBLIC SCHOOL

SUPERINTENDENTS

An Abstract of a Dissertation

Submitted

In Partial Fulfillment

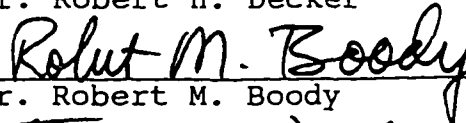of the Requirements for the Degree

Doctor of Education

Approved:

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Faculty Advisor
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Thomas M. Hoover

University of Northern Iowa

December 1996

ABSTRACT

The purpose of this study was to describe the informal communication network of public school superintendents in the state of Iowa. This investigation was initiated because the literature on the superintendency remains silent to the topic of communication relationships among superintendents. For purposes of this study, networking was defined as activities leading to the formation of peer relationships resulting in the acquisition of useful information, advice, moral support, or socializing and mentoring opportunities.

The collection of data was made possible by means of a self-reporting survey mailed to all public school superintendents in Iowa. The survey reflected the standard approach taken by sociometric researchers in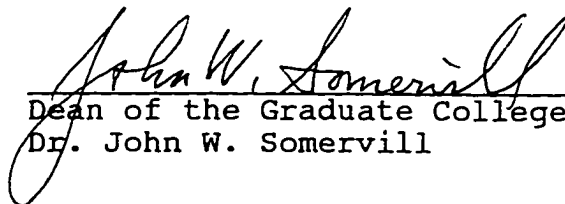 that respondents were asked to identify other Iowa superintendents they perceived of as admired colleagues, as effective leaders, and as direct sources of information or support.

A multi-step analysis of the data, highlighted by the computation of numerous connectedness ratios, was undertaken to determine the extent to which the informal communication network of Iowa public school superintendents was influenced by the attributes of group affiliation, accessibility, status, and task relationship. Group affiliation was operationalized as age, ethnicity, gender, and graduate school attended. Accessibility meant geographic proximity

as determined by the area education agencies (AEAs) serving the districts of the superintendents studied. Status included salary, years of experience as a superintendent, and school district enrollment. Task relationship assumed that some superintendents influence other superintendents because of their personal qualities rather than as a result of the performance skills they possess.

Findings associated with the four research questions included in this study revealed differences in networking patterns among Iowa public school superintendents because of age, gender, geographic proximity, salary, enrollment, and personal qualities. In addition, 23 individuals were identified as networking stars because of the high frequency of namings attributed to them.

ACKNOWLEDGEMENTS

This dissertation honors my wife Donnelle who has been my loving partner and best friend for the last 30 years. Words will never fully express the love and admiration I feel for the way she endured those many times when "I was here but not really here" because my thoughts were focused elsewhere. My pursuit of the doctorate put our lives on hold for several years, but Donnelle remained supportive and never complained. Without her loving encouragement, the successful completion of my doctoral program would not have been possible. I also wish to express my loving gratitude to Kristin, Erica, and Nicole for remaining so supportive in spite of all those weekends when "Dad had to work on his dissertation."

Thanks to my parents, Ralph and Viola, I have been blessed with many gifts of the heart. I am especially fortunate that they instilled in me at an early age a lifelong love of learning. In addition, I would not have reached this milestone without the support of John and Edna, Dianne and Lyle, and John and Diane--thanks for being there.

Throughout my journey towards the completion of this dissertation I received continuous support from Dr. Dave Else, my committee co-chair. His belief in the importance of this study sustained me, and I am most appreciative of the leadership he displayed as my committee co-chair. To the other members of my committee--Dr. Rob Boody, Dr. Bob

Decker, Dr. Taggart Frost, Dr. Patricia Krysinski (co-chair), and Dr. Tony McAdams--I offer my thanks for always pushing me to probe deeper into the meaning of this study.

To my colleagues and friends at Alburnett and Central City, I am thankful for their willingness to listen and provide me with valuable feedback. For those times when they added to their own workload as I labored to complete this study, I am deeply grateful. I would especially like to thank Dr. Dave Hoyt who was a good friend and mentor throughout those times when I questioned my resolve to complete this work.

Finally, to all the superintendents in Iowa I would like to thank them for being such an interesting group to study.

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CHAPTER 1

THE PROBLEM AND ITS SETTING

Introduction

The office of public school superintendent requires that its occupants be both leaders and managers of the districts they serve. From a leadership perspective, superintendents are charged with the task of defining a compelling vision which will inspire their students and staff, and they are expected to be decisive and innovative in response to the many issues confronting their districts. When addressing an issue such as equity of service to all children or when designing an instructional program of relevance and quality, superintendents are expected to exercise fiscal restraint on behalf of the taxpayers in their districts.

Individuals chosen to serve as superintendents are expected to discharge effectively the managerial duties associated with the day-to-day operations of their districts. These duties include managing the budget, purchasing supplies, overseeing building maintenance and construction, and hiring and supervising all district personnel. While endeavoring to be both leader and manager, superintendents must build trusting and supportive relationships with their school boards. Because superintendents are accountable to school board members, and

board members are elected to represent the community, superintendents must accurately understand the culture of their communities. This understanding is crucial in helping them plan the educational agendas of their districts.

Research Into the Superintendency

The office of city superintendent came into existence in 1837 as a result of local action in Louisville, Kentucky, and Buffalo, New York (Konnert and Augenstein, 1990). Since that time, the superintendency evolved from that of an inspector of school operations to chief executive officer of a board of education in a local school district (Campbell, Cunningham, Nystrand, & Usdan, 1985). During its evolution, extensive research concerning the nature of the superintendency was on-going but only in selected areas of study. Specifically, studies of the superintendency centered on the demographics of the position, sought to uncover information regarding the personal traits of those holding the office, delved into the relationships superintendents have with their school boards, identified some of the roles superintendents are asked to play on behalf of their districts, and examined the degree to which conflict is woven into the fabric of the office (Blumberg & Blumberg, 1985; Glass, 1992; Konnert & Augenstein, 1990; Sergiovanni, Burlingame, Coombs, & Thurston, 1987). As a result, substantial evidence exists regarding those who

become superintendents, what they routinely do, and the
strategies they adopt in the face of continuous conflict.

Significance of the Study

The need to study the superintendency exclusive of the
duties and demographics of the office is not new. As far
back as 4 decades ago, researchers recognized the importance
of expanding the scope of research to include a description
of the relationships existing among superintendents (Gross,
Mason, & McEachern, 1958). Other researchers such as Kaplan
(1984) observed that information, technical expertise, and
political and moral support exists within the domain of
one's peers, and Kanter (1977, 1983) further affirmed the
significance of peer relationships as a source of
information, resources, or support. Therefore, what
superintendents do to gather information, familiarize
themselves with current trends, or receive moral support is
an important area of study.

Hoy and Miskel (1991) defined networking as the
"process of forming relationships with influential people"
(p. 94). Crowson (1987) noted that

> What remains to be investigated in full, interpretive
> depth is the process of socialization that surrounds
> the superintendency generally. Who receives mentoring,
> who does not? For what reason? What skills,
> knowledge, and understandings do superintendents learn
> in preservice positions and what in graduate school
> during certification or doctoral study? What do they
> learn on the job? From fellow superintendents? (p.
> 58).

The superintendent, unlike other district administrators, is in a position to channel streams of information into an entire school system. Pitner and Ogawa (1981) discovered that superintendents spend a vast amount of time communicating with others both inside and outside of their district. Only high school principals equal superintendents in the extent of internal and external communicating demanded of them (Konnert & Augenstein, 1990).

Morris (1979) speculated that superintendents are in a unique position to be primary contacts with individuals located outside their districts. In so doing, superintendents acquire an appreciation for the positive impact that networking can have upon the daily execution of their responsibilities. The varied demands placed upon superintendents cause them to recognize that they cannot rely solely on their own expertise. At times they find it necessary to contact trusted informants external to their districts for vital information and support. Because it is sometimes difficult for superintendents to approach board members or subordinates with sensitive issues, superintendents look instead to respected confidants, often other superintendents (Blumberg & Blumberg, 1985).

Networking is a process by which individuals build personal and professional relationships with others like themselves leading to the exchange of useful information or

moral support. When people are exposed to new ideas, seek to understand prevailing trends, or find themselves ascending to new positions of authority, networking helps shape behavioral responses to these situations. The German sociologist Georg Simmel was one of the first to recognize the significance of networks. In a 1955 translation by Wolff and Bendix of Conflict (1923) and The Web of Group Affiliation (1922), Simmel (1955) theorized that behavioral changes in individuals become more understandable by analyzing how these persons are communicatively linked. This study, which describes networking linkages among Iowa's public school superintendents, will provide some insight into their behaviors relative to the information-gathering strategies they routinely employ.

Research comparing individuals highly integrated into a communication network with those who have no network interaction illustrates the importance of studying networking patterns. Roberts and O'Reilly (1978) determined that isolated workers have less organizational commitment, lower levels of job satisfaction, and poorer job performance when compared with workers highly connected to their peers. Therefore, this study will prove useful because it will examine the extent to which Iowa's public school superintendents seek to lessen their own isolation in

pursuit of information and support by way of an informal
communication network.

It should be noted that there are practical
implications which add to the importance of this study.
Knowledge germane to the description of an informal
communication network among Iowa's public school
superintendents could be included in the preservice training
of future superintendents. Superintendents new to Iowa or
first-time practitioners would find information about
networking patterns of superintendents helpful as they
endeavor to identify reliable informants from among their
peers. Lastly, anyone else interested in learning about the
intercommunications which occur among superintendents would
benefit in knowing the results of this study.

The Problem

The literature on networking among public school
superintendents remains relatively silent. Little attention
has been given to the study of superintendents beyond the
organizational perspective of who they are and what they
routinely do within their districts. Therefore, in order to
more fully understand the superintendency, research aimed at
examining the networking relationships that Iowa public
school superintendents maintain with each other was
undertaken.

The design of this study was based on the premise that the attributes of group affiliation, accessibility, status, and task relationship provided a format by which an analysis of an informal communication network was possible. Group affiliation was operationalized as age, ethnicity, gender, and graduate school attended. Accessibility meant the geographic proximity or nearness as determined by the area education agencies (AEAs) serving the districts of the superintendents studied. Status included salary, years of experience as a superintendent, and school district enrollment (Armstrong, 1989). Task relationship assumed that some superintendents influence other superintendents because of their personal qualities or demographic factors rather than as a result of the performance skills they possess (Walton & Hackman, 1986). In other words, superintendents admired as effective leaders or respected colleagues are not always called upon to serve as sources of information or support.

Definition of Terms

Several terms used throughout the study are defined to avoid misinterpretation.

Networking: Activities leading to the formation of peer relationships resulting in the acquisition of useful information, advice, moral support, or socializing and mentoring opportunities.

Communication Network: Interconnected individuals of similar backgrounds and interests linked by a patterned flow of information.

Formal Communication Network: A prescribed set of relationships between interrelated individuals consisting of regularly scheduled encounters resulting in the exchange of technical information.

Informal Communication Network: An emergent pattern of interaction less structurally defined and based on friendship, advice, or conversational relationships between peers of like backgrounds.

Stars: Individuals having the highest degree of connectedness to others in a communication network.

Isolates: Individuals having the least degree of connectedness to others in a communication network.

Cliques: Subsets of individuals communicatively linked more to each other than with others in a network.

Old Boy Network: An inner circle of professional and social acquaintances involving men of influence who advance their own self-interests at the expense of individuals of lesser standing.

Area Education Agencies (AEAs): The 15 intermediate support units which provide educational and fiscal services to local school districts in Iowa.

Purpose of the Study

The intent of this study was to report what was found in the authoritative literature regarding the evolution of the public school superintendency and the formation of communication networks. It was further intended to engage in a sociometric study so that the data collected from such an analysis would contribute to an understanding of the informal communication network among Iowa's public school superintendents. The research undertaken sought to determine the extent to which the informal communication network of Iowa's public school superintendents was influenced by the attributes of group affiliation, accessibility, status, and task relationship.

Research Questions

This study focused upon an analysis of group affiliation, accessibility, status, and task relationship which enable Iowa public school superintendents to establish and be part of an informal communication network. To provide structure and direction for this study, the following questions were formulated:

1. Is there an association between the attribute of group affiliation and the participation of Iowa public school superintendents in an informal communication network?

2. Is there an association between the attribute of accessibility and the participation of Iowa public school superintendents in an informal communication network?

3. Is there an association between the attribute of status and the participation of Iowa public school superintendents in an informal communication network?

4. Is there an association between the attribute of task relationship and the participation of Iowa public school superintendents in an informal communication network?

Limitations of the Study

This study was limited to a sociometric analysis of individuals serving as public school superintendents in Iowa during the 1995-96 academic year. In order to avoid duplication of responses, superintendents affiliated with two districts in a shared capacity were surveyed only once. The decision to restrict this study to Iowa's public school superintendents established a predetermined population which limited the total number of naming responses generated by the sociometric survey used in the study. This approach is consistent with Northway's (1967) observation that sociometric research "is most satisfactory for groups with defined boundaries, in which the individuals know each other at least by name and continue with some cohesion over a reasonable period of time" (p. 3). Likewise, restricting the focus of the study to Iowa's public school

superintendents created a closed group of predetermined participants which ensured that the naming responses were limited to that mutually-inclusive category of subjects.

As suggested in the definition of terms, identifying stars and isolates among Iowa's public school superintendents was an undertaking relevant to this study. In certain instances, individuals described as isolates may have acquired this designation because they were new to Iowa or in the beginning stages of their careers as superintendents. Therefore, follow-up research to determine if these newcomers remain isolated would constitute an appropriate subject for future study.

One additional limitation worthy of discussion related to the fact that data collection was conducted by means of a self-reporting survey. The usefulness of this information was directly related to the candidness exhibited by the respondents as they reacted to the survey questions. Procedures were established guaranteeing that all of Iowa's superintendents received a survey, thus ensuring their opportunity to participate in this study.

Organization of the Study

This study of informal networking patterns of Iowa's public school superintendents consists of five chapters. In Chapter 1, a rationale is offered as to the importance of this study. The chapter also describes the framework of the

sociometric study undertaken relative to the attributes of group affiliation, accessibility, status, and task relationship.

The literature review of Chapter 2 is organized into eight sections with the first section focusing on the various historical initiatives impacting the evolution of the local superintendency. The second section describes the relationship of conflict to the superintendency and its implications for networking. The third section consists of an analysis of communication networks and a discussion regarding formal and informal communication networks. Section four describes the benefits associated with networking, and section five pertains to the topic of career pathing and the old boy network. Section six outlines networking behaviors of superintendents from the vantage point of strong-tied/weak-tied linkages, and the remaining two sections focus on (a) the evolution of network analysis as an investigative tool and (b) a discussion of network analysis methodology via the concepts of diffusion of information, social interaction analysis, and cluster analysis.

The importance of the literature review contained in Chapter 2 is that it provides the theoretical foundation upon which this study is based. In order to build such a foundation, indexes and abstracts were consulted in an

effort to first locate preliminary sources of information. The Education Index was helpful as a source for published articles in education journals, relevant books, and publications in related fields. Much of the secondary source information pertinent to the superintendency, for example, was discovered in textbooks via the Education Index. The Current Index to Journals in Education and Psychological Abstracts also served as sources of preliminary information. In order to investigate the networking literature outside the genre of education, the Reader's Guide to Periodical Literature was consulted. In that same vein, computer searches were initiated to electronically examine the hundreds of non-educational databases included with the DIALOG Information Services. Other electronic searches were also conducted by accessing the information resources located on the Internet.

Along with the research aimed at identifying preliminary and secondary sources of information, a concerted effort was made to locate primary sources as well. Primary source information consisted of direct descriptions authored by those who witnessed or conducted the research efforts themselves. Often the bibliographic listings included in textbooks or with journal articles proved useful in locating primary sources. Another venue useful in identifying primary source material was the Educational

Resources Information Center (ERIC). After perusing the
Thesaurus of ERIC Descriptors for the appropriate research
terms, ERIC searches were launched by means of DIALOG.

One additional resource invaluable in locating primary
sources was the Dissertation Abstracts International (DAI).
By consulting the index of keywords included in each DAI
issue, it was possible to locate those dissertations bearing
some connection to the research being undertaken. In this
way, dissertations on microfiche were secured by using the
order number included with the abstract.

Chapter 3 explains the methodology used to conduct the
research leading to a description of the informal
communication network of public school superintendents in
Iowa. In this chapter the following steps are outlined:
methodology, the population studied, the sociometric test,
the survey instrument, field testing the survey, collection
of the data, treatment of the data, presenting the data, and
summmary.

Chapter 4 reports the results of the sociometric test
administered to all available public school superintendents
in Iowa. In terms of its organization, this chapter first
presents descriptive data as a way of demographically
describing Iowa's superintendents. Next, the data
associated with the attributes of group affiliation,
accessibility, status, and task relationship are analyzed in

relation to the four research questions driving this study. Sociograms representing the sociometric data describing the informal communication network were constructed. Finally, anecdotal comments supplied by the respondents about the advantages and disadvantages of networking were summarized.

Chapter 5 offers a summary of the purpose and methodology of the study. In a section labeled Conclusions of the Study, significant observations drawn from an analysis of the data are provided. Important implications leading to a better understanding of the superintendency also are described, along with implications for future research. Appendixes include copies of all documents used in conducting this study.

CHAPTER 2

REVIEW OF LITERATURE

Introduction

The literature review for this study is divided into three parts. The first part focuses on the recent literature of the superintendency in the context of a narrative describing the evolution of the contemporary public school superintendency. The second part summarizes a body of research for the purpose of discussing networking within the context of conflict management, formal and informal communication networks, networking benefits, career pathing, and the "old boy" network. The third part dwells upon portions of the networking analysis literature pertinent to those techniques related to the task of analyzing and describing communication networks.

Historical Development of the Superintendency

The term educational superintendent refers to individuals who occupy chief executive officer positions at the state, county, and local level. Early in the nineteenth century, states appropriated funds in support of education. Ensuring accountability for these funds resulted in the position of state superintendent of schools. New York appointed the first state superintendent in 1812, and other states soon followed. The state superintendents were

responsible for providing oversight of local spending practices (Konnert & Augenstein, 1990).

Early in the nineteenth century, states established tax supported public schools (Tanner & Tanner, 1987). Public school districts became the predominant pattern of organization, and responsibility for inspecting these schools rested with state superintendents. When it became increasingly difficult for state superintendents to visit all school systems within their states, inspection responsibilities were delegated to volunteer county committees. In time, the burdensome nature of such inspections caused county committees to recognize the need to relinquish these duties to someone on a full-time basis. Accordingly, the position of the county superintendent developed and became commonplace among states prior to the Civil War.

The local superintendency was not part of the evolution of state and county superintendencies (Konnert & Augenstein, 1990). Instead, the local superintendency was an urban initiative accentuated by the growth of cities resulting in the need to coordinate the activities of several schools within a single city. As the population of cities grew, one-room schools were replaced by multi-room school buildings which required the allocation of financial resources throughout city-wide school districts.

Eventually, the management of entire school districts became too demanding for local committees forcing the creation of the city superintendency. Buffalo, New York, and Louisville, Kentucky, first appointed local superintendents in 1837. As the United States became less agrarian and more industrialized, this nationwide trend toward appointing city superintendents continued (Blumberg & Blumberg, 1985).

The establishment of the local superintendency in rural areas occurred in the twentieth century. For years, rural schools were similar to their urban counterparts in that they were one-room schools routinely inspected by county superintendents. Two factors are credited with the creation of rural consolidated school districts. The first factor was the 1874 Kalamazoo decision in which the Michigan Supreme Court supported the legality of the high school as part of the common school system. As a result, both urban and rural school districts began to consider options by which the high school experience could be made available to their students. More recently, the growth of suburbs during the decades following the end of World War II served as a second factor leading to the creation of rural districts. As in the case of their urban counterparts a century earlier, the rise of rural consolidated school districts necessitated that boards of education employ their own superintendents (Campbell et al., 1985).

The Local Superintendency

The various themes of clerk, manager, instructional leader, chief executive officer, and politician permeate the literature describing the role of superintendent over the last 150 years (Blumberg & Blumberg, 1985; Callahan, 1962; Cuban, 1976b, 1985, 1988; Glass, 1992; Sergiovanni et al., 1987). Beginning in the 1850s, the first generation of local superintendents made routine inspections and reported their findings to a committee of citizens. By the end of the nineteenth century, the superintendency evolved into an office encompassing more than the occasional inspection of the various buildings within a school district (Cuban, 1988). During the last 150 years, a shift in the relationship between superintendents and school boards occurred, hastened by changes in America.

One such change was the increase in the number of students entering school as a result of industrialization and urbanization during the post-Civil War era (Hersey & Blanchard, 1988). With the influx of more students, part-time school boards found it increasingly difficult to supervise teachers, examine the competencies of students, and purchase needed supplies. Therefore, school boards delegated the role of instructional leader to superintendents, keeping for themselves control over the

business operations of their districts (Konnert &
Augenstein, 1990).

In addition to increased enrollments in public schools,
the evolution of the superintendency was affected by the
progressive movement of the late nineteenth century calling
for sweeping social reform. The social reform movement
received its impetus from the social ills associated with
the Age of Industrialization. Muckraking journalists
exposed the existence of substandard conditions in education
and advocated that schools be managed less by political
entities and more by trained educators. As a result of
social pressures, urban school committees were reorganized
into smaller school boards where members were elected
at-large rather than by wards. During this change of school
board structure, superintendents exercised greater control
than previously experienced over fiscal management of
districts, selection and retention of personnel, development
of curriculum, and maintenance of facilities (Sergiovanni et
al., 1987).

As superintendents gained greater control over school
districts, four initiatives affected the role of the
superintendent starting with the work of Frederick W.
Taylor. Taylor's principles of scientific management,
unveiled in 1911, sought to reduce waste and inefficiency in
industry. These principles were adopted by early

superintendents at the insistence of such noted university leaders as Franklin Bobbitt and Elwood P. Cubberley (Callahan, 1962). As a result, standardized instruction, achievement testing, and uniform curricula were applied to the process of managing schools. It was not by mere coincidence that superintendents began to apply Taylor's principles to the task of educating students. Callahan studied the effects of the scientific management movement on education and found that its influence on superintendents was inevitable because of Taylor's widespread acceptance among corporate leaders, journalists, and school boards.

A second initiative which exerted influence on the superintendency was the human relations movement resulting from the research of Elton Mayo (Hersey & Blanchard, 1988). Starting in 1924, Mayo and his Harvard University colleagues performed their now-famous experiments at the Hawthorne Works of the Western Electric Company in Chicago, Illinois. Mayo discovered that workers controlled the production process independent of the demands and influences of management. This revelation contradicted the managerial practices associated with Taylor's precepts of scientific management. Mayo argued that the authoritarian, task-oriented managerial style must give way to a democratic approach characterized by open lines of communication between management and labor.

As with Taylor's classical management theory which
preceded it, Mayo's ideology of human relations soon gained
widespread acceptance in business and education. Social
conditions associated with the turmoil of the Depression and
the upheavals of World War II contributed to the receptivity
of this new managerial construct. As a result, a belief
took hold among superintendents that identifying the most
efficient methods to improve the performance of their
districts was not enough. The feelings and attitudes of
people employed in their schools needed to be considered as
well. Superintendents were encouraged to provide
opportunities for their subordinates to experience personal
growth by placing employees' needs ahead of the needs of the
organization.

The enthusiasm for the human relations approach
advocated by Mayo lost appeal during the 1950s due to a
belief among organized labor that it was simply a tool used
by management to manipulate and pacify workers. Support for
the philosophy of human relations waned because it seemed to
provide simplistic answers to complex managerial problems
(Etzioni, 1964). In its place, emerged a third major
influence on the American superintendency, namely, the
concept of structuralism. During the decades of the 1950s
and 1960s, superintendents gravitated toward a more

structured view of organizations based on the bureaucratic precepts of Max Weber (Campbell et al., 1985).

Weber first defined the attributes of a bureaucracy which included a hierarchical authority structure, an intricate division of labor which permitted specialization, a rigid governance structure based on extensive rules and regulations, hiring and promotion contingent upon technical competence, the separation of management from ownership, and an impersonal leadership orientation (Campbell et al., 1985). Although proponents of Weberian precepts came to realize that the attributes of a bureaucracy were only present in varying degrees, the totality of these attributes represented a model which explained the interrelationships inherent in a bureaucratic organization.

