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PARENT SOCIAL NETWORKS AND PARENT RESPONSIBILITY

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Dedication

I would like to dedicate this dissertation to my husband and my parents. To my husband, Monty, you have earned this degree as much as I have! How can I thank you for all you have done to make this possible for me? Thank you for the countless hours of stuffing envelopes, delivering surveys, picking up surveys, listening to me, encouraging me to persevere, and supporting me throughout this process. I truly couldn't have done this without your support and encouragement. You also provided the opportunity for me to focus my efforts at OU the last half of this program. I know you made some sacrifices so that I could do that. Thank you for being a wonderful, Godly husband. I am tremendously blessed, and I love you dearly.

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ABSTRACT

Despite benefits of family involvement for student achievement, family-school partnerships are difficult to initiate and sustain in ways that actually promote student learning in high poverty communities. Schools may be able to mitigate barriers to effective family engagement in high poverty, highly mobile communities by building social ties among families, teachers, and community partners. However, approaches to bring about such relationships are not well understood. The purpose of this study was to explore the relationship between parent social networks and individual parent responsibility. This study built upon a social network framework to better understand how social forces shape parent responsibility in education. Quantitative survey data were collected from a random sample of 5th grade parents across elementary schools in a large urban district. Two types of social networks were measured: parent networks with other parents in the school and parent networks with other adults who did not have children in the school.

Findings indicate that contact among parents within schools is limited, and that social networks are related to parent responsibility. Evidence from a post hoc analysis of the data suggest that parent social networks may serve as mediating factors in the relationship between SES and parent responsibility. By encouraging networks among parents, schools may have the ability to potentially strengthen parent responsibility.

CHAPTER I

PARENT SOCIAL NETWORKS AND PARENT RESPONSIBILITY

Introduction

Comprehensive educational reform has been at the center of educational debate in recent years. Because of perceived weaknesses in the American educational system and the perception that performance of American students is falling behind students in other parts of the world, policy makers and educational leaders have sought comprehensive school reform models to enhance educational outcomes. Reform efforts have led educational leaders to realize that schools cannot enhance educational outcomes independently of the larger social context of families and communities. Of particular interest to educational leaders is the involvement of parents in the educational process. Educational leaders and policy makers recognize that family, school, and community resources must be mobilized and must work cooperatively to bring about changes needed for students to achieve academic success. Substantial attention of educators and policy makers has been devoted to considering how to increase parent/school partnerships and to determine what kinds of parental behaviors and activities actually enhance educational outcomes.

The most common approach to parents and schools working cooperatively to enhance educational outcomes has been in the form of parent involvement initiatives. Parent involvement in the education of children is not a new concept (Berger, 1991; Epstein & Sanders, 2002). Historically, schools in the United States have been largely controlled by parents (Epstein, 2001; Hill & Taylor, 2004).

However, beginning in the mid-nineteenth century, parent control of schools diminished as the authority of the state, county and districts increased (Morris, 2009). Trained professionals assumed the responsibilities of hiring, selecting curriculum, and daily operations in schools, and parents were no longer needed as they once had been. Licensure requirements and formal education requirements further removed parents from the operating core of public schools (Coyote, 2007). By the middle of the twentieth century, many boundaries that exist today separating families and schools were formed (Hill & Taylor, 2004, p. 161). In fact, Henry (1996) refers to the separation that started in the twentieth century as a "walling out" of the community as a response to the professionalization of the teaching process (p. 15). Consequently, in recent decades, parent/school partnerships are no longer a natural result of the way schools currently operate.

A significant amount of legislation has addressed parent involvement in education including Title I of the Secondary Education Act, Public Law 94-142 Education of Handicapped Children Act (later renamed Individuals with Disabilities Education Act), the Improving America's School Act of 1994, and Goals 2000: Educate America Act. One of the most recent and comprehensive pieces of legislation to address parent involvement is the No Child Left Behind (NCLB) legislation signed into law on January 8, 2002. Sections 1116 and 1118 of NCLB drew from research in the sociology of education (Morris, 2009) and specifically addressed the need for schools to include parents in reform efforts to enhance educational outcomes (Adams, 2009). Under NCLB, local education agencies (LEAs) are required to develop written policies to engage parents, define barriers to

parent involvement, and coordinate parent involvement in programs such as Head Start and State-run preschool programs (Morris, 2009). Also under NCLB, a school's student achievement results must be made readily available to parents, teachers, and the community (NCLB, Title I, Part A, Sections 1111 and 1118).

As a result of legislation and recognition of the need for parents to be involved, educators and policy makers have responded with serious attempts to integrate parent involvement into comprehensive school reform initiatives. Educators have emphasized parental support as an important component of efforts concerning closing the achievement gap between disadvantaged and middle class students and lowering student drop out rates (Epstein, 1996; Henderson & Berla, 1994; Hoover-Dempsey & Sandler, 1997). Additionally, almost all districts include parent involvement as a performance indicator and as a defining feature of school culture (Adams, 2009). Lareau (1989) suggests that parent involvement has become such a popular notion in the United States that "it has been referred to as an 'institutional standard'" (as cited in Sheldon, 2002, p. 301).

Parental involvement in education is strongly influenced by social forces. Parents often perceive their roles in education and gain the confidence to become involved because of the influence of others around them. Evidence in the parent involvement literature suggests that social factors, such as social networks, serve as contributing factors in parents' behavior because close relationships can provide parents with access to information about effective parenting practices (Sheldon, 2002). Bronfenbrenner (1979) argued that societal forces, including social networks, contribute to parent involvement in education. Bronfenbrenner (1979)

suggested that the mesosystem, "a set of interrelations between two or more settings in which the developing person becomes an active participant" (p. 209), connects the individual with communities and society and allows social resources to flow to parents, thus affecting their beliefs, values and behaviors. Bronfenbrenner (1979) and Gordan (1979) recognized that components in the educational process do not operate in isolation and proposed that, when families and schools work together, educational goals can be reached more effectively. Additionally, Barton, Drake, Perez, St. Louis, and George (2004) developed a parent involvement framework that situates parental-school engagement as a relational phenomenon that relies on social networks as a means for involvement.

Barton et al. (2004) emphasize the social context that motivates parent involvement by stating that "engagement is a social practice, sustained through active participation and dialogue in a social world" (p. 6). Similar to Gordan (1979) and Bronfenbrenner (1979), Barton et al. (2004) view parent involvement as a socially based construct that is both situational and dynamic (Adams, 2009). Their findings suggest that formal and informal social structures embedded within different spaces or boundaries control parent-school interactions (Barton et al., 2004). Green, Walker, Hoover-Dempsey, & Sandler, (2007) also recognize the importance of parents social interactions for parent involvement. They suggest that past experiences and social influences, such as social networks, help to shape parental role construction, or parent beliefs about what they should do in the educational process (Green et al., 2007). They explain that social pressure within networks of the organization can serve as normalizing influences due to the

tendency for breeches of expectation to be informally sanctioned (Green et al., 2007; Hoover-Dempsey & Sandler, 1995, 1997). Therefore, effective initiatives to enhance parent/school partnerships must be developed with the understanding that social forces play an important role in the process.

Statement of the Problem

Numerous studies have been designed to gain insight into the relationship between parent involvement and educational outcomes leading to a significant increase in contributions to parent involvement literature since the 1970s. Despite the fact that parent involvement has been studied extensively and is substantially supported in school reform legislation and accompanying reform efforts, limitations exist in research and in practice. Varying conceptualizations and definitions in the literature have meant that parent involvement has been operationalized in a variety of ways limiting the ability of researchers to build upon the research of others or even to compare findings. Another criticism of parent involvement research is that research and practice tend to reduce parent involvement to participation in the types of measurable activities that are prescribed by the school. These activities may have very little correlation with actual student and parent needs.

The lack of substantial change in the relationship between parents and schools is not a reflection of parent desire to be involved or parent value of education. Parents of all income levels want to help their children experience success in school (Johnson, 1997). Parents of all income levels also value education as a means of economic and social mobility (Delgado-Gaitan, 1992; Goldenberg & Galimore, 1995; Scott-Jones, 1995). Additionally, parents of all income levels

(Drummond & Stipek, 2004) and ethnicity (Wong, 2006) rate involvement in their children's education as very important. However, current efforts that limit the scope of acceptable practices of parent involvement to school defined activities make the concept of parent involvement of little value to parents. Without consideration of parent and student needs, social context, parental beliefs, and parent skills it is likely that the relationship between parents and schools will remain unchanged.

The result of inconsistent relationships and goals of parents and schools has consequences for school performance. The allocation of substantial amounts of money to involve parents in the educational process with little evidence about actual change in behaviors and attitudes means that valuable resources are being used with little effort to understand the influence on educational outcomes. Inconsistent definitions of parent involvement within the literature, mixed research findings, inability of researchers to compare findings because of inconsistent definitions and conceptualizations, little change in parent-school relationships, and limitations of research (Fan & Chen, 2001) suggest that a new "lens" is appropriate for enhancing parent-school relationships (Adams, 2009). The new concept advanced in this study is parent responsibility. Practitioners, researchers, and policy makers frequently reference the importance of parent responsibility, but to date there is no evidence on its formation.

Statement of Purpose

Parent responsibility is a term that has been used extensively throughout educational circles and school reform discussions to refer to a variety of parent obligations or expectations. Despite the popular use of the term "parent

responsibility," it had not been defined in the literature. At best, the term has been ambiguous in meaning, thus, communicating different things to different people. To develop the concept, Adams (2009) used elements of responsibility found in the literature, primarily, social philosophers' theories of individual and collective responsibility and educational scholars' theories of teacher collective responsibility. This study was designed to explain and build upon Adam's (2009) conceptualization of parent responsibility as an alternative to parent involvement and, because parent behaviors are influenced by social forces, to explore the relationship between parent social networks and parent responsibility. Therefore, the purpose of this study was to explore the relationship between parents' social networks and parent responsibility. The research question was: Are parent social networks within and outside of school related to parent responsibility?

This study begins by reviewing the relevant, extant literature on social networks and parent involvement. Those sections are followed by an explanation of and definition of parent responsibility. The conceptual framework of Social Cognitive Theory was used to explain the theoretical relationship between parent social networks and parent responsibility because it provides a framework to understand how parent belief systems are influenced by social, personal, and behavioral factors (Bandura, 1989). From this conceptual framework, two hypotheses on the relationship between parent social networks and parent responsibility were advanced. The study concludes with a summary of findings, analysis, and discussion.

Definitions of Terms

Social Network

Social network is the finite set or sets of actors and the relation or relations defined on them (Wasserman & Faust, 1994, p.20).

Parent Responsibility

Relying on LoGerfo and Goddard's (2008) definition of teacher responsibility, parent responsibility is defined for this study as "a willingness of parents to take action once they have constructed their role in the educational process and their efficacy beliefs have been developed" (Adams, 2009).

Parent Role Construction

Parent role construction is defined as "what parents believe they are supposed to do in relation to their children's education and the educational process" (Hoover-Dempsey & Sandler, 1997, p. 9).

Parent Self-Efficacy

Bandura (1997) defines self-efficacy as "beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments" (p. 2). Hoover-Dempsey and Sandler (1997) built upon Bandura's definition and included parent's beliefs about their general ability to influence their child's developmental and educational outcomes, about their specific effectiveness in influencing the child's school learning, and about their own influence relative to that of peers and the child's teacher (Hoover-Dempsey & Sandler, 1997, p. 19).

Valence

Valence is used as a control variable in this study. Valence is defined as "a parent's personal history with and affective responses to school" (Walker, Wilkins, Dallaire, Sandler, & Hoover-Dempsey, 2005).

Limitations

Several limitations exist in this study. The first limitation addresses the generalizability of the results. Because data were collected from urban elementary schools in one district, results should only be generalized to parents in this district and other urban districts with similar characteristics. This study was correlational; therefore, causality cannot be inferred. A third limitation is based on the subjectivity of survey research. Survey responses can be susceptible to misunderstanding or misinterpretation of the survey statements by the respondent. A fourth limitation is a result of the response rate of the study. A response rate of 23 percent is low and suggests that findings in the study may be underestimated. Kanuk and Berenson (1975), in their synthesis of studies on respondent bias, suggest that there are often social and personality differences between respondents and non-respondents, with respondents typically being more social, responsible, and intellectually curious. This would suggest that a low response rate may actually underestimate the strength of the relationship between parent social networks and parent responsibility in the overall population.

Assumptions

The following assumptions are made regarding this study:

- Parent-level data were collected and measured without error.

- Level one errors are independent and normally distributed with a common variance.
- Residuals are uncorrelated and have constant variance.
- Observations across parents are independent.