Weber's model has been criticized for its failure to address the adverse consequences associated with a bureaucracy (Hoy & Miskel, 1991). For example, specialization can promote productive efficiency but also produce boredom. Rational decision making resulting from a rigid governance structure can be offset by a decline in efficiency caused by low morale. In spite of its shortcomings, however, the conceptual constructs of the Weberian perspective deeply influenced superintendents over the past several decades. Anderson (1968) concluded from his research that the schools of the 1960s were organized

around the bureaucratic concepts of Weber. During that time, superintendents sat at the head of formal hierarchies and came to view policy statements and procedural guidelines with great importance. Attempts at staff specialization were promulgated, and school districts sought to act in an autonomous fashion free from community interference.

A fourth factor influencing the evolution of the school superintendency was the open systems concept which eliminated the belief that schools could remain autonomous from the external forces surrounding them. As Sergiovanni et al. (1992) stated

> The riots in the cities in the mid-1960s, the Vietnam War, student unrest, declining student enrollment, the tax revolt, court cases involving state formulas for school funding, emphasis on student achievement on standardized tests, a spate of reports on the inadequacies of our schools, and the increasing number of immigrants--all attest to the politically turbulent nature of education. Superintendents can no longer present themselves as the neutral experts who ought to make technical decisions about schools. Schools were the people's business. (p. 327)

Due to the social unrest associated with the 1960s and 1970s, school superintendents shifted away from a bureaucratic approach to governance and adopted instead an open-systems mindset reflecting a deeper appreciation for the interdependence existing between schools and their environment. The open-systems philosophy represented a blending of Easton's (1965) view of political systems and

the work of Weick (1976) in the area of loosely coupled systems.

The open systems model views the organization as a set of interacting elements influenced by its environment but dependent on that environment as well. In an open system, organizations take inputs from the environment, act upon them, and produce outputs. Schools are open systems which import labor, tax dollars, and children to produce outputs in the form of educated students. In the context of open systems, schools cannot operate in an autonomous fashion. Rather, schools continuously change and adapt to their environment.

As a fourth historical initiative, the open systems concept theorized about new societal conditions which began to impact the contemporary superintendency. Specifically, the expectation that schools needed to become more responsive to the demands of their local communities, state agencies, governmental entities, and pressure groups created a high degree of uncertainty for school districts. Therefore, superintendents were forced to assume the responsibility of orchestrating timely and appropriate responses to a broad spectrum of external influences.

Due to the loosely coupled nature of schools, superintendents recognized that various subunits have their own identity and that interdependence with other subunits in

a school building or district is often infrequent and, at
best, weakly tied (Weick, 1976). Dealing with loosely
coupled subunits in the midst of change and with external
pressure groups has increasingly politicized the
superintendency. The politicizing of the superintendency
over the past 3 decades is a direct result of the
adversarial role promulgated by open systems and loose
coupling. In short, the work of superintendents usually
places them at odds with someone. As Cuban (1985) observed:
"conflict is the DNA of the superintendency. The very
nature of the roles that school chiefs play makes conflict
inevitable" (p. 30).

Although conflict has been interwoven into the fabric
of the superintendency, much has changed in how contemporary
superintendents respond to conflict situations. The
response strategies of today's superintendents reflect the
fact that citizens are better informed regarding current
educational issues and trends. This easy access to
information enables different publics to be much more active
in either supporting or criticizing the leadership exhibited
by their superintendents. Consequently, superintendents
have had to learn how to live with conflict, how to become
skillful at managing and containing conflict, and how to be
accepting of the fact that they are often at the center of
conflict (Goldhammer, 1977).

To summarize, four distinct movements during the twentieth century played a part in shaping the contemporary superintendency. They included the precepts of scientific management, the human relations model, Weber's concept of a bureaucracy, and the constructs associated with open systems.

Conflict Management

The superintendency has been extensively studied from the vantage point of conflict management, and this research speaks about an inevitability to the conflict swirling about the superintendency (Blumberg & Blumberg, 1985; Cuban 1976a/b, 1985; Cunningham & Hentges, 1982; Gross et al., 1958). Dealing with conflict is difficult for superintendents because they often have only limited amounts of time to function as conflict-resolvers due to their many responsibilities and duties. In spite of the constraints of time, however, they are expected to maintain organizational efficiency and deal expediently with conflict in ways that result in a minimum of disruption to the school district.

Superintendents successfully manage conflict by resolving issues of dispute prior to their escalation into confrontational situations. Accordingly, superintendents must possess suitable interpersonal skills in order to remain in communication with those individuals that Cuban (1988) characterized as influential partners. These

partners include school board members, parents, building principals, community representatives, and central office staff. The literature on leadership references the fact that interpersonal skills are a crucial determinant to success because a leader spends an inordinate amount of time interfacing with others. In studying 8 superintendents, Duignan (1980) noted that 70% of their time is spent interacting verbally with other people. This causes Duignan to conclude that the primary role of the superintendent is to act as information conduit for the entire district. Operating as an information conduit depends on the extent to which superintendents are able to establish connections with crucial informants both inside and outside the district.

Several other studies similar in focus to the work of Duignan are revealing in terms of what superintendents routinely do to facilitate the flow of information and expedite communication. In a study of three superintendents, Pitner (1978) observed that nearly 80% of their time was spent verbalizing with others. Pitner concluded that the work day of these superintendents consisted of desk work, phone calls, and many scheduled and unscheduled meetings. Also, Pitner maintained that the information flow managed by superintendents was largely theoretical, legal, or regulatory in nature.

In a study similar to that of Pitner (1978), Feilders (1978) examined the daily activities of one urban superintendent. Employing the ethnographic techniques of repeated observations and interviews, data were collected on how this person spent his time, with whom and at whose request, for how long, and with what means of communication. The results of Feilders' research indicated that most of his time involved brief meetings with staff members and that the majority of his activities were initiated by others. Face-to-face communication was the most commonly-used medium, and personnel matters were most frequently discussed. For this particular superintendent, much of his daily activity centered on processing information, and his predominant role was that of district spokesperson.

In a research approach of a different type, Cuban (1976a) developed case studies of prominent urban superintendents. In summarizing his data, Cuban conceptualized four leadership roles inherent in the superintendency. These roles included the teacher-scholar, the negotiator-statesman, the corporate administrator, and the rational school chief. This analysis of roles by Cuban is in keeping with a broader body of research which analyzes the superintendency from the perspective of manager, politician, and social actor (Armstrong, 1989).

The various roles which superintendents play reflects that their work life consists of daily encounters with other adults. Often these encounters have a symbolic quality because they are representing the school districts before their communities. Illuminating their schools, in a favorable light before the community, demands that superintendents spend a great deal of time interacting with individuals and groups who have the power to influence the quality and direction of education. Additionally, superintendents are the personification of policies for their district because they are immersed in both the development and enforcement of these policies. Consequently, superintendents are often viewed as political figures in their communities.

Lewellen (1983) argued that political roles exist because of disagreements among various factions in society and that certain individuals, whether they be legislators or superintendents, are expected to resolve these disagreements. In the case of superintendents, resolving internal disputes and external complaints, while struggling to maintain a positive rapport with various district stakeholders, leads to frequent confrontation and conflict. Furthermore, research concerning the inevitable political struggles facing superintendents suggests that career patterns and community ethos influence the extent to which

conflicts exists. Carlson (1962) was one of the first
researchers to describe the behavior associated with place-
bound and career-bound administrative career patterns.
According to Carlson, place-bound administrators remain in a
district throughout most of their years in education.
Place-bound superintendents are insiders with a local career
orientation. Career-bound administrators move from district
to district and, in the case of superintendents, have never
served the district in any other capacity. Career-bound
superintendents are outsiders with an orientation toward
professional advancement rather than toward a particular
school district.

School boards tend to select insiders to the
superintendency when they are satisfied with the
relationship of the school to the community and with the
internal administration of the district. Therefore, in
terms of leadership style, insiders tend to resist
organizational change and strive to maintain the status quo
as a way of minimizing conflict (Hoy & Miskel, 1991). In
contrast, outsiders are viewed by school boards as change
agents. As constituents and school boards become
increasingly dissatisfied with their schools, they bring in
an outsider viewed as capable of producing the necessary
changes (Iannaconne & Lutz, 1970). The leadership style of
a superintendent who is an outsider reflects the mandate

given to that individual by the school board to initiate organizational change which, in turn, may be a catalyst for conflict.

Community characteristics and size create a political climate of conflict which impacts turnover rates among superintendents. Researchers such as Zeiglar, Jennings, and Peak (1974) considered the superintendency to be highly political but with varying degrees of conflict. Superintendents in urban districts are surrounded by many constituent groups either supporting or opposing school district policies. Conflict among these groups makes consensus on the ouster of a superintendent difficult which, in turn, contributes to the longevity of some superintendents. In smaller communities, arriving at consensus is less difficult because fewer conflicts exist regarding the work of schools. As long as the actions of superintendents reflect this consensus, they are less likely to come and go.

As previously noted, conflict in the superintendency is due, in part, to career patterns and community size. But schools as loosely coupled, open systems populated by militant subunits add to the conflicted existence of superintendents as well. Teacher representatives stand ready to challenge the expertise of superintendents on educational issues and file grievances for alleged contract

violations. Additionally, various publics are sometimes in a state of turmoil because of the debate surrounding issues ranging from curriculum and instruction to school organization and financing.

How do superintendents contend with the internal and external conflicts they face on a regular basis? The interviews of Blumberg and Blumberg (1985) revealed that superintendents control conflict by narrowly defining the educational agendas of their schools. Other superintendents recognize that conflict is a normal part of community life and attempt to dispel it using conflict resolution strategies. Pearson (1986), on the other hand, speculated that superintendents establish linkages with outside informants by networking with their colleagues. Networking creates opportunities for individuals to disseminate information among peers which may pertain to current innovative trends or provide specific help in solving problems. In addition to keeping superintendents in touch with occurrences in the field of education, networking also serves as a coping resource by providing socially supportive relationships.

Communication Networks

The concept of networks has a familiarity because of the existence of physical networks such as phone systems, streets and highways, and sewer lines (Monge, 1987).

However, communication networks are not as easily recognizable because they involve covert human behavior rather than physical materials. Nevertheless, communication networks as regular patterns of interaction can be analyzed as people routinely exchange information (Borg & Gall, 1989). It is even possible to formulate inferences regarding individuals who are informationally connected and to show linkages between individuals within a network.

Opportunities to view communication networks in action abound in the corporate world. Networking in business has long been a commonplace strategy for establishing "relationships with and between organizational units-- departments, teams, functions, offices, divisions and subsidiaries. And it includes external ties--relationships with customers, suppliers, competitors, investors, and communities" (Baker, 1984, p. xiii). Internal communication networks serve as communication channels within various parts of an organization. Cultivating diverse interorganizational contacts, as espoused by Peters and Waterman (1982), serves as a strategy for accessing vital information about organizational events, problems, opportunities, and decisions.

External communication networks are appreciated by business people as a way of staying informed about what is going on beyond the walls of their own organization. In

short, external networking provides intelligence germane to
"changing customer preferences, a competitor's plans and
actions, social and economic trends, pending regulations,
emergent technologies, and so forth" (Baker, 1984, p. 61).
Internal and external communication networks also embody a
formal and informal texture--formal as in routine meetings
or regularly scheduled encounters, and informal as it
relates to social interactions or phone calls perpetrated
out of a need for technical information.

Analysis of communication networks reveals that
participants can be classified as either stars or isolates.
Stars are individuals with whom a large number of people
communicate. Having a central role in a network suggests
stars are potentially powerful and are thought of as leaders
in a network group (McElroy & Schrader, 1986). In contrast,
isolates are outsiders and are infrequent communicants with
others in the network. The contribution of isolates in
terms of providing information, moral support, or feedback
to others in the network is minimal (Northway, 1967).

In an educational setting, many factors encroach upon
the operation and organization of a school. Examples of
such encroachment include: state and federal mandates,
teacher activism, parental pressures for increased
involvement, technological innovation, and fluctuations in
available economic resources. These and other factors tend

to buffet and propel schools in unplanned directions.
During times of uncertainty, the information-sharing process
becomes crucial to administrators responsible for responding
to changing societal demands.

One of the most important characteristics of the
information-sharing process is the network by which
individuals are connected. The research of Kanter (1983,
1989) and Kotter (1982, 1985) suggested that network
interaction is a prime contributor to individual achievement
and to the accomplishment of organizational outcomes.
Network interaction acts as a communication circuit with the
capacity for a two way exchange of information (Rogers &
Kincaid, 1981). This two-way exchange of information is a
prerequisite for assessing individual and organizational
task performance. Communication is a tool which people can
employ to affect the efficiency and effectiveness of an
organization (Weick & Browning, 1986).

Communication is an integral part of the everyday life
of school administrators. Superintendents and principals
spend a vast amount of their time communicating with others
(Kmetz & Willower, 1982; Martin & Willower, 1981; Pitner &
Ogawa, 1981). Although communication cannot compensate for
poor planning or faulty ideas, communication enables
administrators to evoke action and to facilitate change when
it is combined with sound administrative practices.

Therefore, an understanding of communication offers an additional conceptual framework by which to study the public school superintendency.

Formal and Informal Communication Networks

Communication involves the exchange of information among several individuals for the purpose of reaching a mutual understanding (Rogers & Kincaid, 1981). An exchange of information implies the existence of a relationship over a period of time. Such a relationship is based on a reciprocity of action in which a give-and-take between colleagues ultimately leads to repeated interaction and eventual cooperation.

Communication networks exist as prescribed and emergent structures resulting in formal and informal pattern flows of information. As a prescribed structure, a formal communication network encompasses interactions created by committees, task forces, or organizational hierarchies (Schoonhoven & Jelinek, 1990). Informal communication networks, on the other hand, are emergent to the extent that they involve discretionary patterns of interaction where the pretext for relationships may be work-related, friendship-related, or both. Informal communication networks are purposefully constructed by individuals seeking to achieve organizational or personal goals through

interpersonal ties of sentiment and collegiality (Lincoln, 1982).

Formal communication networks serve as predetermined collection and distribution points for information, and informal communications accomplish the same tasks (Lewis, 1975) by means of information conduits called grapevines (Litterer, 1969). Grapevines exist in and between organizations and provide a channel for bypassing the hierarchical rigidity associated with formal communication. Often a problem can be solved or an issue resolved by accessing or dispensing information informally. For instance, superintendents informally float trial balloons among colleagues to gauge the level of receptivity for a new procedure. In this way, hypothetical possibilities are discussed informally with other superintendents before a final decision is made.

Informal communication networks are useful in combating the uncertainties resulting from the organizational disconnectedness characteristic of loosely coupled, open systems. When uncertainty increases, the acquisition of timely information by individuals and groups within school districts increases in importance as well. From this perspective, the ability to acquire, analyze, and communicate information in a timely and accurate manner is of paramount importance to the overall performance of a

school district. According to Powell (1990), informal networks are more responsive to changing conditions because they are less burdened by the impediments of a hierarchy common to a formal communication network.

Networking Benefits

A basic proposition of social psychology and sociology is that personal relationships influence individual behavior. An explanation for behavioral changes can sometimes be found in the communication networks to which individuals are connected. Evidence that networks matter therapeutically exists among a variety of behavioral research sources.

In summarizing the empirical data of social psychologists, psychiatrists, and physicians, Rogers and Kincaid (1981) offered inferential evidence that social isolation may amount to situations of life-or-death. For instance, the lack of interpersonal relationships serves as an inducement for some individuals to engage in acts of suicide. Medical findings maintain that recovery rates in years beyond a heart attack are lengthened when patients receive support from a wide range of sources. Likewise, recovery rates are more rapid among chronically disabled workers when integrated into family and peer networks. On the other hand, isolates are less inclined to seek medical treatment for health problems such as mental illness. The

fact that networks make a difference therapeutically is further evidenced by behavioral changes over time associated with individuals infused into tight networks such as Alcoholics Anonymous or Weight Watchers.

Numerous personal and organizational benefits accrue from an affiliation with communication networks (Berkman & Syme, 1979; Burt, 1992; Gabarro, 1987; House, 1981; Kotter, 1982; Parker & Asher, 1987). Spanning both internal and external organizational boundaries results in faster promotions, higher paying positions, and more satisfying jobs. Network communication is especially important when individuals are involved in exchanging information to reduce uncertainty, when they are new to a job or an organization, when learning new ideas, or when attempting to understand changing conditions. Also, organizational effectiveness depends as much on developing relationships, interpersonal skills, and communication as it does on an individual's technical skills and abilities.

The question arises, do networks exist? People establish relationships for a variety of reasons, but the most fundamental reason springs from a need to do so. As translated by Wolff and Bendix, Simmel (1923/1922/1955) described this need as sociation, or the universal desire for human interaction. There is, however, more to networking than just the desire to satisfy the need to

belong or to experience human interaction. Networking relationships, as viewed by social exchange theorists, consist of a reciprocity of action in which participants give and receive something so that other benefits can be realized from such relationships (Cook, Emerson, Gilmore & Yamagishi, 1983).

Cohen and Bradford (1990) described three categories of reciprocal benefits inherent to networking relationships. Task benefits apply to job-specific information or technical assistance associated with getting a job done. Relationship benefits consist of peer support, empathy, understanding, and social approval. Inspiration benefits enable individuals to attach meaning to what they do, experience a sense that what they are doing matters, and gain psychic rewards which accompany feelings of achievement. The existence of these benefits allows for a helping and nurturing process to occur among networked individuals by satisfying their on-the-job needs as well as their personal psychological needs.

According to Barnes (1969), the reciprocal benefits accrued in a networking relationship are determined by the structure of the network employed as individuals seek to become communicatively linked. Specifically, networking relationships are structured either symmetrically or asymmetrically. Reciprocity is the cornerstone of

asymmetrical relations causing these interactions to continue to flourish when an overture directed by one partner towards another within a network results in a reverse exchange. In addition, exchanges need not be reciprocated in kind. Power relations, upon which asymmetrical relationships are based, are sometimes marked by an exchange of compliance or deference in return for a share of the resources controlled by others within the network. In contrast, symmetrical relationships are based on kinship linkages, and reciprocity is less meaningful than in asymmetrical relationships (Blau, 1964).

Reciprocity can be simultaneous or delayed. Simultaneous reciprocity provides a two-way flow of advice, information, or support to interacting sets of partners. Even when reciprocity in not simultaneous, the transmitter is often recognized by the receiver as someone who is knowledgeable, wise, and caring. Furthermore, when reciprocity is delayed, social exchanges become grounded in a system of future debits and credits which, in turn, leads to repeated interaction, resulting in the formation of relationships based on cooperation and trust (Coleman, 1990).

Benefits derived from networking can be further explained by the theory of weak ties. In his network study of how people find jobs, Granovetter (1974) theorized that

linkages between close friends are less important in transmitting vital job information because these strongly-tied individuals possess the same information. Instead, job informants of greater benefit are those individuals who constitute weak ties because they are not close friends of the job seekers. The information these weak ties provide is of genuine value because it is new information acquired through interactions which are sporadic in nature. Strong tie networks consisting of close acquaintances circulate old and redundant information, whereas weak ties perpetuate the spread of new ideas to a larger number of people over a greater social distance (Granovetter, 1973).

Career Pathing and the Old Boy Network

The literature on the benefits of networking periodically describes the "old boy" network which acts much like a private club with a controlled entry system (Moody, 1983). Individuals allowed into this informal network provide to one another support intended to facilitate their rise to the top. Most notably, an old boy network offers career pathing assistance in the form of encouragement, advice, sponsorship, and nominations (Armstrong, 1989). Much has been made of the fact that old boy networks contribute to the existence of a so-called "glass ceiling." A glass ceiling acts as an invisible barrier which limits

the upward mobility of women and minorities in spite of
their abilities or job performance. Speculation that old
boy networks perpetuate the glass ceiling abound because the
jargon of kingmaker, protege, and inner circle is frequently
associated with this particular communication system
(Rosser, 1980).

An old boy network has been described by Black and
English (1986) as a mafia-like movement which infiltrated
all fabrics of the American workplace. Specific to
education, they believe that the old boy network coaches and
promotes only those individuals who resemble the "good old
boys" (p. 111). Hence, few females or minorities ascend to
the superintendency. Although not likening old boy networks
to the mafia, the research of Kanter (1977, 1983, 1989),
Ortiz (1981), and Shakeshaft (1987) supported the notion
that a circle of professional and social acquaintances is
equally important for aspiring male or female
administrators.

Beginning with the decade of the 1980s, the theme of
female networks as a reaction to old boy networks began to
creep into the networking literature. Out of a recognition
that female networks exist elsewhere beyond the realm of
education, women aspiring to become school administrators
were urged to form supporting networks. Kanter (1977)
speculates that women seeking to advance their

administrative careers could do so by forming close inner circles empowered to provide mutual aid and support. Shakeshaft (1987) argued that a visible support group which provides information, feedback, and moral support is needed if female administrators are to successfully compete with the old boy network for existing job openings.

Although networking got its start in the context of job seeking and led to the formation of old boy networks, opinions vary as to its value as a job placement mechanism. Clearly, a belief exists among many administrators that sponsorship by an old boy network is a valuable commodity in the context of their career advancement. There is little doubt that some aspiring superintendents have benefitted from the support of important colleagues, informal coalitions of university professors, and influential past acquaintances. However, an argument can also be made that sponsorship extended by an old boy network to a favored group of administrators results in barriers preventing equally talented individuals from gaining access to these same administrative positions. In the case of female administrators, it is clear that the absence of sponsors from their own gender necessitates that they seek career pathing support from their male counterparts.

The Superintendency and Network Organization

Due to their job responsibilities and the isolation within which they operate, a natural need exists for superintendents to establish the supporting relationships that networking offers (Armstrong, 1989). School districts, like other hierarchical organizations, are characterized by a vertical flow of information up and down the chain-of-command structure. In a vertical communication arrangement, the transfer of information upward between superiors and subordinates provides a means of accountability. For this reason, such communication is sometimes skewed by subordinates in the direction of the positive and away from the negative (Glauser, 1984). Thus, superintendents sitting at the top of a vertical information structure routinely face the dilemma of occasionally receiving inaccurate subordinate feedback on the operational status of the district.

A vertical information flow throughout a school district can be likened to a strong tie network. As previously discussed, individuals of similar backgrounds or values communicate with routine frequency. Although such communication is easily accomplished, it is often superficial and dysfunctional in terms of the dissemination of new ideas. Therefore, superintendents must balance their communication between the similarity fostered by vertical

communication and the dissimilarity of networking with other superintendents.

When superintendents call upon their peers for information and support, a formal or informal communication network is established. Of the two network structures, informal communication networks are the most facile in the diffusion of information. This diffusion is made possible because of the weak ties prevalent in an informal communication network. As Granovetter (1974) wrote describing strong tie acquaintances:

> Those to whom one is closest are likely to have the greatest overlap in contact with those one already knows, so that the information to which they are privy is likely to be much the same as that to which one already has. (pp. 52-53)

The importance of an informal communication network of superintendents rests upon the fact that it is a personal network which is a weakly-tied linkage of peers who do not continuously interact with each other (Rogers & Kincaid, 1981).

Communication Network Analysis

Network analysis is an intellectual tool which makes possible high level descriptions of a social structure under investigation. The social structure being investigated is represented as a network consisting of social system members (nodes) and the interconnections (ties) of these members. Nodes are usually associated with individuals or groups, but

they can also represent categories such as households, school districts, corporations, or nations. Ties identify information flows, symmetrical and asymmetrical relationships, or other structured interactions between nodes (Knoke & Kuklinski, 1982).

Network analysis can take many forms depending on the researcher's theoretical base and investigative concern. The research design constructed by the network analyst generates data which describe the communication structure within a network. The description includes information about structural differentiation, specifically, individual communication roles such as stars or isolates. Network analysis also reveals the existence of cliques which are important elements in a communication structure (Richards, 1985; Rogers & Kincaid, 1981).

Before gathering data, network researchers determine the social organization from which they will draw their subjects. Most network studies analyze small social organizations such as schools, classrooms, gangs, communities, and social clubs because of their clearly defined parameters and easily defined populations (Moreno, 1953; Rogers & Kincaid, 1981). After selecting the subjects, the linkages to be investigated are identified. The most common networking relationship to be studied consists of linkages between nodes by which feelings towards

one another are expressed. Linkages between individuals as both transmitters and receivers of information are frequently analyzed, as are relationships which involve the efforts of people to connect for the purpose of securing job information, advice, or access to a social movement (Granovetter, 1974; Hunter, 1979; Lin, 1982; Rogers & Kincaid, 1981)

The investigation of organizational communication entails such methods as participant observation, continuous recording, and communication surveys which measure frequency, openness, and accuracy (Borg & Gall, 1989; Hoy & Miskel, 1991). The most frequently used means for collecting network data is a sociometric questionnaire designed to measure a group's social structure and the status of each member in that group.