Summary

Chapter I introduced the significance of parent/school partnerships and established how this study will contribute to the extant literature on parent involvement in education. The statement of problem was provided, and limitations of parent involvement research and the need for a new conceptualization, the lens of parent responsibility, were introduced. Chapter I also provided the purpose and significance of the research for schools, the primary research question, definition of terms, and limitations of the study.

Chapter II of the study provides a review of the literature on social networks and parent involvement. Included in the chapter are limitations of parent involvement research and an introduction to parent responsibility as a lens to address the limitations of parent involvement research.

Chapter III provides a discussion of Social Cognitive Theory (SCT) as the conceptual framework for the study and explains that SCT emphasizes self-regulatory and cognitive constructs as determinants of behavior. Among these self-regulatory processes and cognitive constructs are elements that are also found within the conceptualization of parent responsibility, role construction and self-efficacy. Justification for use of network size and frequency of contact with others is also provided in Chapter III. Two hypotheses are advanced.

Chapter IV describes research design and methods. Justification for choice of methods is presented. Included in this chapter is a description of choice and use of strategies and tools for gathering and analyzing the data.

Chapter V presents findings from the descriptive, correlational, and regression analysis.

Chapter VI discusses findings through the lens of social network theory and Social Cognitive Theory. The chapter concludes with implications for practice and research.

CHAPTER II

REVIEW OF LITERATURE

This chapter is divided into two parts: Social Networks and Parent Responsibility. The first part, Social Networks, is divided into the following sections: (a) introduction, (b) history of social network analysis, (c) social network theory (d) overview of social network analysis including characteristics of social network research such as sampling, measurement, data collection, effects of social networks, and (e) summary. The second section, Parent Responsibility, is divided into six sections: (a) introduction, (b) the history of parent-school relationships and federal legislation for parent involvement, (d) comparison of parent involvement models (d) findings and limitations of parent involvement research, (e) an introduction to parent responsibility as an alternative to parent involvement, and (f) summary.

Part I

Social Networks Introduction

> For the last thirty years, empirical social research has been dominated by the sample survey. But as usually practiced, using random sampling of individuals, the survey is a sociological meat grinder, tearing the individual from his social context and guaranteeing that nobody in the study interacts with anyone else in it (Barton, 1968, p. 1).

The interest in studying social networks, individuals in groups and the relational ties among them, has increased exponentially in recent years (Scott, 1987, 2000; Wasserman & Faust 1994). In fact, over the last decade, there has been "an explosion of interest in network research across the physical and social sciences" (Borgatti, Mehra, Brass, & Labianca, 2009, p. 892). The importance of this type of research is well documented. Barton (1968) suggests that if the aim of research is to understand people's behavior rather than simply to describe it, we must look at interactions, communication, role expectations and social structures within groups, neighborhoods, organizations, social circles, and communities (Barton, 1968, as cited in Freeman, 2004, p. 1). Interactions and exchanges within social systems are the essence of the study of social networks.

The interest in social networks crosses traditional disciplinary boundaries, and the study of social networks provide a lens through which to understand how individuals unite to form enduring, functioning societies (Borgatti et al., 2009; Freeman, 2004; Knoke & Yang, 2008). The study of social networks is truly an interdisciplinary endeavor (Wasserman & Faust, 1994) that is useful in the fields of sociology, anthropology, mathematics, economics, education, political science, psychology, communication technology, statistics, epidemiology, computer science, organizational behavior, business, marketing and physics (Freeman, 2004). Emphasizing the broad application of social network analysis, Freeman (2004) states, "social network analysis is one of the few social science endeavors in which people influence one another in such a way that they all work together to build a cumulative body of knowledge" (p. 6). Examples of topics that have been studied by

network analysts include occupational mobility, the effect of urbanization on individual well being, world political and economic systems, community elite decision making, social support, group problem solving, diffusion and adoption of innovations, corporate interlocking, belief systems, cognition or social perception, markets, sociology of science, exchange and power, consensus and social influence and coalition formation (Wasserman & Faust, 1994).

Within the literature, there are varying, yet strikingly similar, definitions of social network. Wasserman and Faust (1994) define the concept "social network" as a "finite set or sets of actors and the relation or relations defined on them" (p. 20). Jordan (2006), in a report from the Annie E. Casey Foundation, defines social network as "a set of people, organizations, or other social entities connected by a set of social relationships" (p. 9). Knoke and Yang (2008) define social network as a "structure composed of a set of actors, some of whose members are connected by a set of one or more relations" (p. 8). Hanneman and Riddle (2005) define social networks as "a set of actors (points, nodes or agents) that may have relationships (edges or ties) with one another" (p. 3). Because Wasserman and Faust (1994) is widely used as an authoritative text for network analysis, this study will use their definition. Specifically, social network is defined as "the finite set or sets of actors and the relation or relations defined on them" (p. 20).

History of Social Network Analysis

Appreciation for the value of social networks in understanding human relations has a long and complex history. Although formal social network analysis was not recognized by scholars until the mid twentieth century, Freeman (2004) and

Borgatti et al. (2009) indicate that even as early as 1853 August Comte proposed a way of looking at society through the interconnections among social actors. Fifty years after Comte's proposal, Emile Durkheim, a French sociologist, emphasized the interrelated components of human societies by comparing them to biological systems (Borgatti et al., 2009). Other sociologists including Sir Henry Maine (1861), Ferdinand Tonnies (1855), Sir Herbert Spencer (1897), Charles Horton Cooley (1909), Gustave LeBon (1897), and Georg Simmel (1908) referenced the importance of the interconnectedness among human actors (Freeman, 2004). Of these sociologists, Georg Simmel developed the most explicitly structural perspective adopted by any of the late nineteenth and early twentieth century social thinkers (Freeman, 2004). Simmel proposed that:

> a collection of human beings does not become a society because each of them has an objectively determined or subjectively impelling life-content. It becomes a society only when the vitality of these contents attains a form of reciprocal influence; only when one individual has an effect, immediate or mediate, upon another (as cited in Freeman, 2004, p. 15).

Simmel expressed the core belief that underlies modern social network analysis: that sociology is no more and no less than the study of interaction patterns among individuals or groups (Freeman, 2004). Simmel's interests in social interactions had a significant influence on his students. For example, Leopold von Wiese expanded on Simmel's ideas by studying patterns of relationships and network lines between men (Freeman, 2004). Even though these scholars understood the importance of connections between individuals in groups and

displayed an interest in examining those relationships, it was not until the early 1930s that a formal study of network connections was introduced.

Scholars typically recognize the development of formal network analysis as coming primarily through three diverse strands: sociometric analysis and graph theory, egocentric analysis of interpersonal configurations and cliques, and Manchester anthropologists who emphasized partial and total networks (Scott 1987, 2000). Beginning in the 1930s, sociometric analysts produced technical advances by using the methods of graph theory in social network analysis (Borgatti et al., 2009; Freeman, 2004; Scott, 1987, 2000). Harvard researchers in the 1930s extended social network studies by exploring patterns of interpersonal relations and the formation of 'cliques' (Scott, 1987, 2000). Manchester anthropologists built upon the two previous strands to investigate the structure of community relations in tribal and village societies (Freeman, 1989; Scott, 1987, 2000). It was not until the 1960s and 1970s that these strands were forged to introduce contemporary network analysis (Scott, 1987, 2000). Each of these strands is described in more detail.

Sociometric Analysis and Graph Theory

In the 1930s, Kurt Lewin, Jacob Moreno and Fritz Heider used laboratory methods or laboratory-like case studies to look at group structure and at the flow of information and ideas through groups (Scott, 1987, 2000). Their work led to the development of a sociocentric approach to network analysis that quantifies relationships between people within a group. Of these theorists, Jacob Moreno is typically credited with the introduction of formal network analysis (Borgatti et al., 2009; Freeman, 1989, 2004; Hummon & Carley, 1993; Knoke & Yang, 2008;

Leinhardt, 1977; Marsden & Lin, 1982; Scott, 1987, 2000; Wasserman & Faust, 1994). An incident at the Hudson School for Girls where fourteen girls ran away in a two-week period of time gave him an opportunity to use network analysis to explain the reason for the girls running away. Moreno and Jennings proposed that the reason for the increase in runaways had more to do with the social network of the girls than any personal or individual factors pertaining to the girls' personalities (Borgatti et al., 2009). In his explanation, Moreno used the word "sociometry" to represent the network patterns of the runaway girls (Borgatti et al., 2009). Following that study, in 1934, Moreno produced the first formal introduction to sociometry in a work entitled, *Who Shall Survive?* (Scott, 1987, 2000). He also founded the journal *Sociometry* in 1937 where he described methods for measuring social relations as a way to better understand the relationships between social structures and psychological well-being (Knoke & Yang, 2008; Scott, 1987, 2000).

Freeman (2004) describes Moreno's conception of sociometry as an "experimental technique, obtained by application of quantitative methods, which inquire into the evolution and organization of groups and the position of individuals within them" (p. 37). Moreno's theory of society focused on the networks of interpersonal relations that join individuals (Hares, 1996). Thus, sociometry aimed to explore ways in which peoples' relationships in groups served as limitations or opportunities for their actions (Scott, 1987, 2000). Sociometry used sociograms to map out interaction patterns within a relational framework.

The sociogram, as a way of representing the formal properties of social configurations, was Moreno's chief contribution to the field of social network

analysis (Scott, 1987, 2000). Moreno proposed that social configurations could be represented in diagrams analogous to those of spacial geometry with individuals represented by points and their social relationships to one another represented by lines (Scott, 1987, 2000). Before Moreno's work became known, people had spoken of "webs" of connection, the "social fabric," and of "networks" (Borgatti, et al., 2009). However, Moreno was the first to develop these metaphors into an analytical diagram that allowed researchers to visualize information channels, identify leaders and isolates, uncover asymmetry and reciprocity, and map chains of connections (Scott, 1987, 2000). Freeman (2004) indicates that Moreno's work displayed structural thinking through the use of explicit writing about networks and his reference to the "effects of interactions that extended beyond two individuals and the immediate group of an interacting pair" (p. 37).

During the same time period, Moreno's contemporary, Kurt Lewin, established a research center at the Massachusetts Institute of Technology (Freeman, 2004; Scott, 1987, 2000). This Center became the focus of research on social perception and group structure (Scott, 1987, 2000). Lewin (1936) emphasized the "field," "social space," and surrounding environment that comprises a group and suggested that a person's perception of his environment is the environment that matters most (Scott, 1987, 2000). Lewin (1951) used the mathematical techniques of topology and set theory to explore the interdependence between groups and their environments through a system of relations (Scott, 1987, 2000). Lewin's work served as a foundation for Cartwright and Harary who later pioneered the

application of graph theory, a set of propositions explaining how points and lines in a graph are connected (Scott, 1987, 2000).

In their work, Cartwright and Harary (1956) represented groups as collections of points connected by lines and analyzed group structure by looking at each of the members simultaneously. Cartwright and Harary (1956) built on Lewin's work to develop models of group cohesion, social pressure, cooperation, power and leadership (Scott, 1987, 2000). Cartwright and Harary (1956) developed signed or directed graphs to indicate direction of relationships (Scott, 1987). This development had significant implications for the understanding of group structure. Examining the directionality of group member interactions represented a major move forward for network analysis (Scott, 1987, 2000).

Egocentric Network Analysis: Interpersonal Configurations and Cliques

During the same time period that Moreno was developing his work in sociometry, anthropologist William Lloyd Warner and psychologist Elton Mayo undertook two major projects at Harvard that significantly affected social network analysis (Scott, 1987, 2000). Their work was largely influenced by British social anthropologist Radcliff-Brown (Scott, 1987, 2000). Their work led to a second approach to network analysis called an egocentric network approach. Instead of focusing on a bounded group and examining properties of group behavior, an egocentric approach focuses on individuals and their relationships. This approach is concerned with making generalizations about individual behavior within a group. Examples of behaviors studied through an egocentric approach include coping with stressful situations, voting behavior, and consumer behavior (Knoke & Yang, 2008).

Egocentric analysis can also be used to study organizational behavior by specifying entire organizations, groups, and communities as the ego, or object of investigation.