Following the post-World War II translations of Simmel's work (see Simmel, 1923/1922/1955; Wolff, 1950), American sociologists gained a familiarity regarding how the interconnectiveness of social systems impacts human behavior. American interest in the structure of social systems stimulated efforts to visually depict interpersonal relations and to describe the patterns of these linkages. Sociometric researchers started using sociograms to represent interactions in small groups. Eventually, research topics ranging from the dissemination of

information to the diffusion of disease became part of a burgeoning social network phenomenon (Coleman, Katz, & Menzel, 1966; Rogers & Kincaid, 1981).

Beginning in 1951, the sociometric movement found its way into the American school setting (Armstrong, 1989). Sociometry became a means of assessing the attraction or repulsion students express towards each other (Lindzey & Byrne, 1968). Likewise, teachers and administrators were asked to indicate the frequency and importance of interactions with other staff members. Formal and informal communication networks were mapped, first by simple sociograms and later by more sophisticated computer-generated analyses.

Network Analysis Methodology

Three perspectives on the examination of networks contribute to an understanding of the communication groupings among members of a social system. These three perspectives are: diffusion of information, social interaction analysis, and cluster analysis.

The perspective of information diffusion among connected individuals serves as one approach by which to engage in an analysis of communication networks. Information passes between persons to the extent that this information is appreciated for its importance. Therefore, the examination of a network entails the study of an

information flow among members of the same group. The degree to which information is embraced by the receiver in a group is directly related to the prestige of the sender (Rogers & Kincaid, 1981). The challenge for the network analyst is to ascertain which attributes possessed by certain individuals within a network enhances their prestige in the eyes of their peers. According to Armstrong (1989), these attributes often include "their personification of certain values, their competence, their occupation of a strategic position within the group, and their contacts outside the group" (p. 31).

Another factor contributing to the diffusion of information among networked individuals is the opinion leadership exerted by persons occupying positions of status within an information sharing system. Opinion leadership implies the existence of a leader-follower relationship between two or more people in which the leader is recognized as someone who is technically competent, socially accessible, and a personification of the system's norms (Rogers & Shoemaker, 1971). Closely related to opinion leadership is the reference group theory which explains the effects of friendships and collegial relationships on an individual's willingness to accept or reject information (Merton, Brown, & Cottrell, 1959).

Rogers and Shoemaker (1971) provided further insight into information diffusion by explaining the homophily-heterophily factor. Homophily is the degree of interaction between individuals of similar attributes and heterophily is the degree to which individuals of different attributes interact. Although human communication occurs most often among homophilous individuals, the diffusion of new information and innovative ideas is the product of communication links which are heterophilous. Lastly, the factor of communication proximity also impacts the exchange of ideas among communicatively-linked individuals. The general findings of several network studies attests to the importance of narrow distances as a determining variable regarding who talks to whom (Blau, 1977; Festinger, Schachter, & Back, 1950; Fischer, Jackson, Streuve, Gerson, & Jones, 1977).

The perspective of social interaction analysis provides a second approach by which to examine communication networks. From this vantage point, the focus is upon the relationships which connect individuals rather than on the individual attributes of these persons. The social structure of groups may be based on friendship or because of hierarchies may be based on some degree of prestige. Connective linkages may also offer opportunities to lead or be led, to experience emotionally supportive relationships,

or to gain higher degrees of competence by accessing the knowledge or expertise of others (Armstrong, 1989).

The results of studying social networks across a variety of settings indicates that these communication patterns are extraordinarily complex. A social network is not singular in design but consists of overlapping and interrelated relationships. The importance of these relationships rests upon the fact that understanding the complexity of social networks leads to an interpretation of the behavior of the persons involved (Marsden, 1982).

The third perspective which makes possible the study of communication networks is cluster analysis. Cluster analysis consists of statistical techniques used in identifying groups unknown at the outset of the clustering process. For example, Chapter 3 describes a methodology which will be used in collecting data comparing Iowa's public school superintendents on the attributes of group affiliation, accessibility, status, and task relationship. Based on the responses gleaned from a sociometric survey included with this study, sociograms were constructed depicting superintendents who claim to be communicatively linked (Armstrong, 1989). The process just described is in keeping with the principles of cluster analysis which dictates that the description of similarities among a

diverse group of individuals be based on a predetermined criteria composed of several different variables.

Summary

The networking literature abounds with descriptions of communication linkages between individuals sharing a common background. The literature is also replete with descriptions of how networking provides individuals with the power to access needed information and achieve status as a reliable source of information. Opportunities to utilize networking as a mechanism for obtaining moral support, for engaging in social interaction, and for securing career pathing information are also common themes in the authoritative literature. Abundant evidence permeates the literature in support of the conclusion that personal and professional needs are satisfied through the networking process.

Although information regarding the demographics and duties associated with the office of public school superintendent pervade the literature, little mention is made of the networking which transpires among those who hold this office. As a result, a gap exists regarding the relationship between networking and the superintendency because of the relative silence of the literature in this regard. Therefore, the need to address the lack of

knowledge about the informal communications between superintendents is very apparent.

CHAPTER 3

DESIGN OF THE STUDY

Introduction

A study analyzing peer relationships of superintendents was the subject of a doctoral dissertation completed by Armstrong (1989) at Washington State University. What interested Armstrong was "the extent to which a superintendent network exists, what the network looks like, and to what extent superintendent attributes such as age, ethnicity, gender, salary, years of experience, and size of school influence the network" (p. 5). The data gathering instrument used in the Armstrong study was a self-reporting sociometric survey distributed to 299 superintendents in the state of Washington. Conclusions contained in the study were based on information provided by the superintendents who responded at a rate of 89%.

In addressing the need for further study, Armstrong (1989) noted "the need to further examine the network among public school superintendents in this state as well as other states" (p. 92). Therefore, the research conducted here was a replication of the Armstrong study regarding the existence of an informal communication network among public school superintendents in Iowa. In response to Armstrong's suggestion that future studies take on a broader focus, the attribute of task relationship was included to determine

whether it has any impact on the informal networking of Iowa's public school superintendents.

Methodology

In duplicating Armstrong's (1989) research design, a self-reporting sociometric survey was mailed to all superintendents in Iowa. Sociometry is a research tool which first gained favor with the publication of Who Shall Survive? (Moreno, 1953), and ever since it has been used in the analysis of group relationships. As the popularity of the sociometric method grew, researchers started using network diagrams called sociograms to represent interpersonal relations in small groups. For example, the construction of sociograms enabled epidemiologists to begin viewing the dissemination of disease as a social networking phenomenon. Likewise, social analysts have used sociograms to illustrate the networking characteristics of information dissemination (Coleman et al., 1966; Rogers & Kincaid, 1981). Sociometry has been routinely applied to many types of social gatherings including corporations, communities, government bodies, and educational institutions.

As Northway (1967) stated: "A sociometric test is a means for determining the degree to which individuals are accepted in a group, for discovering the relationship which exist among these individuals, and for disclosing the structure of the group itself" (p. 3). Data generated by a

self-reporting sociometric test result in a demographic
description of the population surveyed. Further analysis of
the data is made possible by means of choice matrices and
the creation of sociograms. Choice matrices uncover
underlying role relationships in a social structure through
the analysis of who chooses whom within a population
(Armstrong, 1989). Sociograms, in turn, depict visually
"the social status of individuals, their predominating
interpersonal relations, and the structure of the group as a
whole" (Northway, p. 28).

The Population Studied

The purpose of this study was to describe the informal
communication network of public school superintendents in
the state of Iowa. The networking relationship among Iowa
superintendents was examined by exploring the connections
which existed between them based on the factors of group
affiliation, accessibility, status, and task relationship.
All superintendents employed by Iowa school districts in
December 1995 received a sociometric survey pertaining to
themselves and their districts. Superintendents serving two
districts in a shared capacity received only one survey in
order to avoid a duplication of responses.

The Sociometric Test

The survey instrument used to gather data in this study
(see Appendix A) reflected the standard approach taken by

sociometric researchers to measure the social structure of a group and the social status of individuals with respect to others in their group. Although there are a number of different techniques used for the collection of sociometric data, the typical method consists in asking group members to select persons in the group most preferred on the basis of a specific criterion (Northway, 1967). Therefore, the survey included questions which required superintendents to identify those individuals they perceived of as colleagues and as educational leaders. In addition, five questions were asked of the respondents regarding those superintendents they contacted when in need of information or support.

The Survey Instrument

When conducting research consisting of a self-reporting survey instrument, a high percentage of returns is desirable in order to maintain the reliability of the accumulated data. Certain elements such as the length of the survey, overall general appearance of the instrument, and the ease of completion are crucial to the rate of return (Dillman, 1978). In order to avoid the construction of a laborious questionnaire, the questions were framed in a language that respondents would find easy to understand. With the exception of a question pertaining to the advantages and disadvantages associated with networking, all other questions were in closed form so that only certain responses

were possible. The use of closed questions facilitated the quantification and analysis of the results.

Questions asked of Iowa's superintendents in the sociometric survey focused on four attributes, three of which formed the basis of Armstrong's (1989) study. Armstrong provided the following description of these three attributes:

> Affiliation denotes individuals as members of certain groups by nature of their gender, ethnicity, age, or attendance at similar institutions. Accessibility to particular members of a group is made through proximity or actual geographic distance between individuals or their districts. Status for individuals may be gained through recognition within a group as determined by position in that group. Salary, size of district, years of respected service, and quality of program with the school district are some determiners of status. (p. 40)

The fourth attribute of task relationship determined which superintendents were named on the basis of personal qualities they exhibited as contrasted by those superintendents named because of the performance skills they possess.

The survey consisted of 18 questions of varying types and purposes. The first four questions inquired about the respondents' group affiliation by asking them to indicate their gender, ethnicity, age, and the institution from which they received their most recent degree. Question 5 addressed accessibility by asking superintendents to identify the area education agency (AEA) serving their

districts. The attribute of status was the focus of Questions 6-8 by asking of superintendents their years of experience as a superintendent, the number of years of service in their current district, total year of experience as a superintendent, current salary, and the certified enrollment of their districts. In the next seven questions the superintendents were asked to respond to inquiries relating to collegiality (Question 9), leadership (Question 10), technical information (Questions 11-14), and emotional or moral support (Question 15).

Question 16 added informational richness to the study by soliciting the names of superintendents residing outside of Iowa who were routinely contacted by Iowa superintendents. Question 17 elicited the extent to which respondents agreed or disagreed with a statement about the beneficial effects of networking. Question 18 further enriched the study by providing respondents with an opportunity to discuss what they perceived to be the advantages and disadvantages associated with networking. The inclusion of Question 18 reflected a sensitivity to the subjects participating in this study. Specifically, it provided to superintendents who are non-participants in the network an opportunity to ventilate their feeling regarding their non-participation.

Field Testing the Survey

In 1988 a pilot study involving Idaho school superintendents was initiated to field test the survey instrument and procedures incorporated into the data-gathering phase of the Armstrong (1989) study. Because the survey and related procedures used with Iowa's public school superintendents were highly similar to that of the Washington State University study, no such field test of superintendents from surrounding states was undertaken. This decision was based on the belief that the Iowa study incorporated the most reliable features of the Armstrong survey which emanated from the comments and suggestions provided by the Idaho superintendents during the pilot study.

The decision against duplicating Armstrong's (1989) pilot study was not meant to presume that field testing the Iowa survey was unnecessary. To the contrary, field testing the Iowa survey and its accompanying procedures was crucial to detecting ambiguities which might have adversely impacted the quality of the data to be collected. Therefore, a limited field test was conducted with a sample population similar to the Iowa superintendents targeted as the research subjects of this study. Specifically, 10 individuals who formerly served as public school superintendents in Iowa were identified and asked to serve as field test subjects.

The 10 subjects recruited to participate in the field test were retired Iowa superintendents, former practitioners engaged in doctoral studies, individuals affiliated with area education agencies (AEAs), and ex-superintendents employed at the central office level or in the private sector.

The pretesting procedures allowed for the refining of a survey attractive in appearance and easy to complete. Additionally, because the procedures for administering the pretest were the same as for the study itself, procedural improvements which resulted were incorporated into the main study. In order to ensure that the pretest generated useful feedback, the following advice of Borg and Gall (1989) was also taken into consideration:

> The pretest form of the questionnaire should provide space for respondents to make comments about the questionnaire itself so they may indicate whether some questions seem ambiguous to them, whether provisions should be made for certain responses that are not included in the questionnaire and other points that can lead to improving the instrument. (p. 435)

Borg and Gall (1989) further suggested a procedure in which field test subjects are "asked to repeat their understanding of the meaning of the question in their own words" (p. 435). Of the 10 field test subjects, 4 (2 males and 2 females) were observed completing the survey and were asked to orally provide feedback as they were responding to the various questions. Along with providing immediate

verbal reactions to the survey instrument, these
observations provided insight into the difficulties
encountered by the pretest subjects as they formulated their
responses.

Collecting of the Data

When engaged in survey research, the generalizability
of the conclusions generated by the data is enhanced by
higher degrees of participation on the part of the sample
population. In accordance with Linsky (1975) who maintained
that contacting potential respondents before sending a
survey increases the response rate, a first contact in the
form of a short advance-notice letter (see Appendix B) was
mailed to all superintendents.

The sociometric survey constituted the second mailing
and included a personalized cover letter (see Appendix C)
explaining the purpose of the study, offering an assurance
of confidentiality, and stressing the importance of the
information being provided. A third mailing included a
reminder letter (see Appendix D) and a second copy of the
survey, both of which were sent to those superintendents who
failed to return the first questionnaire. The three
mailings were dispatched over a three-week time span in
December 1995.

Treatment of the Data

Following the collection of data from among Iowa's
public school superintendents, a multi-step analytical
process similar to that of the Armstrong (1989) study was
undertaken. First of all, a general discussion of the
descriptive data provided a demographic understanding of
Iowa's superintendent population. Secondly, the statistical
process of ANOVA (analysis of variance) was used to generate
F ratios for the variables associated with the attributes of
group affiliation, accessibility, and status. As a third
step, choice matrices charting the degree of connectedness
for all superintendents based on the attributes of group
affiliation, accessibility, and status were constructed.
Fourthly, the attribute of task relationship was examined
through a comparative analysis of the naming responses
elicited by Question 9 (most respected colleagues) and
Question 10 (effective leadership qualities) with the
namings generated by Questions 11-15 (information and
support).

A fifth analytical step consisted of sociograms
designed to represent Iowa superintendents whose degree of
connectedness was judged important in understanding the
statewide network based on the attributes of group
affiliation, accessibility, or status. Using Northway's
(1967) suggestion that males and females in a sociogram be

depicted differently, circles represented male
superintendents and rectangles the female superintendents.
In this way, visual renditions of superintendents clustered
in cliques or who functioned within the network as stars or
isolates were produced.

Presenting the Findings

In keeping with the four research questions framing
this study, an analysis of the data for the variables of
gender, ethnicity, age, most recent degree earned, area
education agencies (AEAs), total years of experience as a
superintendent, current salary, and school district
enrollment was presented. To achieve clarity of meaning for
this data, minimum and maximum ranges, percentages, and
measures of central tendency (mean and medium) were included
where appropriate.

The ensuing discussion of the data pertaining to the
superintendents' gender, ethnicity, age, and institution
granting the most recent degree or superintendent
endorsement constituted the attribute of group affiliation.
Having superintendents identify the area education agency
(AEA) serving their districts defined the attribute of
accessibility or geographic proximity. The attribute of
status was determined by salary, years of experience as a
superintendent, and the size of school districts as
determined by student enrollment. The attribute of task

relationship was examined to determine those superintendents named only as respected colleagues and effective leaders as compared to those who were actually identified as sources of information or support. All of this data was obtained from a self-reporting survey distributed to 361 public school superintendents in Iowa.

As a way of further analyzing the importance of individual superintendents within the network, respondents to the sociometric survey were asked to prioritize their naming responses. They did so by indicating superintendents to be their first, second, or third choices relative to the seven sociometric questions pertaining to respected colleagues, effective leadership, technical information, and moral support. Accumulated sociometric data reflecting the naming choices elicited from Iowa's public school superintendents generated a description of the network related to its stars, isolates, and cliques.

The naming choices among superintendents throughout Iowa were investigated by means of choice matrices designed to include the names of Iowa superintendents upon a vertical and horizontal axis in each matrix. The intersection of these names resulted in the formation of cells representing choice opportunities. By so doing, a connectedness ratio, which is the total number of actual choices divided by the total choice opportunities minus the cells in which the

subjects named themselves was calculated (Armstrong, 1989).

Once the connectedness ratios were determined, a table was

constructed presenting these ratios for the attributes of

group affiliation, accessibility, and status.

As data for this study were being accumulated, each

Iowa public school superintendent was codified with a number

to create a degree of anonymity. This codification system

made possible the creation of sociograms which represented

pictorially the actual choices existing among

superintendents. The creation of sociograms depicted the

degree of connectedness which illustrated the impact of

group affiliation, accessibility, and status on the informal

networking patterns of Iowa public school superintendents.

For example, a sociogram pertaining to group affiliation was

constructed to reflect the connectedness ratio among Iowa

female superintendents. Likewise, two sociograms

accompanied the analysis of accessibility by depicting the

connectedness ratios among superintendents whose districts

are served by different area education agencies (AEAs).

In all, nine sociograms were included as part of the

data analysis discussion and the design of each remained the

same with arrows representing the namings occurring between

superintendents. A single-headed arrow represented a

one-way naming, and a double-headed arrow depicted a

co-naming indicative of a reciprocal relationship. Because

sociograms served as a visual display of selected
sub-populations, the absence of arrows between circles (for
males) and rectangles (for females) "does not indicate that
no namings occurred, rather that those individuals may have
named other superintendents not within the stated
sub-populations" (Armstrong, 1989, p. 56).

Summary

In order to describe the networking relationships among
public school superintendents in Iowa, a self-reporting
sociometric survey was used to gather the necessary data.
The survey allowed for a description of a statewide network
by means of the demographic data it generated. In addition,
respondents to the survey provided names of fellow
superintendents they viewed as respected colleagues and
leaders or as sources information and support. The survey
also solicited from the respondents their views on the
degree to which networking was beneficial and the advantages
and disadvantages of networking.

All of the namings provided by the respondents were
collated and the frequency distributions resulting from the
assemblage of this data discussed. A comparison of the
attributes of group affiliation, accessibility, and status
resulted from the computation of connectedness ratios and
the design of sociograms. Likewise, naming patterns
associated with the attribute of task relationship were also

described. In this way, conclusions were drawn regarding how extensive the network was across the state of Iowa and the degree to which the four attributes of group affiliation, accessibility, status, and task relationship were responsible for the connectiveness patterns discovered during the course of this research.

CHAPTER 4

REPORTING THE DATA

Introduction

The purpose of this study was to describe the informal communication network of Iowa's public school superintendents. To achieve this purpose, a self-reporting sociometric survey was mailed to 361 superintendents in December 1995. Consistent with the statistical analyses discussed in Chapter 3, treatment of the data was undertaken using SPSS/PC Studentware Plus and the spreadsheet and draw capabilities of Microsoft Works 3.0. The statistical analyses employed in this study made possible a presentation of three main data sets. The first had to do with the demographics of the superintendency in Iowa. The second dealt with the attributes of group affiliation, accessibility, status, and task relationship as discussed in the context of the research questions formulated for this study. The third involved connectedness ratios as depicted by the sociograms.

The Population Surveyed

The population surveyed in this study consisted of all superintendents (N = 361) at work in Iowa in December 1995. A total of 269 superintendents returned the survey mailed to them, which represented a return rate of 74.5%. Among the 269 respondents, 11 superintendents returned blank surveys

and indicated that they wished not to participate for various reasons. These reasons included an unfamiliarity with other superintendents because of their newness to Iowa, an unwillingness to name names or prioritize names, concerns about how the data were going to be reported, or questions regarding the importance of this study.

Because 11 superintendents asked not to be included, the discussion which follows was drawn from the responses of 258 superintendents or 71.5% of all potential participants ($\underline{N}$ = 361). Because of the nature of sociometry, some non-respondents were included in this study by virtue of the fact that they were named by others. Therefore, the description of Iowa's informal communication network is not confined just to the networking activities among the 258 superintendents who volunteered information. Instead, the description went beyond those returning surveys to include many of the superintendents who did not respond but were named by their colleagues.

Profile of Respondents

In Tables 1-11, demographic characteristics of 258 public school superintendents employed in Iowa school districts during the 1995-96 school year are summarized. In Table 1, respondents are clustered into three categories according to the types of superintendencies prevalent in Iowa. As illustrated in the table, 1.2% of the respondents

(Not Provided) opted not to indicate the category to which they belonged. From among the rest of the respondents, 89.1% were employed in their districts as superintendents, 8.1% as shared superintendents, and 1.6% as interim superintendents.

Table 1

Types of Superintendencies of Responding Iowa Superintendents

Type	Frequency	Percent	Cum Percent
Not Provided	3	1.2	1.2
Superintendent	230	89.1	90.3
Shared Superintendent	21	8.1	98.4
Interim Superintendent	4	1.6	100.0
Total	258	100.0	

In Table 2, the highest degree earned by the respondents beyond the bachelor's degree is listed. Among all respondents, 0.8% did not divulge this information. Superintendents with master's degrees constituted 22.9% of the total respondents as compared to the 46.9% who earned their specialist's degree. Doctoral degrees, on the other hand, were earned by 29.5% of the respondents.

Table 2

Highest Degree Earned by Responding Iowa Superintendents

Degree	Frequency	Percent	Cum Percent
Not Provided	2	0.8	0.8
M.A.	59	22.9	23.7
Ed.S	121	46.9	70.5
Ph.D/Ed.D	76	29.5	100.0
Total	258	100.0	

In Table 3, the respondents are reported to be overwhelmingly male at 96.9%. The percentage of female respondents was 3.1%.

Table 3

Gender of Responding Iowa Superintendents

Gender	Frequency	Percent	Cum Percent
Male	250	96.9	96.9
Female	8	3.1	100.0
Total	258	100.0	

In Table 4, the ages of the superintendents are organized into 10-year increments starting with age 30-39. Among the 258 respondents, 0.8% declined to share their age. Iowa's youngest superintendents are between the ages of 30-39, and they composed the next smallest category of respondents at 3.9%. Superintendents aged 40-49 represented 36.0% of all respondents, and the percentage of respondents aged 50-59 was 46.5%. Iowa's oldest superintendents in the 60-69 category responded at a rate of 12.8%

Table 4

Age of Responding Iowa Superintendents

Age	Frequency	Percent	Cum Percent
Not Provided	2	0.8	0.8
30-39	10	3.9	4.7
40-49	93	36.0	40.7
50-59	120	46.5	87.2
60-69	33	12.8	100.0
Total	258	100.0	

In Table 5, the characteristics of race and ethnicity are displayed. The three individuals who elected not to provide information on their race or ethnicity constituted

1.2% of all respondents. One individual, or 0.4% of the respondents, self-identified as Indian-Alaskan. No respondents indicated their race to be black or hispanic. The remaining 254 superintendents, or 98.4% of all respondents, designated their ancestry to be caucasian.

Table 5

Race and Ethnicity of Responding Iowa Superintendents

Race/Ethnicity	Frequency	Percent	Cum Percent
Not Provided	3	1.2	1.2
Indian-Alaskan	1	0.4	1.6
Black	0	0	1.6
Caucasian	254	98.4	100.0
Hispanic	0	0	100.0
Total	258	100.0	

In Table 6, superintendents are organized into 5-year increments corresponding to the years during which they completed the necessary academic requirements to receive the superintendent's endorsement. As in previous tables, a small percentage of respondents (3.5%) failed to provide the information requested. During the 20-year period of 1955-1975, 27.9% of the respondents received their endorsements.

The breakdown of these 2 decades included: 0.8% in 1955-59,
3.1% for 1960-1965, 6.2% between 1966-1970, and 17.8% of the
respondents during 1971-1975. From 1976-1995, 66.3% of all
respondents obtained their endorsements qualifying them to
become superintendents in Iowa. During that 20-year period,
14.7% of the respondents were endorsed between 1976-1980,
23.3% between 1981-1985, 17.4% from 1986-1990, and 10.9%
during 1991-1995. The 6 persons included in the 1996-2000
category have yet to complete their endorsement programs,
and they represent 2.3% of the respondents.

In Table 7, a listing of the universities attended by
the respondents pursuant to the acquisition of their
superintendent's endorsement is offered. Excluding the 2.7%
who opted not to provide this information, 57.0% of the
respondents attended universities in Iowa as compared to the
40.3% who attended universities outside the state. The
percentage of respondents who attended in-state universities
is as follows: 13.2% at the University of Iowa, 19.0% at
Iowa State University, 11.6% at the University of Northern
Iowa, and 13.2% at Drake University. The category entitled
Other was reserved for those respondents (40.3%) who
attended out-of-state universities. Although it was not
included in the table, data supplied by the 104 respondents
in this category indicated that 90.3% of these individuals
obtained their endorsement from universities located in one

Table 6

Completion of Superintendent Endorsement Programs by
Responding Iowa Superintendents

Time Interval	Frequency	Percent	Cum Percent
Not Provided	9	3.5	3.5
1955-1959	2	0.8	4.3
1960-1965	8	3.1	7.4
1966-1970	16	6.2	13.6
1971-1975	46	17.8	31.4
1976-1980	38	14.7	46.1
1981-1985	60	23.3	69.4
1986-1990	45	17.4	86.8
1991-1995	28	10.9	97.7
1996-2000	6	2.3	100.0
Total	258	100.0	

of the contiguous states of Missouri, Nebraska, South
Dakota, Illinois, Minnesota, or Wisconsin.

In Table 8, the years of experience the respondents
have garnered as superintendents was highlighted. The
survey question used to gather this information asked for
total years of experience and did not request that the years
be disaggregated according to school districts, time spent

Table 7

<u>Universities Attended for Superintendent's Endorsement by</u>
<u>Responding Iowa Superintendents</u>

University	Frequency	Percent	Cum Percent
Not Provided	7	2.7	2.7
University of Iowa	34	13.2	15.9
Iowa State University	49	19.0	34.9
U. of Northern Iowa	30	11.6	46.5
Drake University	34	13.2	59.7
Other	104	40.3	100.0
Total	258	100.0	

in Iowa, or experience gained outside of Iowa. When the superintendents are looked at collectively (excluding the 6.2% in the Not Provided category), the percentage of respondents in the two groups with the least amount of experience is nearly equal. Specifically, 22.5% of the responding superintendents are in the 0-5 year category, as compared to 20.5% in the 6-10 year range. Among the more experienced superintendents, the number of respondents in the next three categories differ more dramatically. Superintendents with 11-20 years experience made up the single largest group of respondents at 31.0%. Considerably

Table 8

Total Years of Experience of Responding Iowa Superintendents

Years	Frequency	Percent	Cum Percent
Not Provided	16	6.2	6.2
0-5	58	22.5	28.7
6-10	53	20.5	49.2
11-20	80	31.0	80.2
21-30	46	17.8	98.1
31-40	5	1.9	100.0
Total	258	100.0	

fewer respondents can be found in the 21-30 range at 17.8%
and, as might be expected, only 1.9% of the respondents have
amassed 31-40 years of experience.

In Table 9, the respondents' years of experience as
superintendents in their current districts are denoted. As
in previous tables, a small percentage of respondents (5.0%)
elected to withhold this information. For the majority of
superintendents who did supply this data, the label of
newcomer seems appropriate because 54.7% of the respondents
have 5 years or less experience in their current district.
An additional 20.5% of the respondents have slightly more
longevity with 6-10 years of experience. As can be noted in

the table, the percentage of respondents in each of the four categories, starting with 11-15 years, becomes smaller and smaller. In the 11-15 category are found 8.9% of the respondents, followed by 5.4% with 16-20 years of experience, 4.7% in the 21-25 category, and 0.8% at 26-30 years.

Table 9

Years of Experience of Responding Iowa Superintendents in Their Current Districts

Years	Frequency	Percent	Cum Percent
Not Provided	13	5.0	5.0
0-5	141	54.7	59.7
6-10	53	20.5	80.2
11-15	23	8.9	89.1
16-20	14	5.4	94.6
21-25	12	4.7	99.2
26-30	2	0.8	100.0
Total	258	100.0	

In Table 10, the distribution of respondents according to salary is revealed. Somewhat surprisingly, only 0.8% of the respondents wished not to disclose their salary range.

For superintendents on the lower end of the salary
continuum, 5.0% of the respondents earned less than $50,000,
and 29.5% received salaries in a range of $50,000-59,999.
The single largest block of respondents by salary were the
36.4% found in the $60,000-69,999 category. The data
further reveals what might be expected in that the highest
salaries were paid to the fewest respondents. In other
words, 18.2% of the responding superintendents paid between
$70,000-79,999 were followed, in turn, by 5.4% of the
respondents in the $80,000-89,999 category, and by the
remaining 4.7% whose salaries were above $90,000.

Table 10

Salaries of Responding Iowa Superintendents

Salary in $	Frequency	Percent	Cum Percent
Not Provided	2	0.8	0.8
Less than 50,000	13	5.0	5.8
50,000-59,999	76	29.5	35.3
60,000-69,999	94	36.4	71.7
70,000-79,999	47	18.2	89.9
80,000-89,999	14	5.4	95.3
Above 90,000	12	4.7	100.0
Total	258	100.0	

In Table 11, the respondents are classified according to the size of their school districts starting with 3.5% of the respondents in the Not Provided category. After that, the data support the notion that Iowa is composed of many small school districts exemplified by the fact 19.8% of the respondents work in districts with less than 500 students, and an additional 41.9% are employed in districts whose enrollments are in the 500-999 range. Next in line at 27.5% are the respondents whose districts have enrollments in the 1,000-2,999 range. In districts larger in size than the ones just cited, the percentage of respondents fluctuates starting with 4.7% in the 3,000-4,999 category followed by 0.8% respondents in the 5,000-9,999 category. In the three categories reserved for the districts with the most students, the percentages are quite low with 1.6% in the 10,000-19,999 category, 0% in the 20,000-29,000 category, and 0.4% in the 30,000-39,000 category.

Tabulation of Naming Responses

The survey instrument employed in this study included seven sociometric questions. Each question asked the respondents to provide a first choice, second choice, and third choice naming response. Therefore, if three names were supplied for each of the seven questions, 21 total responses were possible. All 361 Iowa superintendents were coded by number, so if named, their identities could be

Table 11

Enrollments Reported by Responding Iowa Superintendents

Enrollment	Frequency	Percent	Cum Percent
Not Provided	9	3.5	3.5
000-499	51	19.8	23.3
500-999	108	41.9	65.1
1,000-2,000	71	27.5	92.6
3,000-4,999	12	4.7	97.3
5,000-9,999	2	0.8	98.1
10,000-19,999	4	1.6	99.6
20,000-29,999	0	0	99.6
30,000-39,999	1	0.4	100.0
Total	258	100.0	

safeguarded throughout the reporting process. A table was constructed which contained descriptive statistics generated from the naming patterns of the 258 respondents.

In Table 12, first the frequency of naming responses from 0 to 21 are reported. This range reflects the survey used with this study which allowed respondents to supply a maximum of 21 names. Across this range of naming possibilities, the mean for the 258 respondents was 11.721, the median was 11.500, and the mode was 21.000. Also within

Table 12 a summary is shown of the frequency of first, second, and third choices. Because seven naming questions were included in the survey, each individual who responded could provide a maximum of seven first, seven second, and seven third choices. As displayed in Table 12, first choices had a mean of 4.620, a median of 5.000, and a mode of 7.000. The frequency of second choices was a mean of 3.915, a median of 4.000, and a mode of 2.000. Third choice responses are shown to have a mean of 3.190, a median of 3.000, and a mode of 2.000.

Table 12

Namings (Total, First Choice, Second Choice, and Third Choice) Provided by Each Respondent

Namings	Mean	Median	Mode
Total (0-21)	11.721	11.500	21.000
First Choice (0-7)	4.620	5.000	7.000
Second Choice (0-7)	3.915	4.000	2.000
Third Choice (0-7)	3.190	3.000	2.000

Note. Valid cases = 258. Missing cases = 0.

Further inspection of the naming data revealed that 299 superintendents were identified by their peers as networking

contacts. This suggested an expansiveness to the network because 82.8% of all Iowa superintendents were named by their colleagues. The degree to which all superintendents in Iowa were named ranged from 0 namings for 62 superintendents to a high of 96 namings for one superintendent. The average number of namings for each of the 299 individuals included in the network was 8.4.

The sociometric data in the form of naming responses was organized around the attributes first described in Chapter 1. The attributes of group affiliation, accessibility, status, and task relationship constituted the basis by which the four research questions investigated in this study were formulated. In order to discuss the relative effects that group affiliation, accessibility, and status had upon the network, the variables associated with each of these attributes were subjected to an analysis of variance (ANOVA). In testing the mean (11.721) for the naming responses provided by the 258 respondents separated according to the variables of age, gender, ethnicity, graduate schools attended, area education agencies (AEAs), experience, salary, and enrollment, F ratios at the .05 level were computed. The end result of these computations was significant F ratios for the variables of gender (f = 3.95) and salary (f = -2.87).

As a way of pinpointing exactly where differences existed among the superintendents grouped according to salary, the Tukey-b multiple comparison test was employed. This procedure was needed because the analysis of variance (ANOVA) undertaken did not specify which of the means for salaries differed significantly from one another. Therefore, Tukey-b (a post hoc t-test) was used as a way of determining these differences.

In reporting the Tukey-b results, all of the group means were arranged from smallest to largest in rows and columns. Pairs of means that differed at the .05 level were marked with an asterisk. The data reported in Table 13 displays the significant differences in means between Group 1 (less than $50,000) when compared to Group 2 ($50,000-59,999), Group 3 ($60,000-69,999), and Group 6 (above $90,000). No significant difference, relative to Tukey-b, existed for Group 4 ($70,000-79,999) or for Group 5 ($80,000-89,999). The Tukey-b multiple comparison test was not performed on the means for gender because this variable consisted of only two means (for males and females). Tukey-b can only be used when three or more groups of means are present.

Sometimes the use of inferential statistics, as in the case of ANOVA and Tukey-b, either illuminates the meaning of the differences in sample means or further mystifies such an

Table 13

Tukey-b Multiple Comparison Test of Means by Salary Groups

Mean	Group	Group					
		1	5	2	4	3	6
6.4615	Grp 1 (Less than $50,000)						
10.5714	Grp 5 ($80,000-89,999)						
11.5395	Grp 2 ($50,000-59,999)	*					
11.5745	Grp 4 ($70,000-79,999)						
12.4468	Grp 3 ($60,000-69,999)	*					
13.4167	Grp 6 (Above $90,000)	*					

interpretation. The revelation that differences existed between the mean for Group 1 and the means for Group 2, Group 3, and Group 6 is of so little importance that it raises more questions than answers. Consequently, only minimal significance can be ascribed to the Tukey-b results contained in Table 13.

Connectedness Ratios

The research undertaken in this study was intended to determine the extent to which the informal communication network of Iowa's public school superintendents was influenced by group affiliation, accessibility, status, and

task relationship. In furtherance of that end, four research questions were formulated:

1. Is there an association between the attribute of group affiliation and the participation of Iowa public school superintendents in an informal communication network?

2. Is there an association between the attribute of accessibility and the participation of Iowa public school superintendents in an informal communication network?

3. Is there an association between the attribute of status and the participation of Iowa public school superintendents in an informal communication network?

4. Is there an association between the attribute of task relationship and the participation of Iowa public school superintendents in an informal communication network?

In order to reach a determination relative to the first three research questions, a choice matrix upon which 361 Iowa superintendents were located horizontally and 258 respondents were located vertically was constructed. Within this statewide choice matrix, a total of 92880 cells were created from the intersection of the names placed upon the X and Y axes. Each of these cells represents the possible location of naming response totals.

The construction of a statewide choice matrix resulted in the computation of a connectedness ratio which served as an indicator of the networking activity prevalent among Iowa

superintendents. As a way of determining the statewide connectedness ratio, the total number of actual choices supplied by the respondents was divided by the total number of possible choices minus the cells resulting from the intersection of the columns and rows upon which the names of all 258 respondents were located. The procedure just described resulted in a 0.036 statewide connectedness ratio.

By itself a connectedness ratio lacks meaning unless it becomes a number capable of being compared to other numbers like itself. Consequently, a series of connectedness ratios were tabulated and displayed in Table 14 for the variables found among the attributes of group affiliation, accessibility, and status. In this way, a congruent description of the informal communication network was made possible using a common standard of measurement.

Research Question 1

Is there an association between the attribute of group affiliation and the participation of Iowa public school superintendents in an informal communication network?

As shown in Table 14, certain subsets within a variable displayed a higher degree of connectedness when compared to other subsets from the same categorical listing. For example, within the variable of gender, the connectedness among females was computed to be 0.198, and the connectedness ratio for males was 0.035. Also the higher

Table 14

Connectedness Ratios of Namings Among Responding Iowa

Superintendents

Attributes	Connectedness Ratio
Group Affiliation	
Gender	
Male superintendents	0.035
Female superintendents	0.198
Age	
30-39	0.009
40-49	0.035
50-59	0.272
60-69	0.043
Graduate school attended	
University of Iowa	0.043
Iowa State University	0.060
University of Northern Iowa	0.060
Drake University	0.039
Other (out-of-state)	0.030
Accessibility	
Area education agencies (AEAs)	
AEA 1 (25 districts)	0.228
AEA 2 (25 districts)	0.167
AEA 3 (20 districts)	0.500
AEA 4 (14 districts)	0.567
AEA 5 (32 districts)	0.263
AEA 6 (16 districts)	0.255
AEA 7 (25 districts)	0.379
AEA 9 (22 districts)	0.214
AEA 10 (33 districts)	0.178
AEA 11 (56 districts)	0.105
AEA 12 (25 districts)	0.200

(table continues)

Attributes	Connectedness Ratio
Area education agencies (AEAs)	
AEA 13 (32 districts)	0.235
AEA 14 (22 districts)	0.313
AEA 15 (24 districts)	0.151
AEA 16 (13 districts)	0.479
Status	
Total experience in years	
0-5	0.017
5-10	0.041
11-20	0.049
21+	0.040
Salary in dollars	
50,000-59,999	0.018
60,000-69,999	0.037
Salary in dollars	
70,000-79,999	0.075
80,000+	0.209
Enrollment	
0-499	0.022
500-999	0.024
1000-2999	0.054
3000+	0.347

Note. All superintendents statewide showed a connectedness ratio of 0.036.

connectedness ratio for females when compared to the statewide connectedness ratio of 0.036 was indicative of a

possible female network. The fact that the connectedness ratio for females far exceeded the statewide ratio was consistent with the earlier reporting of ANOVA calculations in which a statistical difference was noted.

When connectedness ratios were computed according to age, 30-year-olds and 50-year-olds stood out within this variable. The connectedness ratios of 0.009 for the 30-39 category and 0.272 for the 50-59 category were more noteworthy when compared to the statewide ratio of 0.036 than were the ratios of 0.035 and 0.043 computed for the 40-49 or 60-69 categories respectively. In other words, the 30-39 year old superintendents were the least connected, and the 50-59 year old superintendents were the most connected. Likewise, in viewing the variable of graduate school attended, it was determined that networking was slightly more common between superintendents who attended Iowa State University and among superintendents associated with the University of Northern Iowa because each group had a connectedness ratio of 0.060. Because the ratios attributed to the University of Iowa (0.043), Drake University (0.039) and the Other category (0.030) were only slightly above or below the statewide ratio, networking based on university affiliation was even less of a factor for these three groups of superintendents.

Research Question 2

Is there an association between the attribute of
accessibility and the participation of Iowa public
school superintendents in an informal communication
network?

When the connectedness ratios for Iowa's fifteen area

education agencies (AEAs) were determined, all were found to

be well above the statewide ratio of 0.036. The presence of

AEA connectedness ratios which exceeded the statewide ratio

lends credence to the notion that proximity is a

contributing factor to a higher degree of networking among

superintendents within a given geographical area. Stating

this finding in another way, the presence of AEA

connectedness ratios which exceeded the statewide ratio

supported the assumption contained in the networking

literature that proximity is a contributing factor to a

higher degree of networking among individuals within the

same geographical area.

As depicted in Table 14, AEAs 3, 4, 6, and 16 are the

smallest of Iowa's 15 area education agencies (AEAs). Of

these four AEAs, the connectedness ratios for AEA 3 (0.500),

AEA 4 (0.567), and AEA 16 (0.479) were found to be the

highest. High connectedness ratios attributable to three of

the smallest AEAs might be the by-product of a familiarity

caused by repeated interactions among superintendents less

encumbered by the challenge of establishing a broad range of

acquaintances among many colleagues within the same AEA.

Research Question 3

Is there an association between the attribute of status and the participation of Iowa public school superintendents in an informal communication network?

A review of connectedness ratios for the categories of

Salary and Enrollment revealed that a strong connection

existed among those superintendents earning the most money

($80,000+) and serving the largest districts (3000+

students). With this being the case, the question to be

asked is whether this condition constituted the existence of

an old boy network among a selected group of Iowa

superintendents. Although the notion of an old boy network

among Iowa superintendents will be discussed later, the

connectedness ratios of 0.209 for superintendents earning

$80000+ and 0.347 for superintendents in districts with

3000+ students draws attention to the fact that extensive

networking exists between superintendents capable of

wielding considerable influence.

A Discussion of Task Relationship

The fourth attribute featured in this study is that of

task relationship first described in Chapter 1. Task

relationship was examined to determine whether a hierarchy

based on personal qualities rather than on performance

skills existed among Iowa superintendents. In short, an

inquiry was initiated to ascertain if superintendents named

on the basis of collegiality and leadership differed from superintendents named as sources of information or support.

Research Question 4

Is there an association between the attribute of task relationship and the participation of Iowa public school superintendents in an informal communication network?

In an effort to examine the attribute of task relationship, the names supplied by the respondents to Questions 9 and 10 in the survey were compared with the names provided for Questions 11-15. Questions 9 and 10 pertained to the qualities of collegiality and leadership; Questions 11-13 related to technical information on issues of budget, personnel, and curriculum and instruction. In a slightly different vein, Question 14 sought the names of superintendents who might supply career pathing information or support, and Question 15 asked for the names of superintendents called upon for emotional and moral support.

The comparison undertaken relative to the names supplied for each of the seven survey questions attempted to determine if the names elicited by Questions 9 and 10 differed from the names provided as responses to Questions 11-15. If the assumption held true that individuals recognized for their personal qualities were not the same persons called upon for information or support, a significant proportion of superintendents named as respected

colleagues and effective leaders (Questions 9 and 10) would not be named as informational contacts (Questions 11-14) nor be sought out for the emotional or moral support (Question 15) they might provide.

From the vantage point of which questions caused the most superintendents to be named, Question 15 (emotional and moral support) evoked from the respondents the names of 216 superintendents. Based on this response pattern, it appears that Iowa superintendents seek from their peers emotionally supportive relationships rather than interactions based around the exchange of information. Question 9, which asked the respondents to provide the names of their most respected colleagues, resulted in the naming of 203 superintendents. When asked to identify three effective leaders (Question 10), 171 superintendents were so named by responding superintendents.

Four questions on the survey sought the names of superintendents judged to be reliable sources of information. Question 12, which dealt with superintendents contacted regarding personnel issues, elicited 185 names. For Question 13, which pertained to curriculum and instruction, 157 names were supplied. When superintendents were asked in Question 14 to identify those colleagues they contacted in search of career information or support, 140 names were provided. The need for budget information

(Question 11) resulted in the fewest superintendents named at 138.

The attribute of task relationship tested the assumption that the personal qualities and task skills of Iowa's superintendents equated differently in the minds of their fellow superintendents. In other words, individual superintendents upon whom respect was bestowed because of certain personal qualities were not the same individuals contacted for the information or support they might provide. Thus, an analysis was initiated to pinpoint whether naming patterns showed a distinction between those superintendents named as most respected colleagues and effective leaders (personal qualities) when compared with those named as contacts due to the technical and career advancement information or emotional and moral support they share with others.

To determine if the assumption of separate namings held true, the superintendents named in Question 9 (most respected colleagues) and Question 10 (effective leadership qualities) were compared with the namings for Questions 11-15. The procedure was undertaken to ascertain the proportion of superintendents who were named not only for their personal qualities but for their task skills as well. The proportion which resulted from such a comparison was .702 which indicated that 70% of all superintendents named

in Question 9 and 10 also surfaced in Questions 11-15.
Stating this result another way, 30% of the superintendents
were named solely on the basis of their personal qualities
and not because they served as direct networking contacts.
These findings contradicted the prevailing assumption found
in the networking literature because the proportion (.704)
seems to be higher than expected if, in fact, peers seek
others because of what they know as opposed to who they are.

Stars

As a way of further testing the assumption of separate
namings based on task relationship, the stars of the network
were examined to determine the rate at which this group was
named either because of their personal qualities, task
skills, or both. As discussed in Chapter 1, stars have the
highest degree of connectedness to others in a communication
network. Identifying from among Iowa's 361 superintendents
those persons deemed to be stars served as another avenue by
which to describe the network. The designation of star,
conferred upon superintendents who were named by their peers
a minimum of 25 times, resulted in 23 superintendents
receiving such a designation. The 25 namings received by
superintendents became the criteria for labeling
individuals as stars because that naming total was three
times higher than the 8.4 namings averaged by the 299
superintendents included in the network.

When the namings for each star were analyzed, a proportional breakdown question by question was calculated. When this was done, it was found that .592 of the namings the stars received were for Questions 9 and 10. Therefore, almost 60% of the stars' namings were based on the perceptions held of them as respected colleagues or effective leaders, rather than as people contacted for information or support. Conversely, 40% of the stars' namings were responses to Questions 11-15 which were a measure of their roles as direct networking contacts. The findings just described are more in keeping with the assumption of separate namings underpinning the attribute of task relationship. Namely, it is less likely that superintendents admired for their personal qualities also served as sources of technical information or support. Were this not the case, the proportion of naming responses for Questions 11-15 would be much higher than the observed rate of 40%.

Who were the stars of the network? Superintendents who qualified as stars were found in many of Iowa's larger districts and in several smaller districts. Located within Iowa's 100 largest districts were 20 stars, of whom 9 served districts among the top 20 in enrollment. Conversely, 3 of the stars were from districts with an average enrollment of 736.

All the stars of the network were males, and only two were shared superintendents. The leading star was a superintendent who received 96 namings. His district is located in northwest Iowa and ranked as the sixth smallest district among the 25 districts headed by a star. The superintendent who received the second highest number of namings was listed 75 times, and the average number of namings for all the stars was 41.3.

When the location of the stars was examined geographically, they were found to be widely dispersed throughout Iowa. As a way of pinpointing the stars' school districts, two highways served as lines of demarcation. U.S. Highway 30 bisects the state starting in the west near the Missouri River and continuing eastward to the Mississippi River. Interstate 35 passes through Iowa from the Minnesota border southward to the Missouri border. These two highway systems intersect north of Des Moines in central Iowa and create four quadrants nearly equal in size. By plotting the location of each star's district within one of these four quadrants, it was found that 8 reside in northwest Iowa, 7 in northeast Iowa, 5 in southeast Iowa (which includes the Des Moines metropolitan area), and 3 in southwest Iowa. Among the school districts located in Iowa's nine largest cities having a population of 50,000 people or more, 5 stars are leaders of these districts.

Five of the seven questions included in the survey sent
to all public school superintendents in Iowa asked them to
divulge in order the names of those superintendents
contacted for information or support. Table 15 was
constructed to summarize the naming patterns produced by
these questions. When the Total Namings column is reviewed,
keep in mind that 361 superintendents were on the job in
1995-96. Consequently, the numbers in this column reflect a
duplication of names as supplied by the respondents. Having
said that, an examination of Questions 11-15 revealed that
Question 15, which pertained to emotional and moral support,
generated the most namings with a total of 410 first,
second, or third choices. Question 12, which dealt with the
issue of personnel, had the next highest number of total
namings at 379.

When superintendents were asked in Question 11 to name
their budgeting contacts, 366 namings resulted. Slightly
less networking activity existed in the area of curriculum
and instruction to the degree that 359 namings accompanied
Question 13. The least amount of networking interaction was
found in the area of career advancement information. Only
250 naming choices were offered by the respondents to
Question 14.