Perhaps the most famous egocentric analyses were the Hawthorne studies: a study of the Hawthorne Plant of the Western Electric Company in Chicago and a study of the New England community of Yankee City (Knoke & Yang, 2008; Scott, 1987, 2000). The main intellectual thrust for the Hawthorne studies came from Warner's desire to use ethnographic field methods in the study of industrial communities (Warner, 1988). The Yankee City Project focused primarily on the study of social stratification within the community. In his findings, Warner concluded that sub-groups, or cliques, within larger groups integrate actors into communities through informal and personal relations (Scott, 1987, 2000). Warner's use of 'clique' made an important contribution to network analysis because he used network terminology to describe the structuring of societies into sub-groups (Scott, 1987, 2000). The study of the Western Electric Company in Chicago was an attempt to discover how alterations in the physical conditions of work affected employee productivity (Scott, 1987, 2000). Findings from the study suggested that productivity was increased among workers, not as a result of alterations of physical conditions, but instead productivity was increased because managers were taking an increased interest in workers (Scott, 1987, 2000). Their efforts were motivated by an enhanced sense of involvement and integration into the life of the factory (Scott, 1987, 2000)

These studies were significant not only because the orientation of the research brought continuity to the field, but they also used sociograms in an

egocentric approach to report on group structure and interactions among individuals (Freeman, 2004; Scott, 1987, 2000). These researchers identified sub-groups within the larger group and called these sub-groups "cliques" (Scott, 1987, 2000). Thus, the Hawthorne investigation of the bank wiring room was the first major egocentric investigation to use sociograms using circles to represent people and arrows to represent relationships, and the Yankee City investigation was the first to use a Venn diagram to represent cliques (Scott, 1987, 2000). Additionally, in the second volume of the Yankee City report, Warner and Lunt (1942) presented a series of matrices to show the numbers of people occupying structurally defined positions. Their use of matrices further influenced the field of social network analysis (Scott, 1987, 2000).

The study of social networks advanced through the use of graph theory and matrix algebra during the 1940s and 1950s (Borgatti et al., 2009). Researchers from the Group Networks Laboratory at the Massachusetts Institute of Technology (MIT), founded by Lewin, examined communication structures and their effects on the speed and accuracy of group problem solving (Borgatti et al., 2009). Findings by Bavelas (1948) helped to explain centrality, a fundamental concept of network analysis. Bavelas suggested that information transfer is enhanced through a centrally situated "integrator" who has short distances to all other members of the network (Borgatti et al., 2009). This work at MIT caught the attention of other researchers in the fields of psychology, political science, and economics (Borgatti et al. 2009).

In the 1940s, George Homans (1941) conducted a theoretical synthesis of small group work previously done in the United States (Scott, 1987, 2000). Homans

was motivated by his dissatisfaction with group theories previously developed by colleagues whom he criticized as being too abstract (Scott 1987, 2000). Homans synthesized small group research that had been done in the United States by using Moreno's sociometry as a methodological framework for applying his small group theory (Scott, 1987, 2000). Homan's use of matrix re-arrangement, rearranging data within a matrix until patterns are distinguished to uncover important structural features of the clique was a major contribution in social network analysis (Scott, 1987, 2000).

Homans' work led to the development of a number of hypotheses about results of interaction patterns including the assumption that people who interact frequently will tend to have similar characteristics and that, as the frequency of interaction increases, the degree of liking for one another will increase (Scott, 1987, 2000). Homan's contribution to social network analysis was limited by his interest in exploring the explanation of social behavior using behaviorist and rational choice models (Scott, 1987, 2000). Ultimately, Homans became identified with the framework of exchange theory, and his work had little impact on the shape of formal network analysis during the 1950s and 1960s (Scott, 1987, 2000).

Total and Partial Network Analysis: Manchester Anthropologists

During the 1950s, John Barnes, Clyde Mitchell, and Elizabeth Bott, used an anthropological approach to study group relations. They sought to develop the ideas of Radcliffe-Brown by emphasizing conflict and change in their studies of social network rather than focusing on integration and cohesion (Scott, 1987, 2000). Max Gluckman, whose work on African tribal societies examined the role of conflict and

power in the maintenance and transformation of social structures, encouraged his three colleagues to pursue similar themes (Scott, 1987, 2000). Barnes, Mitchell, and Bott separately emphasized the structure of relations that arose from the exercise of conflict and power within a group (Scott, 2000), and their work closely resembled conflict theory in sociology (Scott, 2000). They viewed society as a tapestry "woven from the network of individuals" (Scott, 1987, p. 27). Bott, whose work was significantly influenced by Moreno's and Lewin's sociocentric approach, was interested in kinship relations, and she used the term 'network' to analyze forms and structures of these kinship ties (Scott, 2000). Barnes exercised his interest in kinship, friendships and neighboring communities in the study of a small village community in Norway. Barnes looked at informal relations as a "partial network" within the total social network (Scott, 2000). Mitchell's contribution to the field of social network analysis was the most enduring of the three. Mitchell's main contribution was the application of the mathematics of graph theory and the development of a systematic framework for social network analysis (Scott, 2000).

During the 1960s, anthropologists began using the network frameworks to view societies as patterns of relationships rather than monolithic entities, to represent kinship systems as relational algebras, and to explain outcomes of social ties (Borgatti et al., 2009). The focus on outcomes included a classic ethnographic study by Bott in which she attempted to explain variation in the performance of husband and wife roles by examining twenty urban British families (Borgatti et al., 2009). Bott found that the density of a family network predicted the degree of segregation in the role-relationship of husband and wife (Borgatti et al., 2009). The

significance of this finding is that it suggested the structure of a larger network, the extended family, could influence relations and behaviors between husband and wife (Borgatti et al., 2009). Despite accomplishments in the 1960s, by the end of that decade, there was no version of network analysis that was universally accepted as a paradigm for social research (Freeman, 2004).

The Joining of Sociocentric and Egocentric Approaches

The late 1960s and 1970s have been referred to as a renaissance for social network analysis (Freeman, 2004). During this time period, the two branches of social networks, sociocentric studies, a sociological approach, and egocentric studies, an anthropological approach, came together (Scott, 1987, 2000). Until this time, social network analysis in sociology and anthropology operated independently of one another. To unite the two strands, Harrison Colyer White built upon the work of Moreno, Warner, Lewin, Levi-Strauss, and Radcliffe-Brown to bring a structural perspective to social network analysis (Freeman, 2004). White and Lorrain (1971) expanded the use of network analysis by producing a network model in which actors, or nodes, consisted of structural positions rather than individuals (Borgatti et al., 2009). This development, examining roles instead of individuals, broadened the use of network analysis to other structural settings like large corporate structures or large economic systems (Borgatti et al., 2009). This work helped to merge the two strands of network analysis by establishing network analysis as a method of structural analysis (Scott, 1987, 2000).