As previously noted, 23 superintendents emerged as
stars of the network because they were named at least 25

Table 15

Networking Patterns for All Superintendents as Determined by Survey Questions 11-15

Question	Superintendents Named	First Choices	Second Choices	Third Choices	Total Namings
Question 11 (Budgeting)	138	149	123	94	366
Question 12 (Personnel)	185	162	122	95	379
Question 13 (Curriculum/Instruction)	157	145	135	79	359
Question 14 (Career Advancement)	140	109	85	56	250
Question 15 (Emotional/Moral Support)	216	173	137	100	410

times by their peers. When the existence of stars was first discussed, it was stated that almost 60% of their namings were as responses to Question 9 (most respected colleagues) and Question 10 (effective leadership qualities). What about the namings which constituted the remaining 40%? Table 16 offers a breakdown of naming responses specific to the stars of the network. As sources of budgeting information (Question 11), stars were named just over 10% of

the time. Slightly over 9% of their namings related to issues of personnel (Question 12), and the namings for career advancement information (Question 14) made up another 8%. Approximately 7% of the namings connected stars to the role of a curriculum and instruction contact person (Question 13), and stars as providers of moral and emotional support (Question 15) generated the fewest namings at a rate of only about 6%.

Table 16

Networking Pattern for Stars as Determined by Survey Questions 11-15

Questions	Proportion of Namings
9 and 10 (Collegiality and Leadership)	.592
11 (Budgeting Information)	.101
12 (Personnel)	.091
13 (Curriculum and Instruction)	.074
14 (Career Advancement)	.081
15 (Emotional or Moral Support)	.061

Networking Patterns of a Different Sort

A data set of information germane to a pattern of networking by Iowa superintendents with non-Iowa

superintendents is represented in Table 17. In Table 17, the extent to which the respondents contact superintendents residing outside of the state is summarized. This information became available because Question 16 asked respondents to identify non-Iowa superintendents with whom they maintain contact. Although 66.7% responded that they did not network with non-Iowa superintendents, 33.3% confirmed that their networking extends beyond the borders of Iowa. Where asked to do so in Question 16, Iowa superintendents listed networking contacts in 26 states.

Table 17

Out-of-State Networking Contacts of Responding Iowa Superintendents

Networking	Respondents	Percent	Cum Percent
Out-of-State	86	33.3	33.3
No Out-of-State	172	66.7	100.0
Total	258	100.0	

Related to the issue of networking with non-Iowa superintendents, 113 respondents revealed that they maintain networking relationships with non-superintendents. The persons identified by the respondents as sources of

information or support included retired superintendents, attorneys, business managers, curriculum directors, area education agency personnel, university contacts, and Iowa Department of Education staffers. It should be noted that this information was not specifically solicited in the survey disseminated as part of this study. It was merely provided by the respondents through written comments offered somewhere on the survey, or by the actual naming of names along with the work they do and the organizations to which they are affiliated.

Description of Sociograms

Sociometric calculations in the form of connectedness ratios were determined according to the attributes of group affiliation, accessibility, and status. Naming patterns for the variables within these three attributes were examined to discover their relative effects on the overall network. Following this examination, sociograms were constructed for the variables in which connectedness ratios significantly surpassed the statewide ratio of 0.036 or because certain networking patterns which were depicted provided a forum by which to discuss idiosyncracies common to the network. Nine sociograms--by gender (female superintendents), by ethnicity, by age (30-39 and 50-59), by area education agencies (AEA 7 and AEA 11), by salary ($70,000-79,999 and

$80,000+), and by enrollment (3,0000+)--are included along with descriptions of each.

The construction of each sociogram is similar in that males are represented by circles and females by rectangles. Single-headed arrows conveyed one-way namings, and co-namings, indicative of stronger reciprocal relationships, are denoted by double-headed arrows. Arrows extending outwardly away from a superintendent (but not connected to another circle) denote extraneous naming activity. For instance, in the female sociogram (Figure 1), superintendent 243 named seven superintendents as part of her networking clique. Two were reciprocated (93 and 207) and five were directed toward superintendents outside the various cliques which composed the female subgroup. In several sociograms, an effort was made to enhance their readability by including only one inward/outward arrow. With each arrow, a number was attached as a way of conveying the fullest extent of the networking activity engaged in by the superintendents shown.

The placement of the circles and rectangles within the sociogram followed a consistent pattern. Within each sociogram the superintendents with the highest number of namings statewide are positioned in the approximate center with other superintendents radiating outwardly as determined by the overall number of namings they received. The further superintendents and the cliques surrounding them are from
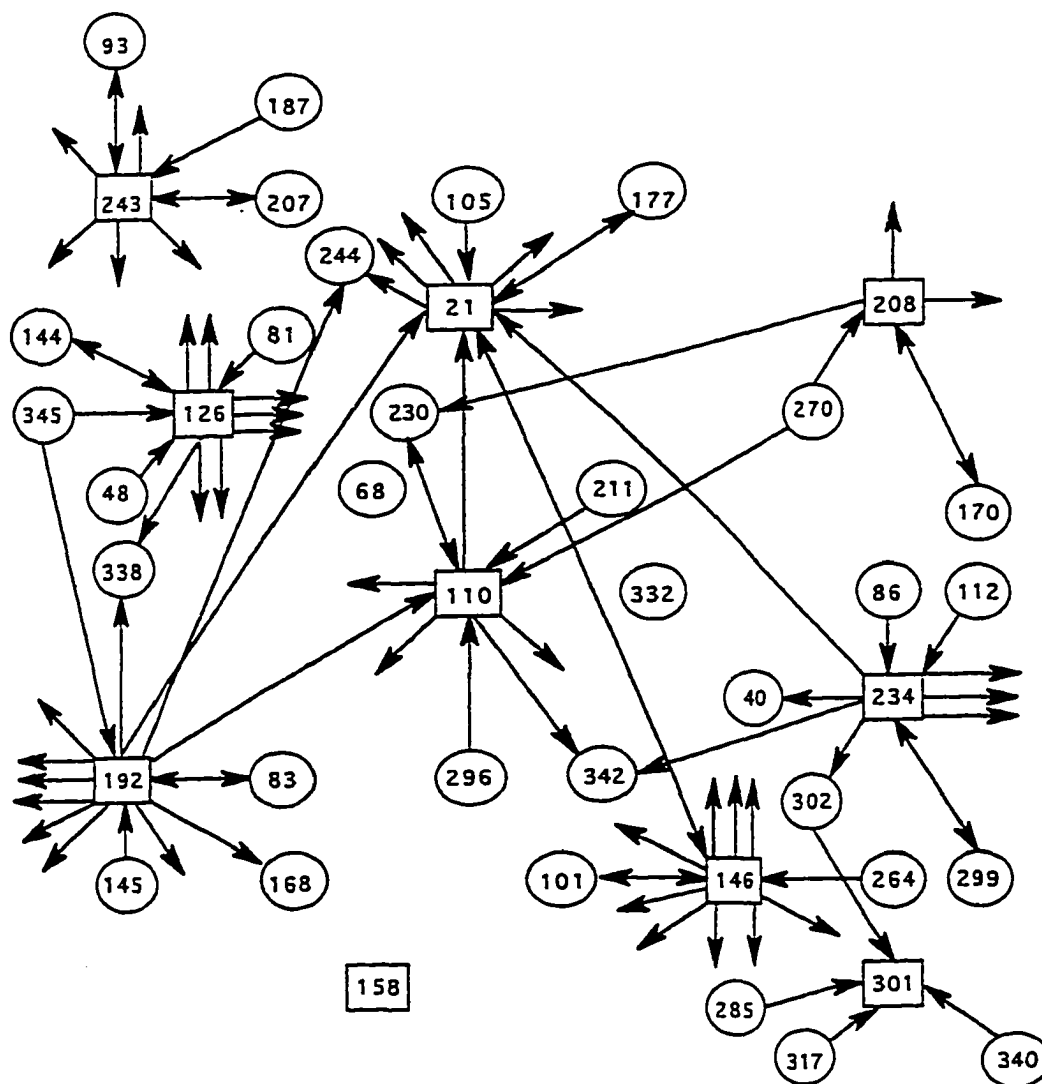
Figure 1.

Sociometric connections among female superintendents (0.198 connectedness).

the center was the result of fewer total namings. Circles or rectangles without arrows symbolize the isolates within a specific subgroup. However, the absence of arrows is not meant to suggest that these superintendents failed to name other colleagues or were not named by their peers. Rather, they are not communicatively linked to anyone from the subgroup visualized by a particular sociogram.

Group Affiliation

The variables for group affiliation are gender, ethnicity, age, and graduate school attended. A sociogram was constructed for female superintendents along with two for the age categories of 30-39 and 50-59. The sociograms for the two age groups are included for discussion because they exhibit the lowest and highest connectedness ratios within the category of age. Although a connectedness ratio for ethnicity was not computed, a sociogram of the only individual in this subgroup is included. Because the connectedness ratios by graduate schools attended were not considered significant, sociograms for this subgroup were not constructed.

Figure 1 represents the sociogram designed to convey connectedness among the female superintendents. Note that four one-way namings (234-21, 110-21, 192-21, 192-110) and a single co-naming (21-146) reflect the extent of networking between Iowa's 10 female superintendents, designated by

rectangles. At the center of Figure 1 is superintendent 110 who was named 14 times by other Iowa superintendents. Although this constituted the most namings for any female superintendent, the 14 namings were as responses to Question 9 (most respected colleague) and Question 10 (effective leadership qualities). Therefore, this pattern of responses indicates that superintendent 110 was not looked upon by her peers as a source of technical information or support.

When the responses of the 8 female superintendents were examined, it was found that superintendent 192 was the only female to name superintendent 110. Superintendent 21, on the other hand, was named by 110, 192, 234, and 146. Unlike 110 who was viewed solely as a most respected colleague and effective leader, superintendent 21 was named five times as a source of curriculum and instruction information (Question 13), once as a source of career advancement information (Question 14), and twice as a source of emotional or moral support (Question 15). Further scrutiny of Figure 1 also reveals two isolates of varying degrees. Superintendent 158 is completely isolated from her female colleagues as is Superintendent 243. In the case of superintendent 243, however, she is part of a clique of male networking contacts.

As regards the variable of ethnicity, only one superintendent from among the 258 respondents claimed to be

of a non-white ethnic origin. Figure 2 is a visual representation of this particular individual. Although not one of the 23 network stars, superintendent 207 is an active networking participant. As shown in the sociogram, linkages existed between superintendent 207 and 14 other superintendents. In all, the personal network of superintendent 207 consisted of five co-namings (63, 97, 243, 285, 288) and nine one-way namings. Among the co-namings, superintendent 243 is the only female included as part of this superintendent's network. The data showed the communication relationship between these two superintendents as highly reciprocal in that superintendent 207 named superintendent 243 six times, whereas superintendent 243 named superintendent 207 seven times.

A sociogram for the namings applicable to the age category of 30-39 was constructed because this group's connectedness ratio of 0.009 was the lowest calculated for any subgroup studied (see Table 14). These namings for Iowa's youngest superintendents are displayed in Figure 3. In this sociogram, the 10 superintendents who composed the 30-39 subgroup are 26, 68, 84, 86, 243, 276, 285, 305, 314, and 348. The other superintendents shown by number either named one or more of the ten superintendents in question or were themselves named by someone from this group of ten as a way of forming linkages to other cliques. The arrows
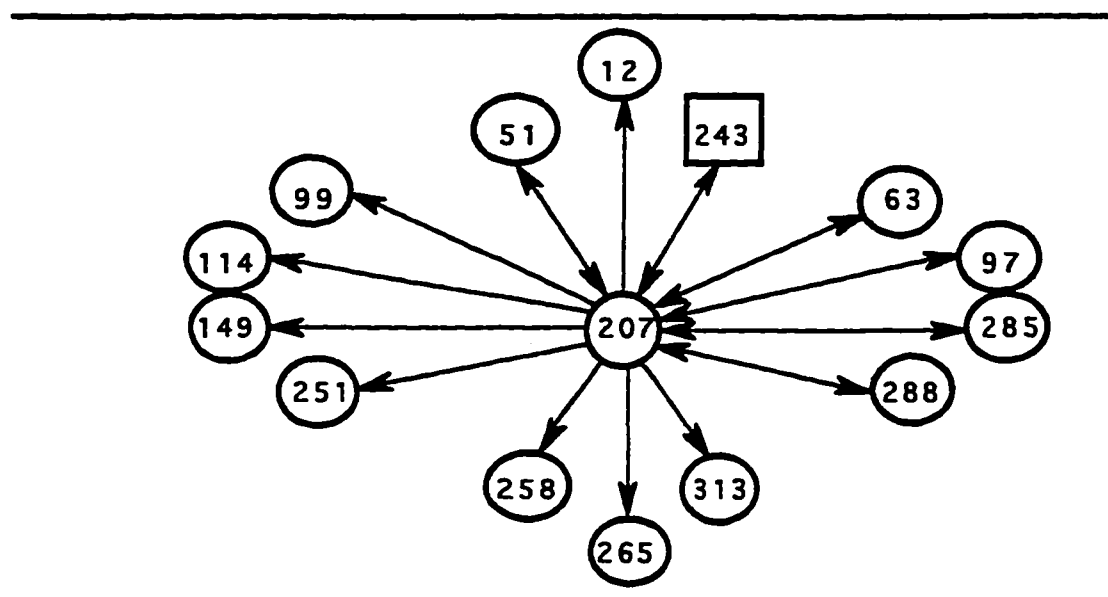
Figure 2.

Sociometric connections of a non-white ethnic superintendent.

radiating outwardly symbolized additional namings of superintendents who were not communicatively linked to others within this subgroup.

From a broad perspective, the 10 superintendents depicted in Figure 3 are isolated from their same-aged peers with only superintendent 314 and superintendent 285 connected to each other. In this instance, the connection is both direct via a co-naming and indirect through superintendent 349. Other indirect connections were supplied by superintendent 124 who connected superintendent 26 to superintendent 68 and by superintendent 181 who connected superintendents 26 and 305. In similar fashion, superintendents 68, 86, and 276 were indirectly linked by superintendent 48, and superintendent 232 provided an indirect connection for superintendents 276 and 243.

When the female sociogram (Figure 1) was discussed, superintendent 243 was characterized as an isolate relative to her female peers. It was noted, however, that she was part of a clique composed of male counterparts. As can be observed in Figure 3, this clique consists of eight superintendents, seven represented as one-way namings and one as a co-naming. Superintendent 348 is the lone isolate among the thirty-year-olds having named nine superintendents, although none of those named were part of the 30-39 subgroup.
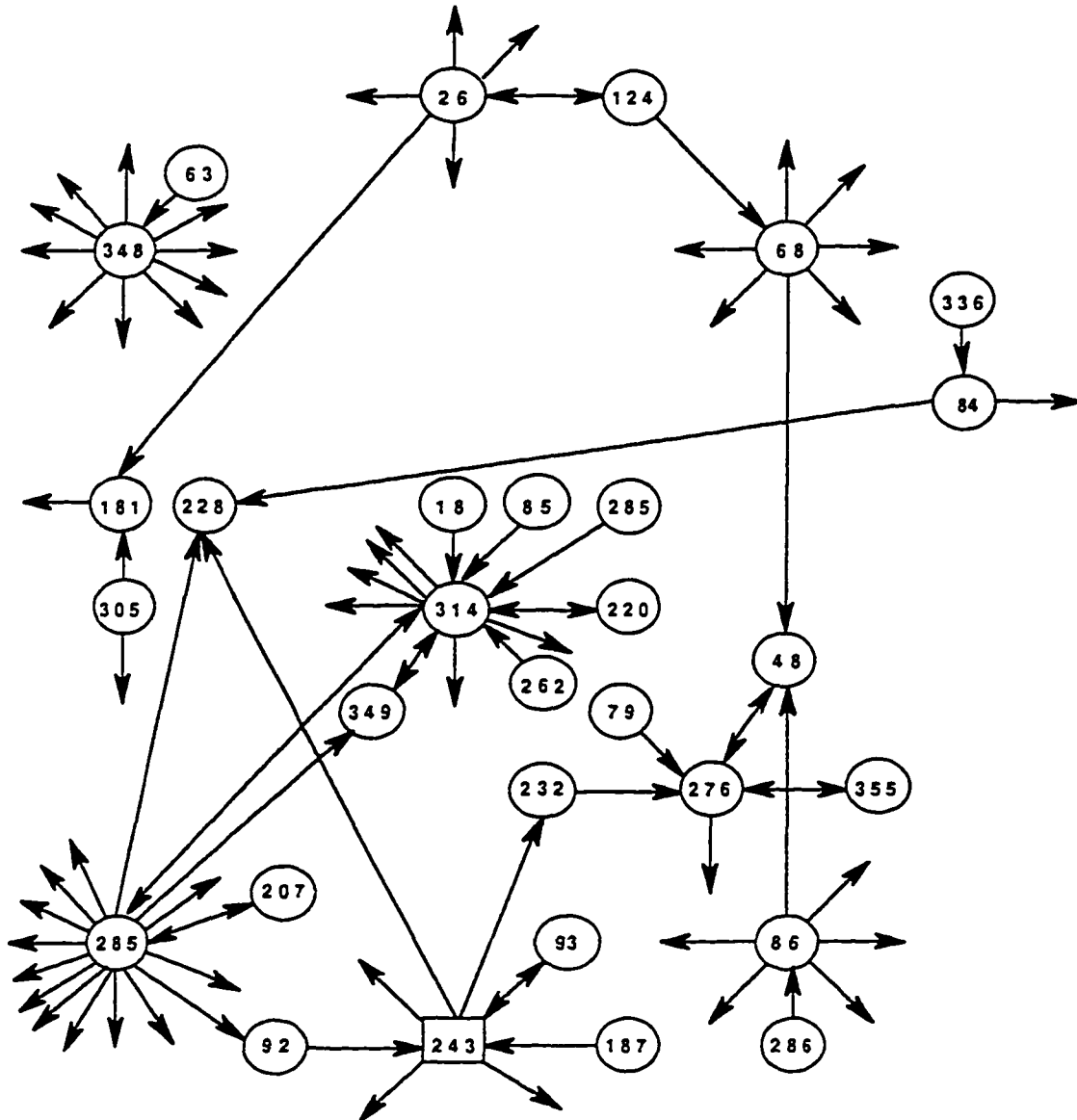
Figure 3.

Sociometric connections among superintendents aged 30-39 (0.009 connectedness).

Among Iowa's youngest superintendents, 314 received eight of the 16 namings accumulated by all 10 superintendents. The small number of namings received by these individuals might be an end-result of their relative inexperience, which, at the time they were surveyed, amounted to an average of less than 3 years on the job. As with his nine other colleagues, the networking behavior of superintendent 314 was characterized by efforts aimed at initiating relationships rather than in being the recipient of the networking overtures of others.

Figure 4 was constructed in order to discuss the subgroup of superintendents between the ages of 50 and 59. With a connectedness ratio of 0.272 (see Table 14), this group experienced the highest degree of networking activity based on the criteria of age. The construction of this sociogram varied from the others previously presented in that the 20 most frequently named superintendents are identified by the larger circles. This was done to improve the readability of the sociogram because it contains many circles, rectangles, arrows, and numbers. Another change in this sociogram, as compared to those discussed thus far, rests with the significance of the inward/outward arrows and the numbers which accompany them. These arrows denoted the nature and number of networking interactions which occurred

Figure 4.

Sociometric connections among superintendents aged 50-59

(0.272 connectedness)

among the other superintendents within this age category only.

Unlike their counterparts aged 30-39 who exhibited little connectivity with other superintendents of the same age, the 50-59 year old category displayed a much higher degree of connectiveness. In fact, the connectiveness ratio of 0.383, which characterizes the networking activity of the 20 stars within this subgroup, exceeded the connectedness ratio of 0.272 for all superintendents between the ages of 50-59. In terms of reciprocity, co-namings abound among the superintendents depicted in Figure 4. As far as the 20 stars are concerned, only superintendent 19 failed to establish at least one reciprocal relationship with another star.

Figure 4 includes 56 superintendents which is slightly less than half the 120 which comprised the 50-59 year old age group. Located at the upper outside edges of this sociogram are the 13 individuals who emerged as complete isolates neither having named nor been named by others. The superintendents recognizable by the smaller circles are included because they are participants in reciprocal linkages or serve to bridge the gaps between stars not directly connected. The remaining 64 superintendents excluded visually from this sociogram are isolates to a lesser degree in that they named or were named by other

superintendents within this age grouping fewer than four times. Therefore, the depiction of only 56 superintendents (of which 13 are isolates) results in the characterization of this network as one composed of a well connected but rather exclusive group of individuals overshadowed by the presence of 20 stars.

The source of prominence for the 20 stars in the network representing the 50-59 year olds can be traced, in part, to the school districts over which they preside. Of these superintendents, 18 are affiliated with districts whose enrollment places them among the 100 largest districts in Iowa. Only one star was in charge of a district having less than 1000 students, and 16 stars represented districts ranging in size from 1000-4999 students. The three remaining stars presided over districts with a student population in excess of 5000 students.

Accessibility

Accessibility is the proximity of superintendents one to another and is determined by the area education agency (AEA) to which their districts belonged. A choice matrix for each of Iowa's 15 AEAs was constructed, and within each matrix the total number of namings was tabulated. Using the connectedness formula previously described, a ratio for the total namings was determined. As discussed in Table 14, the connectedness ratios for the 15 AEAs ranged from 0.105-

0.567. Although this constituted a broad range of connectedness from one AEA to another, all of these ratios far surpass the statewide ratio of 0.036. Rather than construct sociograms for all AEAs, two were designed to pictorially represent different degrees of connectedness.

The first of the two AEA sociograms is Figure 5 which represents AEA 7 with its connectedness ratio of 0.379. In Iowa, the size of the AEAs range from 56 school districts served (AEA 11) to 13 school districts served (AEA 16). AEA 7 was selected for discussion because its size (25 districts) places it at the median or midpoint among the 15 AEAs. The design of the sociogram for AEA 7 took into account that three superintendents within this subgroup operated in a shared capacity between two districts. Therefore, the 25 districts of AEA 7 are represented in the sociogram by 22 superintendents.

Among the superintendents pictured in Figure 5, a quadrangular cluster of four superintendents (56, 64, 295, 296) constituted the individuals named most often by their AEA 7 counterparts. Superintendent 296 was the star of this subgroup having been named by 13 of his peers. The number of superintendents who routinely contact superintendent 296 might be higher, but how much higher is unknown because superintendents 33, 65, 77, 113, 158, 204, and 229 opted not to return surveys. Three superintendents (232, 300, 340)
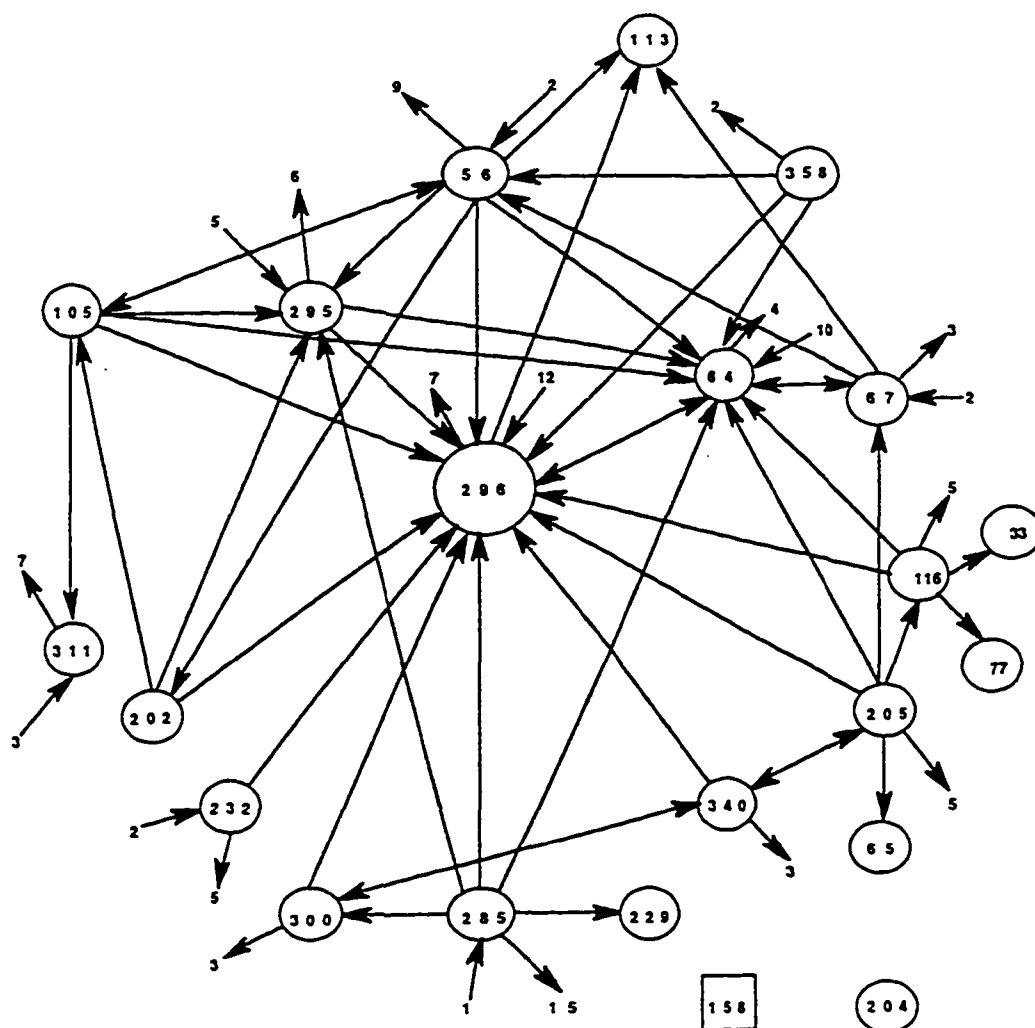
Figure 5.

Sociometric connections among superintendents in AEA 7
(0.379 connectedness).

gained access to the predominant quadrangular cluster cited above as part of the clique surrounding superintendent 296. As one of the 23 statewide networking stars, superintendent 296 was also named by 12 other superintendents not associated with AEA 7.

In terms of isolates, superintendents 33, 65, 77, 158, 204, 229, 232, and 311 are the least communicatively linked within AEA 7. Of these isolates, only 158 and 204 are completely disconnected from others, with the extent of the isolation unclear because both these individuals were non-respondents to the survey. Although the ratio of 0.379 indicated a strong network of interconnectedness, these connections were primarily non-reciprocal. The only co-namings visible were 56-105, 64-67, 64-296, 205-340, and 340-300.

Figure 6 represents AEA 11 which is the least connected of all the 15 AEAs with a ratio of 0.105. AEA 11 supports the educational activities of 56 school districts which makes it the largest such organization in Iowa. Included as part of this AEA is the city of Des Moines and its adjacent suburbs, the city of Ames, other less populated cities and towns, and numerous rural school districts. What is most characteristic of this population of superintendents
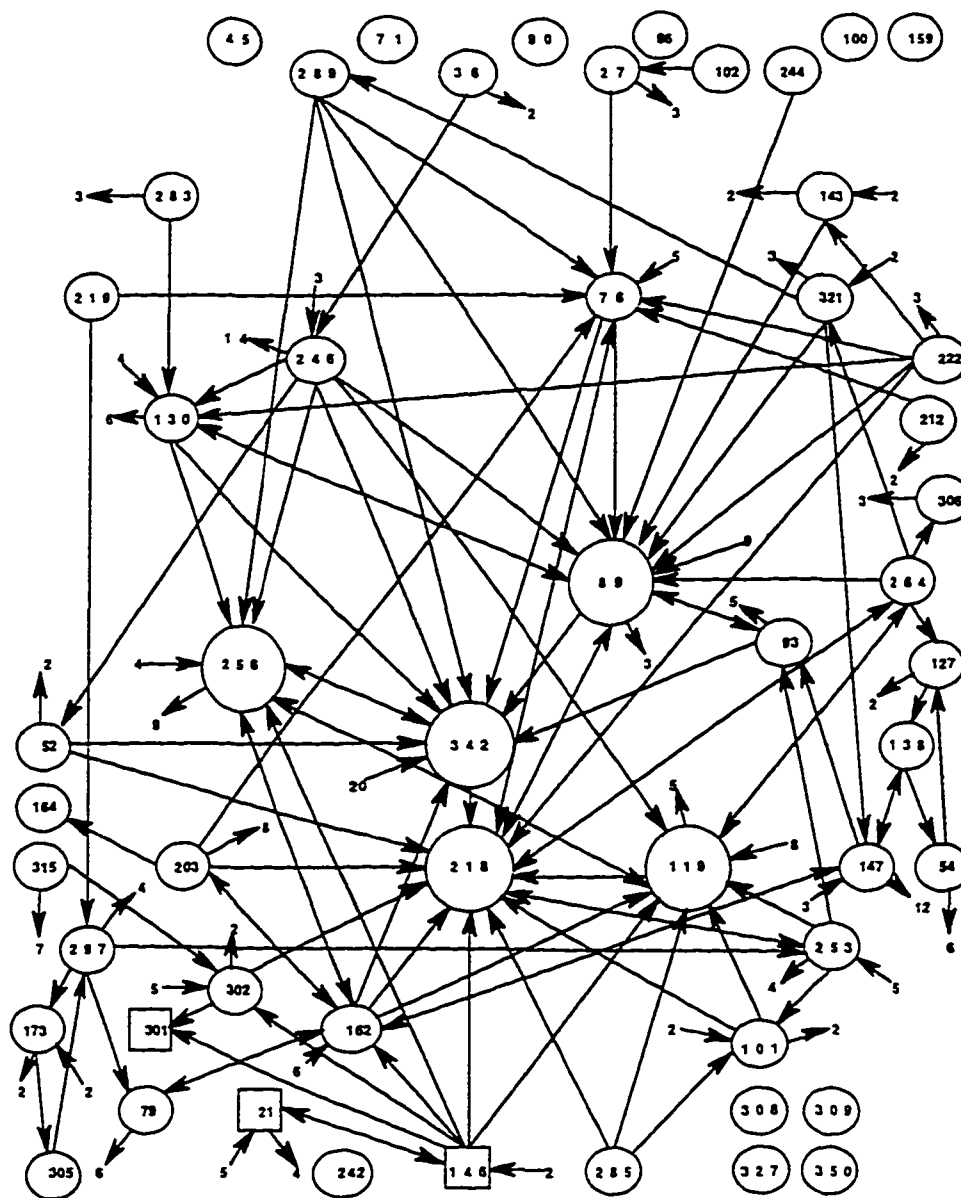
Figure 6.

Sociometric connections among superintendents in AEA 11
(0.105 connectedness).

is the peripheral location of many of them around the outer edges of the sociogram. Such locations are indicative of individuals with few namings attributed to them.

Another observed characteristic of this subgroup is the 11 isolates located at the top and bottom of Figure 6. Characteristically, as in other sociograms, AEA 11 stars emerged and have a central position relative to those who named them. As in Figures 4 and 5, five of the stars in AEA 11 (89, 119, 218, 256, 342) are recognizable by the larger circles with superintendent 342 at the center because he was named by 42 other superintendents around Iowa. When compared to superintendent 342, superintendents 89 and 218 accumulated slightly fewer overall namings at 38 and 34 respectively. However, they rival superintendent 342, at least among AEA 11 superintendents, because they were named by more of these respondents. Specifically, superintendent 342 was named by nine other superintendents in AEA 11 as compared to 14 respondents for superintendent 218, and the 11 respondents of superintendent 89. This suggests a slightly wider expanse of networking contacts within AEA 11 for superintendents 89 and 218.

Although not depicted within Figure 6, an analysis of the types of namings received by the 5 stars (89, 119, 218, 256, 342) revealed that superintendent 119 was the only star who received a majority of namings as responses to Questions

11-15 on the survey. This served as an indicator that superintendent 119 is more in demand by his peers as an actual contact person by others in need of information or support. As a result, the task relationship between superintendent 119 and his peers was more pronounced than that which existed between superintendents 89, 218, 256, and 342 and their cliques of networking contacts. Rather than named as a source of information or support, superintendents 89, 218, 256, and 342 accumulated namings which were reputational because respondents identified them most often as respected colleagues and effective leaders.

As described earlier, the large concentration of superintendents positioned along the fringes of Figure 6 was consistent with their designation as isolates or as individuals who received few namings from their colleagues. Although the maze of crisscrossing lines visually conveys the sense of a highly connected network, the connectedness ratio of 0.105 denotes that such was not the case. Even though a low rate of connection prevailed, all but 11 superintendents were connected in varying degrees. Some were linked directly to the informational loop associated with stars 89, 119, 218, 256, and 342. Other superintendents such as 289, 130, 246, 76, 146, 162, 302, and 203 acted to bridge the gaps between stars and other superintendents who were not directly connected to the

stars. A few superintendents on the fringes who lacked direct or indirect access to the AEA 11 stars formed networking triads. One particular triad consists of superintendents 54, 127, and 138, and another includes superintendents 297, 173, and 305. In spite of a low connectedness ratio, 14 pairs of co-namings (283-130, 130-89, 219-297, 76-218, 89-93, 89-218, 218-253, 256-342, 256-119, 256-162, 162-79, 21-146, 146-153, and 138-147) were discovered.

Status

The third attribute of status was used to examine the informal communication network among Iowa's public school superintendents. In keeping with the notion that status is often equated with rank or position within a group of individuals, the variables of years of experience as a superintendent, salary, and school district size were analyzed. Choice matrices were constructed which allowed degrees of connectedness for each status variable to be calculated. What resulted from these calculations are four connectedness ratios in each of the categories of the variables of total experience, salary, and enrollment. From the 12 connectedness ratios listed in Table 14, sociograms for the three highest ratios were constructed as a way of discussing the network from the vantage point of status. The three highest ratios are for two subsets of salary

($70,000-79,999 & $80,000+) and one subset of enrollment (3000+).

Figure 7 ($70,000-79,999) and Figure 8 ($80,000+) were constructed to display the networking choices among superintendents of similar salaries. Each of these two salaried groups of individuals achieved higher degrees of connectedness when compared to the statewide ratio of 0.036. The 47 respondents whose salaries were in the $70,000-79,999 range had a connectedness ratio of 0.075, and the 26 highest paid respondents ($80,000+) had a connectedness ratio of 0.209. Common to these two sociograms was a dense cluster of namings characterized by numerous co-naming indicative of reciprocal relationships.

The presence of many co-namings create the appearance of an old boy network among superintendents grouped by salary. The co-namings as they appear among superintendents in the $70,000 category include 105-183, 150-174, 150-228, 228-10, 228-215, 228-245, 245-334, 18-53, 18-226, 334-216, 216-29, 152-46, 275-246, 89-247, 60-33, 314-349, 349-200, and 349-119. The resemblance to an old boy network is further heightened by the fact that 7 of the 8 statewide stars (60, 119, 174, 200, 228, 245, and 349) whose salaries were in the $70,000 range participated in these reciprocal relationships. The only star not connected to another star via a co-naming was superintendent 119.
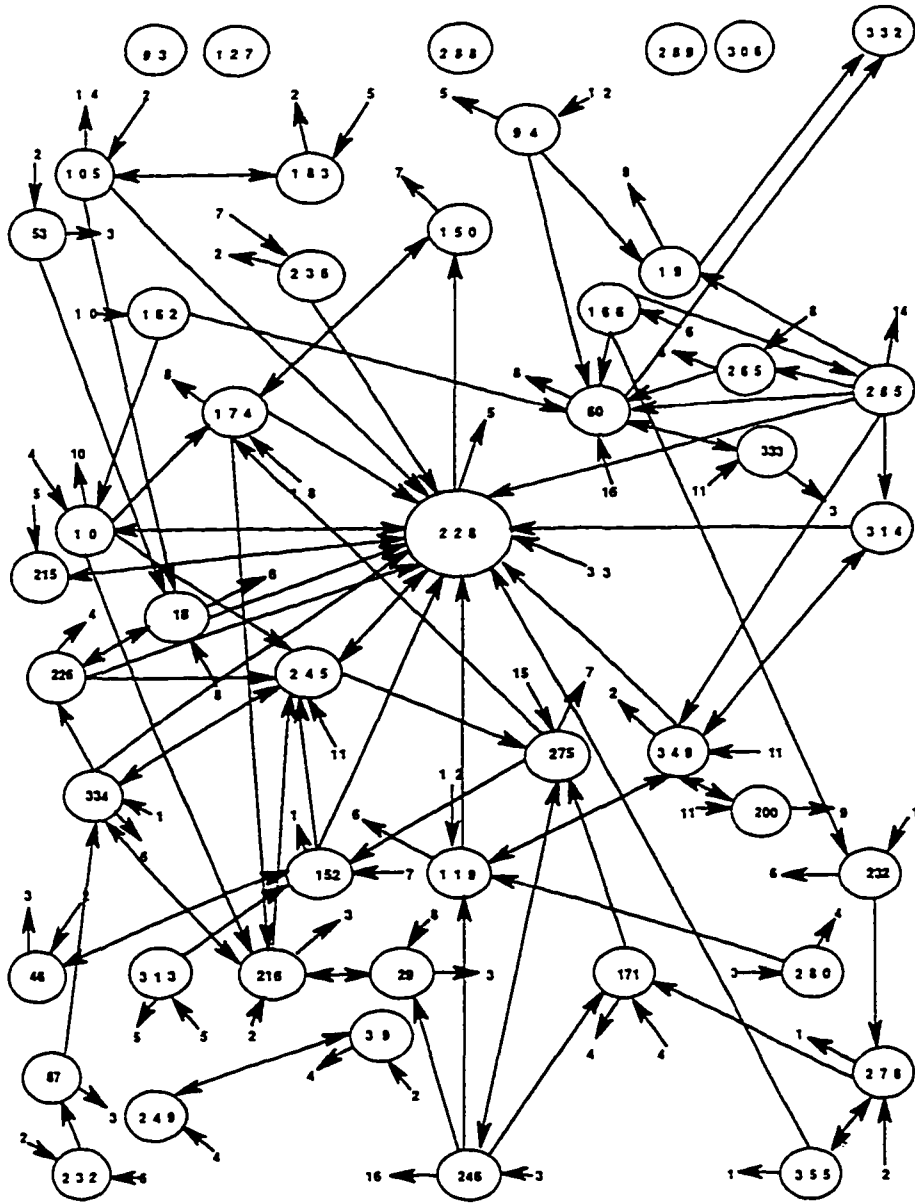
Figure 7.

Sociometric connections among superintendents earning
$70,000-79,999 (0.075 connectedness).
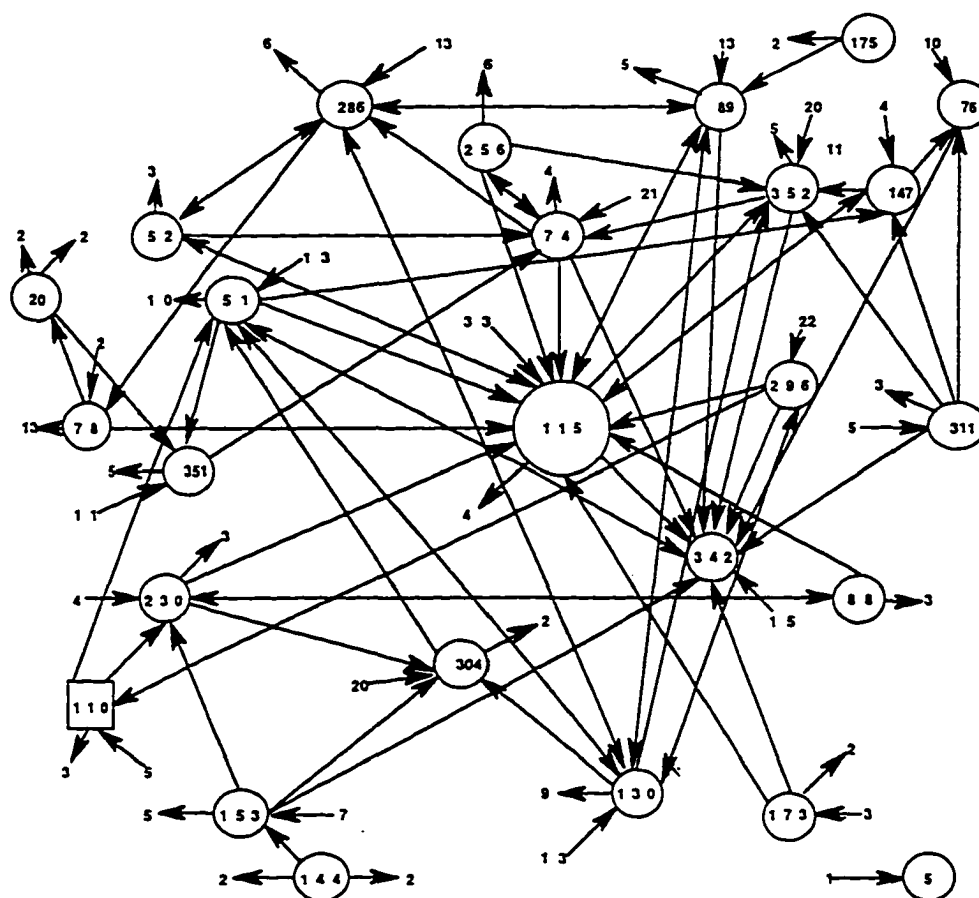
Figure 8.

Sociometric connections among superintendents earning more than $80,000 (0.209 connectedness).

The pattern of stars and their co-namings held true for superintendents in the $80,000+ category (Figure 8). Eight statewide stars (51, 74, 89, 115, 296, 304, 342, and 352) surfaced in this category, and only superintendents 296 and 304 were not participants in reciprocal relationships. Similar to the superintendents in the $70,000 range (Figure 7), Iowa's highest paid superintendents were engaged in frequent reciprocity. Specifically, 14 co-namings (52-115, 74-115, 89-115, 147-115, 352-256, 352-74, 74-11, 74-256, 342-51, 342-110, 88-230, 130-89, 130-286, and 130-51) are observed.

The discussion surrounding Figure 7 and Figure 8 suggests that high salaried superintendents resemble an old boy network because many of the statewide stars included in these two subsets engaged in numerous reciprocal relationships. However, who talks to whom is not the only indicator of an old boy network. What people of influence talk about is an important consideration as well. In the case of the 16 statewide stars (8 from each salary category) who qualified as highly paid superintendents, the namings they received collectively reflected that they did not operate in ways commensurate with an old boy network. When Questions 14 (career advancement) and 15 (emotional or moral support) on the survey were studied to determine how often the 16 stars were named, those namings only amounted to

10.5% of their total namings. This percentage seems insufficient to support a claim that an old boy network was at work among highly paid Iowa superintendents, at least as it was described in Chapter 2. In that chapter it was suggested that an old boy network seeks to promote selected individuals as they endeavor to reach the top of their profession.

The sociogram for the namings of the 19 respondents whose districts were the largest in size (3000+) was constructed and labeled as Figure 9. Apart from some of the ratios generated by namings according to superintendents and their AEAs, this sociogram depicted one of the strongest densities of namings with a connectedness ratio of 0.347. As with Iowa's most highly paid superintendents ($80,000+), many co-namings were detected among the 19 large-district respondents. This was not surprising because 18 of the 19 respondents were included in Figure 8 ($80,000+ sociogram). In all likelihood, superintendent 92 would have been included in Figure 8 had he chosen to divulge his salary because his district is among Iowa's 20 largest districts.

The reciprocity which existed among the superintendents who districts were largest in size is evidenced by the following co-namings: 78-92, 78-20, 92-20, 20-76, 230-110, 110-342, 342-51, 24-352, 74-256, 74-115, 115-256, and 130-296. These co-namings contribute to
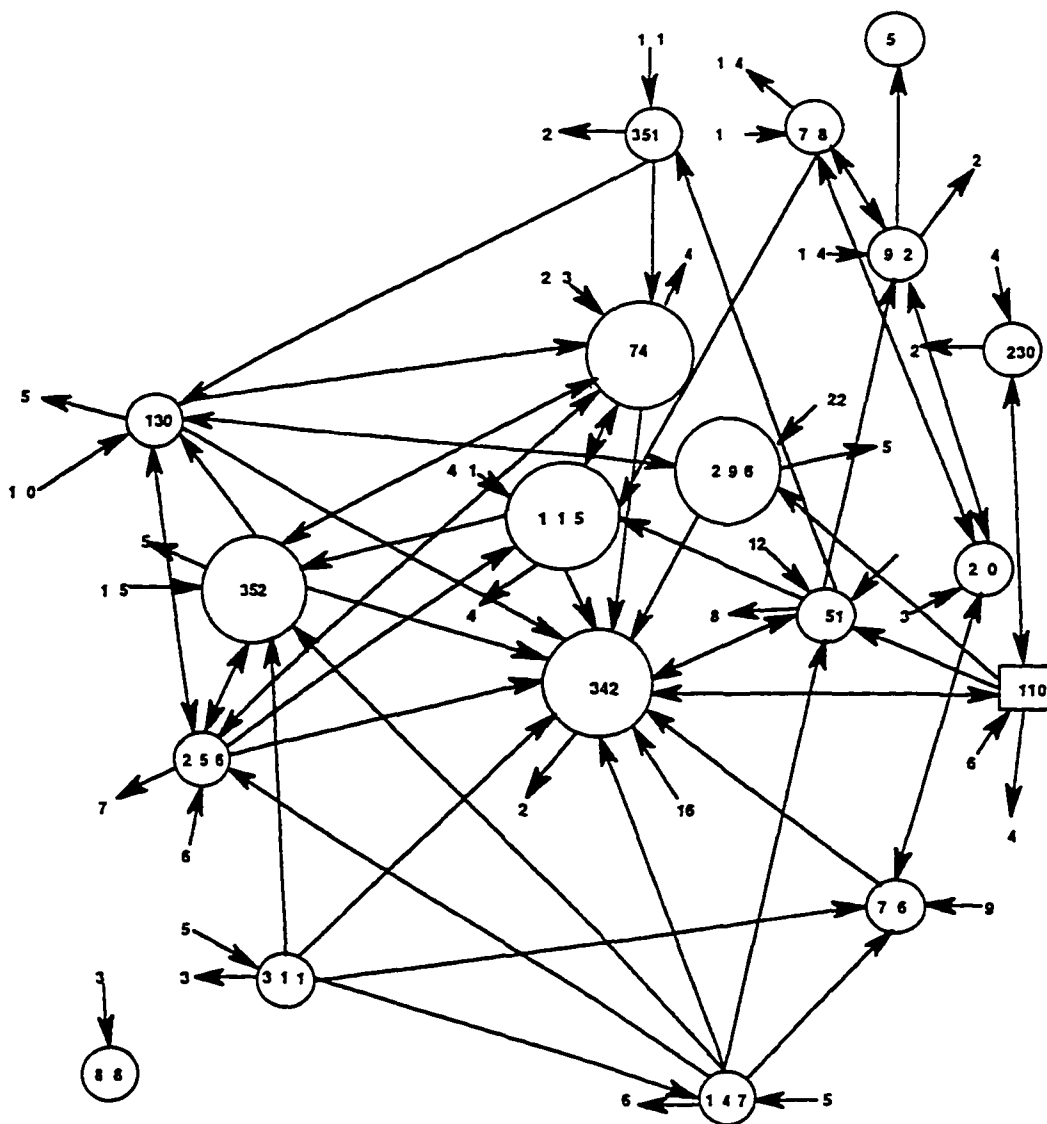
Figure 9.

Sociometric connections among superintendents in districts
with enrollment of 3000+ students (0.347 connectedness).

extensive reciprocal interaction in that superintendents
351, 5, 311, 147, and 88 were the only superintendents not
engaged in this type of networking activity. However,
superintendents 5 and 88 were the most isolated because
superintendents 351, 311, and 147 were active in multiple
one-way namings.

Superintendents 74, 115, 296, and 342 were four of the
six most frequently named stars of the entire statewide
network. When viewed collectively regarding their place
within the hierarchy of Figure 9, superintendent 342 stands
out having been named by 11 large school colleagues,
followed by superintendent 74 who received five namings,
superintendent 115 who received four namings, and 296 with
three namings. However, these naming patterns take on a
different meaning when the other namings received (depicted
by incoming arrows) were factored in as well. When this was
done, superintendent 342 received 16 additional namings from
counterparts outside the 3000+ subgroup as compared with the
38 received by superintendent 115, the 23 received by
superintendent 74, and the 22 received by superintendent
296. This implied that the clique of namings for
superintendent 342 is a slightly more homogeneous networking
pattern composed of more large district superintendents.
Conversely, the cliques of superintendents 74, 115, and 296
are more diffuse in that they extend beyond the boundary of

largeness to include a wider diversity of networking contacts.