Also during the 1970s, Granovetter (1973) made a significant contribution to the study of networks by introducing his “strength of weak ties” theory. Using an

information diffusion model, Granovetter suggested that strong ties within homogenous networks result in the transmission of redundant information due to the fact that individuals within such networks know each other well and have similar characteristics (Granovetter, 1973). Therefore, they transmit knowledge that is familiar to the group. Granovetter suggested that weak ties, or mere acquaintances, are more likely to be sources of novel information and, therefore, can potentially provide significant benefit to the individual. The exchange of information depends, at least partially, on the strategic location of a person's contacts in the flow of information (Granovetter, 1973). Granovetter's idea was used later in the development of a general theory of social capital (Coleman, 1988; Borgatti et al., 2009). The idea behind social capital is that social contacts provide access to resources that ultimately lead to individual and group benefits such as better jobs, faster promotions, or increased performance (Coleman, 1988; Borgatti et al., 2009).

Social network analysis became an established field within the social sciences in the 1980s with the establishment of a professional organization, the International Network for Social Network Analysis (INSNA). During this time, the availability of computers enhanced the development of sophisticated measures of network structure. INSNA began holding annual conferences and has been the vehicle for the introduction of specialized software for network analysis (Borgatti et al., 2009). The journal, *Social Networks*, is a publication of INSNA.

Because of the popularity and wide applicability of social network analysis, by the 1990s, social network analysis spread into a number of research and applied fields. Applied fields include management consulting, public health, schools, and

national security (Borgatti et al., 2009). Borgatti et al. (2009) suggests that, of these applied fields, network analysis is most extensively seen in national security. Terrorist groups are typically viewed as networks, and the assertion that "it takes a network to fight a network" has influenced the military's use of decentralized units in its fight against terror (Borgatti et al., 2009, p. 893).

Social Network Theory

One of the most common criticisms of social network research is that it is merely descriptive or is a methodological approach that lacks a theoretical understanding (Borgatti et al., 2009). Despite this criticism, many theories within traditional social science, such as exchange theory, share common properties with social network analysis because of the focus on causes and consequences of relations between people and sets of people. Currently, there is no commonly accepted comprehensive theory of social network analysis; however, there is agreement that network analysis has applications for social science theory. This section will explain past efforts to develop a comprehensive theory of social networks. It will also discuss commonalities of social science theory to network analysis. A more comprehensive discussion of methodology is included in the next section.

One of the most commonly used approaches for network analysis is to look at social networks through the lens of social capital. It is important to note that, while social network and social capital are sometimes used interchangeably in the literature, there is a distinct difference between these concepts. Social networks are the actual connections between people, while social capital refers to the systemic or

cumulative results of social ties or the resources embedded in those networks (Jordan, 2006). In other words, social capital consists of the latent or active resources that accumulate from the ties that exist among actors (Jordan, 2006, p. 9). Lin (1999, 2005) has worked to merge the concepts of social network and social capital into one comprehensive theory. Lin's goal is to create a network theory of social capital based upon the understanding that "social capital is captured from embedded resources in social networks" (Lin, 1999, p. 28). Despite this movement, the emphasis in social network literature is to treat the two concepts as distinct concepts and to use social capital theory to explain characteristics and outcomes of social networks (Jordan, 2006).

Cartwright and Zander (1953) have also suggested that formal concepts of network analysis can be used to produce a formal theory. Benefits of a formal theory, they suggest, include broader application of network concepts to organize and interpret relational data (Scott, 2000). Scott (2000) suggests that some writers have advocated using an exchange perspective of social networks to build a comprehensive theory. Exchange theory, developed by George Homans, John Thibaut, Harold Kelley and Peter Blau (Emerson, 1976), stresses the exchange aspects of interactions within a group that generate obligations (Cropanzano & Mitchell, 2005). An additional attempt to formalize a social network theory came from Emirbayer (1997) who has proposed that network analysis serve as the basis for what he called a 'relational sociology' (Scott, 2000, p. 37) meaning a branch of sociology studying causes and consequences of relational ties.

The reason for numerous attempts to formalize a comprehensive theory is due to the common understandings among social network analysts that represent theories, models, and applications that are expressed in terms of relational concepts or processes (Wasserman & Faust, 1994). Freeman (1984) suggests that the methods of social network analysis provide "formal statements about social properties and processes" and are consistent with social network theory (as cited in Wasserman & Faust, 1994, p. 11). Wasserman and Faust (1994) suggest that concepts of social network analysis are the result of the application of social theory to network methods. They state that social network concepts developed out of a "propitious meeting of social theory and application with formal mathematical, statistical, and computing methodology" (p. 10). Despite the efforts to form a comprehensive theory, the typical use of social network analysis is as an "orientation towards the social world that inheres in a particular set of methods" and is not considered a formal social theory (Scott, 2000, p. 37).

Social Network Analysis

Social network analysis consists of a vast and complex analytical process. It provides a "formal, conceptual means for thinking about the social world" (Wasserman & Faust, 1994, 11). For the purposes of this study, a brief overview of social network methods and terms is provided. Currently, Wasserman and Faust's (1994) discussion on network methodology is considered one of the most authoritative and comprehensive, and their text is widely used. Scott (1987, 2000), Hanneman and Riddle (2005), and Knoke and Yang (2008) are also good sources of information, and all base their work on the work of Wasserman & Faust. The

purpose of this section is to introduce network analysis methods and to discuss the use of sociological theory in network analysis.

Social network analysis emphasizes common assumptions, understandings, and methodologies (Wasserman & Faust, 1994). It is an approach that is based on the "study of relationships or interactions among social actors" (Freeman, 2004, p. 2). Social network analysis represents a shift in traditional sociological research that was, historically, designed to study the behavior of individuals with little regard for the social aspect of that behavior (Freeman, 2004). In contrast to conventional research data that focus on actors and attributes, network data focus on actors and relationships among the actors (Hanneman & Riddle, 2005). The goal of network analysts is to uncover various kinds of patterns in which actors are embedded. Freeman (2004) suggests that four features found in social network analysis combine to define the field. These features are: (a) an emphasis on relational ties, (b) grounding in systematic empirical data, (c) the use of graphic imagery to illustrate patterns of relationships, and (d) reliance on the use of mathematical and/or computational models to represent findings (Freeman, 2004).