Another star worth mentioning is superintendent 352 shown in Figure 9 as having been named by five large school superintendents. Similar to 74, 115, 296, and 342 whose namings extend beyond the boundary of largeness (3000+), superintendent 352 was named by 15 other superintendents. Although not represented in the sociogram, what sets superintendent 352 apart from the other four stars just mentioned is that almost half (49%) his namings were from superintendents who viewed him as a source of information or support (Questions 11-15). This type of naming pattern contrasts with that of superintendents 74, 115, 296, and 342 because slightly over 25% their namings were as sources of information and support.

Statewide Network of Stars

The construction of a sociogram illustrating the statewide superintendents' network was not undertaken due to the size of the population studied. To pictorially represent the networking activity among Iowa's 361 superintendents would have yielded an unreadable sociogram. Likewise, a sociogram of the 23 network stars with all their cliques and overlapping connections would have been equally as difficult to construct and of questionable readability as well. Instead, nine sociograms are offered as a mosaic of

the network based on the most meaningful connectedness
ratios for the attributes of group affiliation,
accessibility, and status. Throughout the discussion which
accompanied the nine sociograms, statewide stars (along with
stars germane only to a particular subgroup) were described.
A final description of the network's 23 stars is offered as
a way of elaborating upon the fourth attribute of task
relationship.

In Table 18, a description of the 23 statewide stars
pertinent to an understanding of task relationship is
offered. An examination of this table leads to an awareness
that the collective preeminence of the 23 stars is based
primarily on a perception held of them by their peers as
respected colleagues and effective leaders. Only 6 stars,
as indicted by the asterisks before their ID numbers,
received a majority of namings from other superintendents in
response to Questions 11-15. These five questions were
meant to measure the degree to which superintendents
established task relationships with other superintendents
based upon the frequency by which they were called upon to
provide technical information or support. Seventeen stars
received a majority of namings as responses to Questions 9
and 10 which suggests that the esteem accorded them had more
to do with reputation and less with the task relationships
they forged with their peers.

Table 18

Statewide Stars as Determined by the Namings of Responding Iowa Superintendents

ID No.	Size of District	Location of District	Total Namings	Namings by Question						
				Q9	Q10	Q11	Q12	Q13	Q14	Q15
228	1253	NW	96	29	37	3	6	14	5	2
115	1253	NW	75	20	30	3	5	4	9	4
*60	1662	SW	55	10	13	10	6	3	7	6
74	4781	NE	47	14	18	2	3	4	4	2
296	4990	NE	47	16	17	3	2	2	4	3
304	2950	NE	45	12	14	3	3	8	2	3
342	30000+	SE	44	13	23	1	3	0	3	1
*349	1438	NW	41	8	8	7	5	6	4	3
218	5223	SE	40	12	15	7	4	0	1	1
245	1750	NW	38	9	11	5	5	4	2	2
*119	2419	NW	37	9	7	10	4	2	3	2
352	4950	NE	37	9	10	3	3	2	8	2
64	1197	NE	36	9	14	2	1	5	2	3
*113	870	NE	35	7	5	8	6	1	3	5
174	1754	NW	35	9	14	0	6	3	2	1
*40	803	SW	34	6	8	11	3	3	1	2
89	1953	SE	34	12	9	5	1	3	2	2
*19	1651	SW	32	5	5	7	5	2	5	3
24	535	SE	32	8	8	3	3	3	3	4
91	10000+	NE	31	11	10	1	2	1	5	1
200	2232	NW	31	12	8	3	4	0	1	3
51	10000+	SW	28	9	10	0	4	1	3	1
92	4597	SE	25	8	7	0	5	3	1	1

When the namings received by the 23 stars were examined solely from the perspective of the tasks (Questions 11-15) asked of them, various superintendents were recognized as having expertise sought after by their colleagues. For instance, superintendent 228 was recognized as someone who could serve as an information source regarding issues of personnel (Question 12) or curriculum and instruction (Question 13). Besides superintendent 228 who received six namings for Question 12, three other stars (60, 113, 174) also garnered six namings to this question as well. Another superintendent who rivaled superintendent 228 as a curriculum and instruction specialist was superintendent 304 who received eight namings for Question 13.

Three stars (40, 60, 119) clearly stood out as sources of budgetary information with 11, 10, and 10 namings respectively. Superintendents 115 (nine namings) and 353 (eight namings) were looked upon as career advancement contacts (Question 14), and the six namings star 60 received coupled with the five namings for star 115 positioned them at the top of the pecking order when emotional or moral support was solicited.

Advantages and Disadvantages of Networking

Question 18 was included as part of this study in order to solicit comments from superintendents regarding the advantages and disadvantages of networking. From the 258

respondents to the survey, 190 commented on the advantages of networking and 118 on the disadvantages. Additionally, in the space provided on the survey under the disadvantages category, 52 respondents wrote the word none or other words to that effect.

When the advantages were viewed in their totality, several themes predominated. The most common theme revolved around the shared belief about the social and emotional benefits gained from networking. Statements that networking helped to relieve stress, provided an occasional laugh, resulted in fellowship, reduced feelings of inadequacy, served to put problems into perspective, resulted in needed encouragement, and reduced frustration were commonplace. A second theme frequently commented upon dealt with the loneliness of the superintendency. Respondents wrote that networking helped to remind them that they were not alone and that networking with other superintendents was important because these were the only people who could understand and appreciate the loneliness associated with the position.

A third common theme voiced by respondents consisted of a belief that networking was advantageous to the process of acquiring information or advice. Numerous written statements dwelled on such ideas as tapping into a vast knowledge base, benefiting from the experiences of others, using their discussions with other superintendents as a way

of keeping abreast of current trends, not having to "reinvent the wheel," and so forth. Interestingly, very few respondents suggested that they sought the wisdom of their peers in hopes that these individuals would directly help them reach a decision or solve a problem. Instead, what they wanted were divergent points of view, opportunities to discuss their options, chances to articulate their intuition about issues they faced or about the decisions they needed to make. Frequently, respondents characterized networking as a valuable sounding board for their ideas or as a way to interact with others who have "been there."

Although discussed less frequently, a fourth theme relevant to the advantages of networking focused on the technical information gained through collegial interaction. Respondents commented on the importance they attached to discussing teacher-related concerns, contract negotiations, budgetary problems, and legal issues. Thoughts in this regard indicated that superintendents viewed these discussions as important to the effective and cost-efficient management of their school districts.

The most frequently voiced concern about the disadvantages of networking pertained to the uselessness of some information gained through dialogues with other superintendents. Various factors were cited as to why the

information exchanged was sometimes less than reliable.
Those factors included the biases of some superintendents,
the political differences between districts, the notion that
everyone's situation was different, and the perception that
most superintendents tend to be generalists rather than
specialists. The reliability of the information received
was also suspect in the minds of some respondents due to the
source of that information. A caricature about some
superintendents emerged of individuals believed to be
out-of-touch, lacking in vision, or providing self-serving
information. In particular, self-serving superintendents
were described as persons who provided distorted information
as a way of looking good, who engaged in one-upmanship, or
who sought to minimize the problems confronting their
districts.

Concerns about the riskiness of networking were raised
through repeated references to the issue of confidentiality.
Numerous respondents expressed their fears that discussions
were not always held in confidence or that caution needed to
be exercised when choosing potential networking contacts.
Along with the concerns expressed about the confidentiality
of their discussions, some respondents were uncomfortable
discussing personal weaknesses or shortcomings out of fear
that others might become privy to that information.

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Three perspectives on concept of time permeated the reactions of many respondents to the disadvantages of networking. The amount of time needed to build networking relationships was a concern of some superintendents because they felt this was time they could not spare. Several suggested that their networking overtures were perceived of as infringements on the time of their busy colleagues. Superintendents sought out by others as networking contacts spoke about the valuable time they lost responding to the inquiries directed at them by other superintendents.

A potpourri of statements touched upon various other disadvantages linked to networking. For instance, the tendency of superintendents to dwell on the negative aspects of their worklife was viewed as detrimental to the morale of others. Concerns were expressed that networking might lead to an over-dependence on others for support or result in a "group think" perspective which might not be appropriate for all districts. Conversely, several respondents viewed the different perspectives of large and small district superintendents as a networking barrier. Finally, written responses included the phrase "old boy" network to suggest that the dissemination of information was limited to those superintendents granted access by the "good old boys."

Summary

Chapter 4 reported the data supplied by 258 respondents to a self-reporting, sociometric survey. The discussion centered on: (a) the demographic characteristics of the respondents, (b) an analysis of naming responses, (c) the degree of connectedness (connectedness ratio) between superintendents, (d) a description of network stars, (e) sociograms constructed for the attributes of group affiliation, accessibility, and status, (f) the attribute of task relationship, and (g) the advantages and disadvantages of networking.

Chapter 5 will summarize the purpose and methodology of the study. Significant observations will be discussed, important implications about networking among Iowa's public school superintendents will be described, reflections drawn from the literature review, pertinent research, and personal observations will be noted, and recommendations for future research will be offered.

CHAPTER 5

SUMMARY, CONCLUSIONS, REFLECTIONS, AND IMPLICATIONS

Introduction

The format of this chapter consists of four parts labeled as the Summary of the Study, Conclusions of the Study, Reflections on the Study, and Implications for Future Research. In the Summary section, the study's purpose and methodology are discussed. Significant observations generated by an analysis of the data are described in the Conclusions section. Included in the Reflections section are elements of the literature review, pertinent research findings, and personal observations blended together as a summation to the study. Under the heading of Implications, suggested topics for further study are offered.

Summary of the Study

Sociometric research was conducted to better understand the peer relationships associated with the informal networking activities of Iowa's public school superintendents. The purpose of the study was to describe how the attributes of group affiliation, accessibility, status, and task relationship affected the network. The data used to examine the networking patterns common to Iowa's superintendents were compiled from the responses of 258 superintendents to a self-reporting survey.

Included in the survey were seven questions which required the respondents to provide names of Iowa superintendents they viewed as respected colleagues and effective leaders, or who were sources of information or support for them. From the namings provided, choice matrices were constructed as a way of calculating connectedness ratios. The use of connectedness ratios was consistent with the effort of replicating Armstrong's (1989) study of networking among superintendents in the state of Washington. As in Armstrong's case, connectedness ratios for the Iowa study were used as indicators of connectiveness strength between superintendents based on the attributes of group affiliation, accessibility, and status. The namings provided by the survey respondents also allowed for the identification of stars, isolates, and cliques within the network.

As a way of describing the network, sociograms were constructed to serve as visual representations of the connectedness between superintendents. During their construction, it was discovered that the creation of sociograms became more difficult as the size of the group to be pictured increased. Because there were 361 superintendent in Iowa at the time of the study, the design of a sociogram for a population that large was not

undertaken. Instead, nine sociograms were created from which a description of the network ensued.

The study of networking among Iowa superintendents deviated from the research of Armstrong (1989) by also examining the attribute of task relationship. The decision to include task relationship was based on a recommendation from Armstrong that networking among superintendents be studied "as it relates to such dynamics as dissemination of innovation, topics of expertise and communication links" (p. 93). By expanding the study to include task relationship, a comparison between those superintendents named as respected colleagues and effective leaders with those named as sources of information and support was undertaken.

Conclusions of the Study

Four distinct summations are offered for the important findings resulting from this study. First, the demographic characteristics of the 258 respondents who participated in this study are summarized. Second, conclusions discussed in the Washington study (Armstrong, 1989) are compared with those of this Iowa study. Third, conclusions drawn from this Iowa study are compared to the research findings discussed in the authoritative literature review of Chapter 2. Fourth, a discussion about the significance of the study by reviewing the four research questions is undertaken.

Demographic Characteristics

When the 250 male respondents were viewed demographically, a composite emerged of a 52-year-old white superintendent with 19 years of experience and serving in a district having an enrollment of about 1300 students. Further investigation of the data for the male respondents revealed that most of them had either a specialist or doctoral degree and received an annual salary in the $60,000-69,999 range.

The demographic composite of the 8 female respondents was that of a 49-year-old white superintendent with slightly over 6 years experience. Each of the female respondents had either a specialist or doctoral degree and received a salary in the range of $60,000-69,999 a year as compensation for administering districts with an average enrollment of slightly over 1800 students. It is important to note, however, that the average enrollment and salary figures for these 8 individuals are skewed by the presence of 1 superintendent with a district of over 10,000 students receiving a salary above $90,000. When these numbers are extracted, the average enrollment for the districts of the remaining 7 females is 510 students, and the average annual salary falls into the $50,000-59,999 range.

Comparative Analysis of the Washington and Iowa Studies

In the Washington study (Armstrong, 1989), nearly 33% of the 299 superintendents were not named on the survey circulated among all school districts and Educational Service District (ESD) superintendents. Among Iowa's 361 superintendents, the 62 individuals whose names did not appear as responses on any of the seven sociometric questions constituted 17% of the total population. When the namings provided by the Washington superintendents were tabulated, Armstrong decided that 4 individuals were named in sufficient number to be designated as stars of the network. From among these 4 stars, Armstrong noted that 1 received significantly higher namings than the others. In comparison to the 4 stars identified in the Washington study, the Iowa study produced 23 superintendents designated as statewide stars. The disparity in the number of stars identified in each study is the result of differing research methodologies. In the Washington study only two naming questions were used. In the Iowa study, seven naming questions were used which allowed for more superintendents to be identified by their peers. Therefore, it was possible for more Iowa superintendents to be named often enough to qualify as network stars. From among these 23 stars, the most frequently named superintendent stood out because he received 21 more namings than the second most frequently

named Iowa superintendent. This was consistent with Armstrong's findings relative to one star dominating the others in total namings.

When connectedness ratios for the attribute of group affiliation were compared, several differences emerged between the two studies. In the Washington study, Armstrong (1989) noted that all the connectedness ratios for this attribute were low. In the Iowa study, the connectedness ratios for female superintendents (0.198) and superintendents aged 50-59 (0.272) were considerably higher than the statewide connectedness ratio (0.036). The connectedness ratio among Iowa's female superintendents contrasted with the findings in the Washington study, because Armstrong noted that "the namings between female superintendents is only slightly above the overall connectedness ratio for all superintendents" (p. 88).

In the Washington study, a pattern of strong connectedness for accessibility caused Armstrong (1989) to theorize "that superintendents who are near each other geographically tend to have an opportunity to develop a social network" (p. 88). This conclusion was based on the high connectedness ratios of some Washington Educational Service Districts (ESDs). Iowa's counterpart to the ESDs are the 15 area education agencies (AEAs), and all were found to have connectedness ratios well above the statewide

ratio. Therefore, Armstrong's conclusion about ESDs is applicable to the AEAs of Iowa as well.

An examination of the attribute of status generated findings common to both the Washington and Iowa studies. In both studies, high salaried superintendents tended to name each other as did superintendents from large school districts. In Iowa this was particularly true of superintendents paid more than $80,000 and for superintendents in districts with more than 3,000 students.

The Authoritative Literature Revisited

The following discussion connects findings from this study to important conclusions described in the literature review of Chapter 2. Among Iowa superintendents it was found, based upon their written comments, that feelings of isolation are reduced through networking. This conclusion is supported by Rogers and Kincaid (1981) who cited a reduction in isolation as a beneficial effect experienced by those who engage in networking. Also contained in the networking literature is commentary related to the importance of networking when seeking exposure to new ideas or when beginning a particular job. When asked in the Iowa study to comment on the advantages of networking, respondents remarked that it helped them stay abreast of new trends or acquire useful information. Others, who claimed to be new to Iowa or just beginning their careers as

superintendents, indicated they found networking to be helpful in coping with situations unfamiliar to them.

In Chapter 2, a discussion about task benefits (technical assistance), relationship benefits (peer support), and inspiration benefits (psychological rewards) was included (Cohen & Bradford, 1990). Although this terminology was not used by Iowa superintendents, written comments of survey respondents alluded to each of these three types of reciprocal benefits. Likewise, when the pattern of responses to Questions 11-15 were analyzed, Question 15 garnered the highest number of total namings (Table 15). This question asked respondents to identify those colleagues who were sources of emotional or moral support and, therefore, was closely akin to relationship and inspiration benefits.

Two types of networking structures, symmetrical and asymmetrical, were described in Chapter 2. In asymmetrical networks, reciprocity is common and is often based on power relations which denote a high standing accorded to some individuals within the network. In the descriptions which accompanied the nine sociograms included in this study, many co-namings (reciprocity) were commented upon as they occurred. From these sociograms it is apparent that the Iowa network is asymmetrical because reciprocity based upon power relations is common. This conclusion was arrived at

because co-namings among older superintendents who are the highest paid and in charge of the largest districts were the most frequent.

Included in Chapter 2 was a discussion of Granovetter's (1973) research into strong-tie and weak-tie networks. According to Granovetter, a lack of redundancy in the information transmitted is what distinguishes weak-ties from strong-ties. Where strong-ties exist, the information circulated among networking partners is old and redundant. Because this study did not focus on the quality of the information exchanged among superintendents, the degree of redundancy embedded within these exchanges was not measured. Thus, it is not possible to attach either a weak-tie or strong-tie label to the Iowa network based solely on this criteria.

What can be said about the network relative to weak-ties and strong-ties is that the high connectedness ratios among superintendents from the same AEAs is the result of the familiarity they have with one another. Likewise, the 26 high-salaried superintendents and the 19 large-district superintendents constitute clusters small enough in size to stimulate a degree of familiarity reflected in high connectedness ratios. This means that these three groups engage in networking interactions which are more than just sporadic or infrequent, judging from the

strength of their connectedness. Consequently, frequent interactions among individuals who share a commonality of gender (females), proximity (AEAs), and status (salary and enrollment) creates the appearance of strong-tie networking activity.

The existence of an old boy network and the benefits derived from it has been a point of interest for networking analysts. The research findings of Black and English (1986), Kanter (1977, 1983, 1989), Ortiz (1981), and Shakeshaft (1987) regarding the importance of old boy networks were highlighted in Chapter 2. Old boy networks are characterized by interactions among individuals of considerable influence capable of fostering the careers of others. Therefore, variables such as gender, years of experience, salary, size of districts, and so forth were analyzed to ascertain the presence of an old boy network among Iowa superintendents. In addition, superintendents were asked to comment on the advantages and disadvantages of networking so that references to an old boy network might surface.

If an old boy network exists in Iowa it is not for the purpose of exchanging career pathing information among a few influential superintendents. This conclusion is based upon the namings elicited by Question 14 of the survey. This question asked respondents to identify those superintendents

contacted when in need of career advancement information.
As previously mentioned, seven survey questions specifically
asked respondents to identify superintendents by name. Of
these seven naming questions, five questions asked for the
names of direct networking contacts. Question 14 was one of
the five, and it generated the fewest number of total
namings (Table 15). Also, when the namings attributed to
the 23 statewide stars were reviewed, it was found that only
8% of their total namings (Table 19) were as sources of
career advancement information which fails to qualify them
as part of an old boy network. Conversely, Question 15
which asked for the names of superintendents relied upon to
provide emotional or moral support generated among survey
respondents the highest number of namings. Therefore,
providing emotional or moral support is a function of many
Iowa superintendents rather than the role of a select group
of individuals who wield influence like that of an old boy
network.

When the written comments provided by respondents were
reviewed, little mention was made of an old boy network
among Iowa superintendents. However, following a review of
connectedness ratios, it is possible to conclude that the
strong linkages among older (ages 50-59), highly paid
($80,000+) superintendents in large districts (3000+
students) structurally resembles an old boy network. A

similar review of the connectedness among females was not as conclusive despite the presence of a ratio of (0.198). In other words, the claim as to the existence of a distinct female network in Iowa cannot be made based upon the appearance of a high female connectedness ratio. The reason for this assertion rests upon the fact that the high degree of female connectedness resulted from a pattern of namings directed at one superintendent who, in turn, did not reciprocate in her naming of other females. Furthermore, the high female connectedness ratio is simply a mathematical anomaly caused by a few namings dispersed across a sample population consisting of only 10 individuals.

A topic of interest for network analysts is that of information diffusion among communicatively connected individuals. As described by Rogers and Kincaid (1981) in Chapter 2, the prestige of the sender impacts the flow of information. The attribute of task relationship was examined in this study as a way of determining the impact that prestige has upon Iowa superintendents. Throughout Iowa, 23 superintendents emerged as stars based on the prestige accorded them as respected colleagues and effective leaders (Questions 9 and 10). This prestige, however, did not guarantee that they would be called upon to provide technical information or support. Therefore, prestige is not a factor when it comes to information diffusion in Iowa

because the stars of the network did not play a prominent role as disseminators of information.

Two predictors of information diffusion among Iowa superintendents were the factors of homophily-heterophily and communication proximity. As noted in Chapter 2, communicative interaction is more frequent among highly similar (homophily) individuals, and new or innovative ideas are more likely to be dispersed among diverse (heterophily) individuals (Rogers & Shoemaker, 1971). Furthermore, a narrow distance between persons stimulates more communication than that which exists between persons separated by a vast geographic expanse (Blau, 1977; Festinger et al., 1950; Fischer et al., 1977). From the data collected, it was concluded that superintendents who resemble one another based on age (50-59), salary ($80,000+), and enrollment (3,000+ students) are strongly connected as attested to by their high connectedness ratios. Furthermore, the naming patterns provided by respondents revealed a network in which communication is mainly the by-product of the boundaries of Iowa's 15 area education agencies (AEAs).

Conclusions Drawn From the Four Research Questions

This study sought to determine the degree to which the informal communication network of Iowa's public school superintendents was influenced by the attributes of group

affiliation, accessibility, status, and task relationship.
Four research questions were developed to operationalize the
collection of data culminating in a description of the
network.

> Research Question 1. Is there an association between
> the attribute of group affiliation and the
> participation of Iowa public school superintendents in
> an informal communication network?

An examination of group affiliation focused on the
variables of gender, age, race and ethnicity, and graduate
school attended. A review of naming patterns for the
variable of gender revealed that male superintendents
exhibited a greater likelihood of naming as networking
contacts their male counterparts. The tendency of male
superintendents to name other males resembled behavior
associated with an old boy network only to the extent that
they directed most of their networking overtures in the
direction of other males. The reluctance of males to
communicate with female superintendents did not, however,
serve as a precursor to the formation of a separate female
network. As noted earlier in the discussion of Table 1, the
bulk of the naming activity among females was in the form of
one-way namings directed primarily at one female
superintendent. Consequently, conclusive evidence is
lacking in support of the notion that a female network
exists in Iowa. If the pattern exhibited by males to name

other male superintendents persists in Iowa in the future,
the advocacy for the formation of a "new girl" network as
espoused by Kanter (1977), Rosser (1980), and Shakeshaft
(1987) will take on added significance. Each of these three
advocates attested to the importance of female networks as
sources of moral support, empowerment, and career pathing
information.

When the gender of the 23 networking stars was
examined, all were found to be males. This stands to reason
because female practitioners are far outnumbered by their
male colleagues, have far fewer years of experience causing
them to be less well-known, and are located in small
districts resulting in their relative obscurity. The fact
that star status is a male-dominated phenomenon is directly
related to the vast number of namings male superintendents
received due to the preponderance of male superintendents
across Iowa.

When the variable of age was reviewed, Iowa's youngest
and oldest superintendents are the least connected.
Superintendents between the ages of 30 and 39 were rarely
identified by their peers as networking contacts which was
befitting of their recent entry into the domain of the
superintendency. Among superintendents over 60 years of
age, their disconnectedness from the network was a
by-product of several factors. These factors included a

reliance on the experiences gained from years on the job, their impending retirement, and the recent return by some to the superintendency on an interim basis. Each of these three factors surfaced in the written comments supplied by Iowa's oldest superintendents. The tone of these comments implied that experience, impending retirement, and interim status acted as disincentives to the cultivation of a broad range of networking contacts.

The most highly connected group of superintendents based on age are those between the ages of 50 and 59. It would be inaccurate, however, to state that the extent of their connectedness is purely the result of age. Rather, many of these same superintendents are found in highly connected groups characterized by individuals receiving high salaries and responsible for the affairs of districts with large student enrollments.

The graduate school variable was inserted as a way of testing the premise that acquaintances gained from this educational experience contributed to the formation of enduring networking relationships. Such was not the case because connectedness by graduate schools was not found to be significant. The dispersal of superintendents across the state produced by Iowa's four credentialing universities contributed to weak connectedness ratios associated with this variable. Likewise, the large influx of out-of state

superintendents and the exodus of Iowa superintendents to

other parts of the country likely played a part in this

disconnectedness.

Research Question 2. Is there an association between
the attribute of accessibility and the participation of
Iowa public school superintendents in an informal
communication network?

The attribute of accessibility shaped an investigation

aimed at determining the strength of the networking

connections between superintendents near to each other

geographically. Geographic nearness was determined to be

the 15 area education agencies (AEAs) to which Iowa school

districts are affiliated. Based on a review of

connectedness ratios listed in Table 17, a strong degree of

interaction exists among superintendents in each of Iowa's

15 AEAs. Therefore, the proximity of superintendents to

each other enhances the likelihood that they will be

approached by other nearby superintendents.

The area education agencies (AEAs) serve the school

districts of Iowa by performing such functions as offering

support programs for exceptional children, providing

educational media resources to schools, making available the

expertise of subject-matter consultants, and designing

relevant staff development activities. AEAs also promote

formal networking opportunities among school administrators,

teachers, and other school personnel by way of numerous

get-togethers convened throughout a typical school year.

The time spent by Iowa superintendents at their AEAs because

of regularly scheduled encounters establishes a familiarity

amongst them conducive to the formation of informal

networking relationships resulting in the acquisition of

useful information, advice, or moral support.

> Research Question 3. Is there an association between the attribute of status and the participation of Iowa public school superintendents in an informal communication network?

The attribute of status included the variables of total

experience as superintendent, salary, and enrollment. Among

the various subsets of these three variables, connectedness

based on total years of experience was of little

consequence. On the other hand, superintendents with the

highest salaries ($80,000+) or from the largest districts

(3000+ students) tended to name each other with the greatest

degree of regularity. Several factors are responsible for

the strength of the connectedness between highly paid, large

district superintendents. First, only 26 participants in

this study are paid a salary over $80,000 a year, and only

19 participants are found to be responsible for districts

with more than 3000 students. Consequently, as they name

each other, the importance of these namings are strengthened

mathematically because of the small sample sizes involved.

Second, the emergence of the $80,000+ and the 3000+

subgroups as the most highly connected reflects the
commonality they share. Specifically, all but two of the 19
superintendents in the 3000+ enrollment category are part of
the $80,000+ category as well. Therefore, the propensity
for one of these groups to be strongly interconnected
logically infers that the other will likewise display this
same quality. Third, the familiarity that some highly paid,
large district superintendents have toward one another is
enhanced by the existence of a formal urban network which
causes the participants in this network to interact on a
regular basis.

An issue relevant to status pertains to the lack of
connectedness among Iowa superintendents based on total
experience. Weak connectedness patterns among less
experienced superintendents (10 years or less) can be
accounted for because inexperienced superintendents are
still in the formative stages of establishing networking
contacts. But what about those superintendents with 10 or
more years of experience? An answer to this question can be
found when the factors of years of experience and school
district size are viewed together. When such a comparison
was done, it was found that years of experience and district
size do not always mirror one another. As a result, highly
experienced Iowa superintendents are not always located in
larger districts. Consequently, experienced superintendents

may be overlooked as valuable networking resources because
their years of experience are offset by the absence of
prestige accorded to superintendents in larger districts.
Also, movement among experienced Iowa superintendents has
been widespread in recent years as evidenced by the fact
that 75% of the respondents included in this study have 10
years or less experience in their current districts.
Therefore, networking relationships have been disrupted as
superintendents chose to relocate to other parts of the
state. In addition, the arrival on the scene of experienced
out-of-state superintendents lacking connections with
in-state superintendents further accounts for low
connectedness ratios among veteran superintendents. This
conclusion is supported by the written comments of new
arrivals to Iowa who divulged that they encountered
difficulties establishing connection with in-state
superintendents.

> Research Question 4. Is there an association between
> the attribute of task relationship and the
> participation of Iowa public school superintendents in
> an informal communication network?

The attribute of task relationship offered direction
into an inquiry as to whether the naming patterns of
networking contacts revealed a distinction between
superintendents based upon their personal qualities
(respected colleagues or effective leaders) and their task

skills (sources of technical information or support). When the naming responses to the seven survey questions were tabulated, 70% of the superintendents named as respected colleagues or effective leaders were named as direct sources of technical information or support. Therefore, the data revealed that most Iowa superintendents do not distinguish between their peers when establishing networking contacts in so far as personal qualities or task skills are concerned.

The data specific to the 23 networking stars revealed a pattern different from the one just described in that star status was conferred on these superintendents based primarily on their perceived personal qualities. This naming pattern supports the findings in the literature (Walton & Hackman, 1986) that a distinction is sometimes made between individuals admired for their personal qualities from those recognized as having expertise related to specific task skills. The implication that Iowa's 23 networking stars gained such acclaim because of the admiration accorded to them leads to speculation about the networking opportunities with this prestigious group which are not seized upon to the fullest extent possible. On the other hand, possibly connections are made with these stars in ways not measured in this study. For instance, if stars are sharing their insights at regularly scheduled AEA meetings or by agreeing to participate as presenters at

important conferences or seminars, the valuable information they possess is disseminated in ways other than through informal networking.

Reflections on the Study

In this age of the Internet, electronic e-mail, and computer bulletin boards, announcing that most people believe in the importance of networking does not qualify as a startling revelation. Whether networking is done via computers, over the phone, or through face-to-face conversations, the gathering of information is generally viewed as crucial to both individual success and organizational efficiency. A glance back at the literature review included with this study raises speculation as to whether networking is more valued in business and industry or education. For example, Baker (1994) spoke to networking from a client, customer, or competitor orientation. Peters and Waterman (1982) viewed networking as a common denominator among highly successful companies. Likewise, Kanter (1983, 1989) and Kotter (1982, 1985) offered a private sector viewpoint as well to the importance of networking relative to accomplishing organizational outcomes.

The fact that the networking "experts" cited most often in this study are non-educators calls into question the importance that educators place upon the value of

networking. It is interesting to note that when asked in Question 17 of the survey to indicate the importance they attach to networking, 85% of the respondents either strongly agreed or agreed with the statement that "networking with other superintendents is beneficial." In spite of the belief the respondents profess regarding the importance of networking, their actions appear to speak louder than their words.

The discrepancy between words and actions relative to networking emerged when it was discovered that 299 Iowa superintendents were named by survey respondents, and 62 superintendents were not so named. This suggested an expansive network because 83% of the superintendents were named by their peers and only 17% were complete isolates. However, probing deeper into the data led to the discovery that the network was not as inclusive as first believed. By applying the definition of an isolate to superintendents named five times or less, it was determined that 202 superintendents or 56% of the total population were relegated to isolate status. Relegating over half of Iowa's superintendents to isolate status minimizes, as Northway (1967) suggested, their contribution to others as sources of information, feedback, and moral support. Because such a large number of individuals are so infrequently named as networking contacts raises doubts about the importance that

many Iowa superintendents attach to networking in spite of their stated belief to the contrary.

In preparing the data for presentation in Chapter 4, it was found that the average number of namings for each of the 299 superintendents included in the network was 8.4. Furthermore, the statewide connectedness ratio of 0.036 indicates that the actual number of namings provided when compared to the total number of namings possible equaled about 4%. Again, results such as these raise doubts as to whether Iowa superintendents value the importance of networking. The infrequency of naming just described also contradicts the findings of Pitner and Ogawa (1981), Martin and Willower (1981), and Kmetz and Willower (1982) who maintained that superintendents and other school administrators spend a vast amount of time communicating with others. In light of the results uncovered in this study, the "others" that the aforementioned researchers spoke about are not necessarily other Iowa superintendents. Instead, communications of superintendents might be directed to individuals outside the superintendency at a rate which helps to explain the 4% level of connectedness among Iowa superintendents.

A probe into the existence of an old boy network occupied a portion of this study because of a concern that such a network may be contributing to the lack of female and

minority administrators in Iowa as a result of the glass ceiling effect. As a euphemism for discrimination, the glass ceiling creates an invisible barrier which traps those of lesser influence in lower echelon positions. With that in mind, the data accumulated as responses to the seven naming questions included with the survey, along with written comments supplied by the respondents, failed to confirm that an old boy network composed of influential superintendents operates in Iowa to the detriment of those not connected to this alliance of operatives.

If the presence of 1 non-white superintendent and 10 female superintendents from among 361 superintendents is not the result of an old boy network and the glass ceiling, what accounts for so few female or other minority superintendents in Iowa? A more likely answer might be found in the homogeneity of Iowa's population. Additionally, the answer may lie in the socialization of the sexes in American culture which often results in males internalizing a view of themselves as managers of adults and in females internalizing a view of themselves as nurturers of children.

Another possible answer to the question of so few female superintendents might be found in the reticence of male superintendents to become communicatively linked to their female counterparts. As reported earlier, the namings provided by male respondents are predominately male, and a

review of the sociograms constructed as part of this study clearly depict female superintendents on the fringes of the network, disconnected from their male colleagues. Although it is difficult to associate the disconnectedness between males and females to just one cause, this condition does denote a lack of sponsorship for aspiring female superintendents. As regards sponsorship, Kanter (1977) advocated that females must band together in support of each other's burgeoning careers. Baker (1994), however, argued that males and females must build meaningful relationships which allow female aspirants to access the same opportunities males are able to secure from other males. Based on the disconnectedness evident among superintendents in Iowa because of gender, the building of meaningful networking relationships between male and female superintendents in Iowa has a ways to go. Likewise, it would appear that networking among males has a ways to go as well. Specifically, male superintendents aged 30-39 are just as disconnected from their male peers as female superintendents are disconnected from their male counterparts. Therefore, this situation raises the question as to whether the disconnectedness cited here is more a product of inexperience than as a result of gender bias.

The strength of the connection between superintendents who are alike in age (50-59) and salary ($80,000+) and who

are placed in districts with similar enrollments (3000+) is a striking feature of the Iowa network. Likewise, superintendents communicatively close in geographic proximity, as determined by AEA affiliation, also display a strength of connectiveness. These findings are consistent with the research of Rogers and Shoemaker (1971) relative to the diffusion of innovation and information. As Rogers and Shoemaker determined, homophily, which is the similarity between individuals, and the nearness of the people engaged in communication are crucial to the exchange of ideas.

Although homophily and proximity promote the exchange of ideas, they also create networking linkages which inhibit the flow of novel information and ensure that the same information is recycled throughout the network (Granovetter, 1994). The ramifications of this relative to Iowa pertains to the fact that the most highly connected superintendents are positioned to be leaders based on the factors of salary and school district enrollment. However, if these individuals are to exert their leadership opportunities, they must establish heterophilous linkages with others who are socially different and spatially distant (Rogers & Shoemaker, 1971) in order to ensure the acquisition of new information and the dissemination of different ideas.

An observation offered by Clark (1988) that networking is most beneficial to those individuals of lesser position

speaks to the usefulness of the information embedded in this study. Individuals aspiring to the superintendency could benefit from exposure to the study during their administrative endorsement programs. For some aspirants, an awareness of the existence of a superintendents' network may have future payoffs. Among superintendents new to the field, knowledge about the network could prove beneficial in helping devise networking strategies capable of connecting them with other superintendents willing to share information or serve in a mentoring capacity.

An awareness of the Iowa network and how it works may save the time and energy of those superintendents who routinely seek reliable sources of information and support. Knowing that proximity promotes communication might cause some superintendents to become more communicatively active in their own AEAs. Information germane to the existence of 23 networking stars in Iowa might serve to give direction to the networking overtures of other superintendents seeking to become connected. Awareness that a female network is lacking in Iowa might generate efforts aimed at rectifying such a situation.

Implications for Future Research

Due to the limitations of this study, a need exists to further investigate the informal communication network of public school superintendents in Iowa and elsewhere. It is

crucial that this study be replicated if other networking interactions inherent in a superintendents' network are to be discovered. Described below are 10 suggested areas of future study.

1. A replication of this study should be conducted to determine if patterns of connectedness displayed among Iowa superintendents hold true over the next 5 years.

2. Studies should be undertaken in states which have a larger population of female superintendents than that which exists in Iowa. The duplication of this study in other states where many female superintendents reside will allow for a generalizing of results not possible in this study because only 8 female respondents participated.

3. Studies should be initiated which examine the information exchanged among Iowa superintendents from the perspective of its newness or redundancy in order to more definitively determine the degree to which the network exhibits strong-tie or weak-tie connectedness.

4. Studies should be fashioned which examine other networking relationships involving Iowa superintendents. One area worth investigating is the networking which exists between Iowa superintendents and out-of-state superintendents. Another area of research could focus on the networking that Iowa superintendents do with non-superintendents around the state.

5. A study which centers on the isolates of a network should be conducted to identify their common characteristics, the impact of isolation on their job satisfaction, and the degree to which their isolation affects job performance.

6. Research consisting of focus group and participant observer techniques should be undertaken in order to accumulate the type of information about old boy networks not generated by means of a self-reporting survey.

7. A duplication of this study should be undertaken to determine if the factors responsible for a high degree

of connectiveness among superintendents also results in similar networking patterns among assistant superintendents, secondary principals, or elementary principals.

8. Studies should be designed which center upon what superintendents new to a state or new to the office do to gain access to a network of their peers.

9. Studies which compare the differences in networking behaviors displayed by place-bound or career-bound superintendents should be undertaken.

10. A study should be formulated which analyzes the impact of electronic networking (E-mail and bulletin boards) on the informal person-to-person networking which occurs among superintendents.

The recommendations for future study listed here are offered in the hope that they will stimulate additional research into areas not examined in this study. It is further hoped that the investigation of networking among Iowa's public school superintendents does not result in any adverse consequences for the 361 individuals who were the focal point of this study.

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APPENDIX A

SURVEY INSTRUMENT

INFORMED CONSENT

You are being asked to participate in a study to determine the extent to which an informal communication network exists among Iowa's public school superintendents. For purposes of this study an informal communication network is defined as **an emergent pattern of interactions based on friendship, advice, or conversational relationships between peers of like backgrounds**. The network will be described using the attributes of *group affiliation* (gender, ethnicity, and graduate school (s) attended), *accessibility* (proximity), *status* (salary, years of experience as a superintendent, years of experience as a superintendent in your current district, and the size of your district), and *task performance* (personal qualities or demonstrated expertise). The data to be used in connection with this study will be collected by means of a sociometric questionnaire.

Once the data has been collected, adequate safeguards will be established to ensure that the confidentiality of the information you are providing is protected. At no time in the dissertation will you be personally identified, nor will your school district be identified. However, the written analysis of the data included with this study <u>may</u> make it possible for the reader to indirectly identify you or your school district. Upon completion of the analysis portion of the study, the accumulated data will be destroyed. While participation is voluntary, I am particularily desirous of obtaining your responses because this information will contribute to a better understanding of the factors impacting peer relationships among the superintendents of Iowa.

My name is Tom Hoover and I am a doctoral student in the Department of Administration and Counseling in the College of Education at the University of Northern Iowa. I am also Development Director for the Alburnett and Central City Community School Districts. If you need to contact me, you may do so at 319-438-6182 (office) or 319-334-2679 (home). You may also contact the Office of the Human Subjects Coordinator in the Graduate College (319-273-2748) for answers to questions about the rights of research subjects.

I am fully aware of the nature and extent of my participation in this project as stated above and I hereby agree to participate in this project. I acknowledge that I have received a copy of this consent statement.

(Signature of the subject)   Date

(Printed name of subject)

NETWORKING SURVEY

NAME_____

ARE YOU PRESENTLY: (Circle number)

    1 A Superintendent
    2 A Shared Superintendent
    3 An Interim Superintendent

IDENTIFY YOUR DISTRICT(s)_____
                (If you are a shared superintendent, please identify your districts)

INDICATE YOUR MOST RECENT DEGREE EARNED: (Circle number)

    1 Masters
    2 Ed.S
    3 Ph.D/Ed.D

DIRECTIONS: PLEASE INDICATE YOUR BEST ANSWERS IN ALL OF THE SPACES PROVIDED

Q-1 GENDER

    ____Male

    ____Female

Q-2 ETHNIC BACKGROUND

    ____American Indian or Alaskan native
    ____Asian or Pacific Islander
    ____Black
    ____Caucasian
    ____Hispanic

Q-3 AGE

    ____in years

Q-4 WHEN AND WHERE DID YOU COMPLETE YOUR ENDORSEMENT FOR THE SUPERINTENDENCY.

When (year completed)_____
Where (institution)_____

Q-5 AREA EDUCATION AGENCY SERVING YOUR DISTRICT

_____Name of AEA

Q-6 EXPERIENCE AS A SUPERINTENDENT

    ____total years in your current district
    ____total years as a superintendent

Q-7 CURRENT SALARY (Indicate one)

    ____Less than $50,000
    ____$50,000 - $59,999
    ____$60,000 - $69,999
    ____$70,000 - $79,999
    ____$80,000 - $89,999
    ____Above $90,000

Q-8 YOUR DISTRICT'S CERTIFIED ENROLLMENT
(If a shared superintendent, provide combined enrollment)

    _____student enrollment

Q-9 PLEASE IDENTIFY THREE IOWA SUPERINTENDENTS (IF ANY) WHO ARE YOUR MOST RESPECTED COLLEAGUES?
    Give the person's first and last name and identify his/her school district

                NAME   DISTRICT

FIRST CHOICE: _____   _____

SECOND CHOICE:_____   _____

THIRD CHOICE: _____   _____

Q-10 PLEASE IDENTIFY THREE IOWA SUPERINTENDENTS (IF ANY) WHO EXEMPLIFY EFFECTIVE LEADERSHIP QUALITIES. Give the person's first and last name and identify his/her school district.

	NAME	DISTRICT
FIRST CHOICE:	_____	_____
SECOND CHOICE:	_____	_____
THIRD CHOICE:	_____	_____

Q-11 WHEN YOU ARE IN NEED OF BUDGETING INFORMATION, WHICH IOWA SUPERINTENDENTS (IF ANY) DO YOU CONTACT? Give the person's first and last name and identify his/her school district.

	NAME	DISTRICT
FIRST CHOICE:	_____	_____
SECOND CHOICE:	_____	_____
THIRD CHOICE:	_____	_____

Q-12 WHEN DEALING WITH ISSUES RELATED TO PERSONNEL WHICH IOWA SUPERINTENDENTS (IF ANY) DO YOU CONTACT? Give the person's first and last name and identify his/her school district.

	NAME	DISTRICT
FIRST CHOICE:	_____	_____
SECOND CHOICE:	_____	_____
THIRD CHOICE:	_____	_____

Q-13 WHEN DEALING WITH ISSUES OF CURRICULUM AND INSTRUCTION, WHICH IOWA SUPERINTENDENTS (IF ANY) DO YOU CONTACT? Give the person's first and last name and identify his/her school district.

	NAME	DISTRICT
FIRST CHOICE:	_____	_____
SECOND CHOICE:	_____	_____
THRID CHOICE:	_____	_____

Q-14 WHEN SEEKING INFORMATION OR SUPPORT PERTAINING TO YOUR OWN CAREER ADVANCEMENT, WHICH IOWA SUPERINTENDENTS (IF ANY) DO YOU CONTACT ? Give the person's first and last name and identify his/her school district.

	NAME	DISTRICT
FIRST CHOICE:	_____	_____
SECOND CHOICE:	_____	_____
THIRD CHOICE:	_____	_____

Q-15 WHEN IN NEED OF EMOTIONAL OR MORAL SUPPORT, WHICH IOWA SUPERINTENDENTS (IF ANY) DO YOU
CONTACT Give the person's first and last name and identify his/her school district.

	NAME	DISTRICT
FIRST CHOICE:	_____	_____
SECOND CHOICE:	_____	_____
THIRD CHOICE:	_____	_____

Q-16 PLEASE IDENTIFY THOSE SUPERINTENDENTS (IF ANY) OUTSIDE THE STATE OF IOWA WITH WHOM YOU
MAINTAIN AN ON-GOING SOCIAL/PROFESSIONAL RELATIONSHIP? Give the person's first and last name, identify
his/her school district, and the state in which the school district is located.

	NAME	DISTRICT/STATE
FIRST CHOICE:	_____	_____
SECOND CHOICE:	_____	_____
THIRD CHOICE:	_____	_____

Q-17 HOW DO YOU FEEL ABOUT THIS STATEMENT? "NETWORKING WITH OTHER IOWA SUPERINTENDENTS IS
BENEFICIAL? (Circle Number)

1 Strongly Agree
2 Agree
3 Undecided or Unsure
4 Disagree
5 Strongly Disagree

Q-18 PLEASE COMMENT ON WHAT YOU HAVE FOUND TO BE THE ADVANTAGES AND DISADVANTAGES OF
NETWORKING WITH OTHER SUPERINTENDENTS.

Advantages

Disadvantages

APPENDIX B

ADVANCE-NOTICE LETTER

The University of Northern Iowa

December 1995

Name
Title
Name of School District
Mailing Address

Dear

Within the next few days, you will receive a request to complete a
brief sociometric survey. We are mailing it to you as part of an effort
to learn more about the informal networking patterns which may
exist among Iowa's public school superintendents. We hope that you
will take the few minutes necessary to complete and return the
survey.

Thank you in advance for your assistance with this endeavor.

Sincerely,

Tom Hoover,   Dr. Dave Else, Director
Development Director   Institute for Educational
Alburnett and Central City Schools   Leadership

APPENDIX C

PERSONALIZED COVER LETTER

AND

LETTER OF INTRODUCTION

The
University of
Northern
Iowa

December 5, 1995

Name
School District
PO Box/Street Address
City/State/Zip

Dear

Under the auspices of the Department of Educational Administration and Counseling at the University of Northern Iowa, we are conducting a doctoral research study describing the informal networking patterns of Iowa's public school superintendents. This project is concerned with addressing a gap in the research relative to the nature of the professional and social relationships existing among practicing superintendents. WITH THIS ENDEAVOR WE ARE SEEKING YOUR HELP.

The purpose of this letter is to invite you to participate in this study by completing the enclosed survey which is being sent to every superintendent in the state of Iowa. Since this is a sociometric study, the significance of our results is largely dependent upon a high rate of return from the respondents being surveyed. Therefore, the survey has been field tested among former Iowa superintendents, and we have revised it in order to make it possible for us to obtain all the necessary information while requiring a minimum of your time.

It will be very helpful if you complete the survey by December 15, 1995 and return it in the enclosed stamped envelope. Other phases of this research cannot be carried out until we complete the analysis of the survey data. Your assistance is gratefully appreciated.

Sincerely

Tom Hoover   Dr. Dave Else, Ph.D.
Doctoral Candidate   Associate Professor

sai

school administrators of iowa

REGENCY WEST 5. SUITE 140
4500 WESTOWN PARKWAY
P.O BOX 65578
WEST DES MOINES. IOWA 50265-0578
PHONE: (515) 224-3370
FAX: (515) 224-3372

December, 1995

Dear Colleague:

One of the projects we are working on this year has to do with the recruitment and retention of quality school superintendents. With the present shortage of individuals who are certified as school superintendents, the success of this project is absolutely essential.

Ton Hoover, an administrator in the Alburnett and Central City Community School District, is conducting a doctoral research study that we feel will be of assistance in our efforts to recruit and retain more individuals into the superintendency. Enclosed is a survey that Tom is asking you to complete that will assist him in completing this research project.

We believe Mr. Hoover's study can add a great deal to the superintendency in Iowa. We ask that you give serious consideration to the timely completion of this survey.

Thanks for your help.

Respectfully,

Gaylord Tryon

GT/par
Enclosure

sai : serving all of Iowa's educational administrators

Affiliated with American Association of School Administrators
National Association of Elementary School Principals
National Association of Secondary School Principals

APPENDIX D

REMINDER LETTER

The
University of
Northern
Iowa

December 1995

Name
School District
PO Box/Street Address
City/State/Zip

Dear

Several weeks ago Dave Else and I sent you a questionnaire pertaining to
the informal networking patterns of Iowa's public school superintendents.
If you already completed and returned it, please accept our sincere thanks.
If not, please do so today. We are especially grateful for your help because
we believe your response will significantly contribute to a more thorough
understanding of the networking which occurs among superintendents.

In the event that your questionnaire has been misplaced, a replacement is
enclosed. We would be happy to answer any questions you have about
this study by contacting me at (319) 438-6183 or Dr. Else at (319) 273-3358.

Sincerely,

Tom Hoover
Doctoral Candidate