As noted previously, social network analysis is based on an appreciation of the importance of relationships among interacting actors (Wasserman & Faust, 1994); therefore, the observed attributes of social actors are understood in terms of patterns or structures of ties among them. An emphasis is placed on the relational ties among actors rather than on individual attributes of actors (Scott, 1987, 2000; Knoke & Yang, 2008; Wasserman & Faust, 1994).

Common approaches of network analysis include looking at types of relational ties, the importance of social structure, the formation of ties, network properties, and outcomes or consequences of networks. Social network analysts commonly seek to understand how different kinds of relational ties affect each other and the behavior of individuals (Borgatti et al., 2009). In the social sciences, researchers often use analytic and theoretical techniques to distinguish among different kinds of dyadic links among individuals (Borgatti et al., 2009).

Another commonality among social network analysts is that social and organizational structure matter and that outcomes depend on the patterns of relationships that exist among members of a network (Borgatti et al. 2009). Consideration of the consequences of networks is another primary focus of network research (Borgatti et al., 2009). A social capital lens is commonly used when focusing on consequences of network interaction because researchers generally agree that an actor's position in the network determines availability of resources and opportunities or constraints in utilizing those resources (Borgatti et al., 2009).

Social network analysts also agree that actors become homogeneous as a result of experiencing and adapting to similar social environments (Borgatti et al., 2009). Network analysts refer to Granovetter's (1973) "strength of weak ties" theory that suggests that individuals may obtain more resources through acquaintances rather than close, familiar relationships because of the phenomenon of homogeneity. Burt's (1992) concept of "structural holes" corresponds with Granovetter's theory in that he proposes that contacts that are tightly bound together, nodes with few structural holes, can communicate and coordinate so as to create solidarity in

dealing with other networks (Borgatti et al., 2009). Additionally, the idea of binding mechanisms in social networks is an important development in social network analysis. This approach suggests that as nodes become bound in social networks, a new entity is constructed whose properties may be different from constituent elements (Borgatti et al., 2009).

Properties of Social Network

A key characteristic of social network analysis has been the use of sociographs to characterize positions, structures, the overall shape of ties, and dyadic properties (Borgatti et al., 2009). Dyadic properties refer to the cohesion or the connectedness of the group structure (Borgatti et al., 2009). Key concepts used to describe characteristics of social networks are actor (or node), relational tie, dyad, triad, subgroup, group, relation and network (Wasserman & Faust, 1994). For a social network to exist, it must consist of actors (nodes) and their relations (ties) (Borgatti et al., 2009; Hanneman & Riddle, 2005; Jordan, 2006; Knoke & Yang, 2008; Scott, 1987, 2000; Wasserman & Faust, 1994). Nodes represent an individual or entity within a network that can connect with other nodes (Jordan, 2006, p. 22). Within social network research, nodes do not always represent individuals. Nodes can also represent collectives such as informal or formal groups such as corporations or other large organizations (Knoke & Yang, 2008; Wasserman & Faust, 1994). Common examples of individual nodes, or actors, include teachers within a building, children on a playground, high school students attending a prom, employees in a corporate work team, staff and residents in a nursing home, or terrorists working cooperatively with a cell (Knoke & Yang, 2008). Collective

actors may be firms competing in an industry, schools within a large urban district, voluntary associations raising funds for charities, or nations signing a military alliance (Knoke & Yang, 2008).

Relational ties among actors are depicted as lines or edges in sociograms (Hanneman & Riddle, 2005; Scott, 1987, 2000; Wasserman & Faust, 1994). Relations are typically defined by a specific kind of contact or tie between a pair of actors (Knoke & Yang, 2008). Relations may be either directed, where one actor initiates contact and the other receives, or non-directed where mutuality or reciprocity occurs (Knoke & Yang, 2008). Relations are not the attributes of one or both actors; instead, relations are joint dyadic properties that exist as a result of the association between actors (Knoke & Yang, 2008). Relations represent some form of direct transmission from node to node (Borgatti et al., 2009).

Relational data may be presented in matrices called socio-matrices or graphs called sociograms (Wasserman & Faust, 1994). A social network graph is composed of nodes connected by edges and may represent a single type of relationship among actors or more than one kind of relation (Hanneman & Riddle, 2005). Social network analysis focuses on dyads (two actors and their ties), triads (three actors and their ties) or larger systems (subgroups of individuals or entire networks) (Wasserman & Faust, 1994). Scholars also study entire groups, a finite set of actors who for conceptual, theoretical, or empirical reasons are treated as an entity on which network measurements are made (Wasserman & Faust, 1994).

Network properties that are commonly studied are network size, density and centrality (Borgatti et al., 2009; Hanneman & Riddle, 2005; Knoke & Yang, 2008;

Scott, 1987, 2000; Wasserman & Faust, 1994). Network size is important because it can give insight concerning the resources and capacities that each actor has for obtaining resources or maintaining ties (Hanneman & Riddle, 2005). Density refers to the general level of linkages among the points on a graph (Scott, 1987, 2000) and is measured by calculating the number of lines in a graph in proportion to the number of possible lines in a network (Hanneman & Riddle, 2005; Wasserman & Faust, 1994). It is defined as the sum of the ties divided by the number of possible ties (Hanneman & Riddle, 2005). Density can provide insight into information diffusion and social resources available to actors within a network (Hanneman & Riddle, 2005).

Centrality and degree are important network characteristics. Centrality is a set of properties relating to the prominence of a node in a network (Borgatti et al., 2009). It refers to the number of connections a point or node has with other points in its immediate environment (Scott 1987, 2000). Centrality can be used to determine a node's potential influence or strategic significance to the overall structure (Scott, 1987, 2000). Degree refers to the number of points to which a point is adjacent and is an important component in measuring centrality (Scott, 1987, 2000).

When looking at individual connections between actors, three additional network characteristics can be considered (Jordan, 2006). Exchange is a concept that refers to resources that are given and received through network connections (Jordan, 2006). Directionality is a characteristic of social network that refers to the direction or origination of resource exchange (Jordan, 2006). Direction offers suggestions about the amount of time required for information to flow between

individuals in a network and how power may be used in a relationship to regulate the exchange of resources or setting of norms (Jordan, 2006). Flow indicates the efficiency and frequency of exchanges as they move between actors (Jordan, 2006). Low-flow connections, actors who interact infrequently in a low contact environment, and high-flow connections, actors who interact frequently in high contact environments, may have significantly different levels of resource exchange (Jordan, 2006).

Distance is also another property that is of interest to social network analysts. Measuring the direct connections from one actor to the next can provide important information about characteristics of the network as a whole (Hanneman & Riddle, 2005). Distance is described by the terms walks, paths, trails and semi-paths (Hanneman & Riddle, 2005). A walk is defined as "a sequence of actors and relations that begins and ends with actors" (Hanneman & Riddle, 2005, Ch. 7). A trail between two actors is "any walk that includes a given relation no more than once" (Hanneman & Riddle, 2005, Ch. 7). A path is a walk in which each actor *and* each relation in a graph can be used only one time (Hanneman & Riddle, 2005); therefore, all paths and trails are walks, but not all walks and trails are paths (Hanneman & Riddle, 2005).

Network Sampling

Sampling techniques for the study of social networks can be quite complex. Because network methods focus on relations among actors within a given population, most network studies focus on well defined, completely enumerated sets rather than drawing samples from within a given population (Hanneman & Riddle,

2005; Wasserman & Faust, 1994). Network analysts tend to include all of the actors in a population or populations whenever possible (Hanneman & Riddle, 2005; Scott, 1987, 2000). This approach, called a socio-centric design (Laumann, 2006), is common for the study of small collectivities such as classrooms, offices, social clubs, or villages (Wasserman & Faust, 1994). It yields the maximum of information because it allows for powerful descriptions and thorough analysis of social structures (Hanneman & Riddle, 2005).

When the boundaries of a network cannot be known, researchers can draw on special sampling techniques such as snowball sampling or random sets (Fararo, 1981, 1983; Fararo & Skvoretz, 1984 as cited in Wasserman & Faust, 1994, p. 33). Snowball sampling involves beginning with a focal actor or set of actors who are asked to name ties to other actors. This process, called an egocentric design method (Laumann, 2006), continues until no new actors are identified or the researcher decides to stop (Hanneman & Riddle, 2005). These sampling methods may resemble those used in conventional survey research, yet they yield less information about network structure than the study of entire networks (Hanneman & Riddle, 2005). However, the use of these sampling methods is less costly and allows easier generalization from the sample to the larger population (Hanneman & Riddle, 2005). Sampling technique is determined by the purpose of the study, size of the network, and resources available (Hanneman & Riddle, 2005). Frank (1977, 1978, 1979, 1985 as cited in Wasserman & Faust, 1994 p. 34) is widely known as a respected expert for techniques in sampling of social networks.

Network Data, Measurement, and Collection

Social network data consist of one or more relations measured among a set of actors (Wasserman & Faust, 1994). Social network data can be studied at a number of different levels. Levels include the individual actor, a pair of actors or dyad, three actors or triad, a subset of actors or the network as a whole (Wasserman & Faust, 1994). Two properties of relations are important for measurement. These properties include whether the relation is directional or non-directional and whether the relation is dichotomous or valued (Wasserman & Faust, 1994). Dichotomous relations are typically coded as being present or absent. Valued relations take on a range of values including strength, intensity, or frequency of interactions between actors (Wasserman & Faust, 1994). Data collection techniques for the collection of social network data include questionnaires, interviews, observations, archival records, experiments, and other techniques including ego-centered, small world and diaries (Wasserman & Faust, 1994, p. 45). An ego-centered network consists of a node (ego) and a set of alters who have ties to that node. Small world studies are studies that are designed to determine the distance, or how many actors a respondent is removed, from a target individual based on acquaintanceship (Wasserman & Faust, 1994, p. 53).

Effects of Social Networks

Network analysts generally agree that resources are embedded in social networks (Lin, 1999), and that actors within networks have access to resources through relational ties (Scott, 1987, 2000). Commonly emphasized resources within networks include wealth, power or status (Lin, 1999) or information and knowledge

transfer (Daly & Finnigan, 2010). The theory of social capital suggests that social contacts provide access to resources that ultimately lead to individual and group benefits such as better jobs, faster promotions, or increased performance (Coleman, 1988; Borgatti et al., 2009). The size of a network and the volume of capital (economic, cultural and symbolic) possessed by individuals within the network affect resource accessibility (Bourdieu, 1986). Therefore, individuals within a network with a high volume of capital have the potential to benefit from opportunities to exchange information and foster relationships that enhance resource attainment.

Another effect commonly accepted among network analysts is that network structure affects the quality and flow of information within a network (Granovetter, 2005). An actor's position in the network influences the actor's access and use of embedded resources (Burt, 1992; Lin, 1999). Granovetter (1973) suggested that the exchange of information or other embedded resources depends, at least partially, on the strategic location of a person's contacts in the flow of information within a network (Granovetter, 1973). For example, centrality provides information about an actors' ties within a network. An actor with strong centrality may serve as a conduit of information within a network while an actor who is isolated may have access to very few resources within the network.

Homogeneity also influences actors within a social network. Granovetter (1973) suggested that strong ties within homogenous networks result in the transmission of redundant information due to the fact that individuals within such networks know each other well and have similar characteristics (Granovetter, 1973).

Granovetter suggested that weak ties, or mere acquaintances, are more likely to be sources of novel information and, therefore, can potentially provide significant benefit to the individual. He suggests that moving in a wider circle than immediate, close acquaintances can provide access to novel information and greater resources (Granovetter, 2005).

Connectivity and bridging are important for resource transfer. Burt (1992) suggests that individuals with ties into multiple networks, bridges between multiple networks, may have a strategic advantage to resources than individuals embedded in a single network. Additionally, connectivity within networks may facilitate the exchange of resources if relationships with sufficient connectivity are in place; however, network structure also may constrain resource exchange if ties are not sufficiently connected (Daly & Finnigan, 2010; Hite, Williams, & Baugh, 2005). For example, in schools, parents with connections to other parents and teachers have the potential to benefit from information exchange that can lead to enhanced educational outcomes. Parents can become aware of school expectations, student performance, opportunities for involvement, and other important information that can benefit the student.

Another effect of social networks is that attitudes and behavior of actors within networks are influenced through relational ties (De Lange, Agneessens, & Waege, 2004). Homans' (1941) work led to the development of a number of hypotheses about results of interaction patterns within networks including the assumption that people who interact frequently will tend to have similar characteristics and that, as the frequency of interaction increases, the degree of

liking for one another will increase (Scott, 1987, 2000). Attitudes and behaviors of actors within a network are affected because social networks are an important vehicle for reward and punishment (Granovetter, 2005). Behavioral norms, shared ideas about the proper way to behave, are established within networks as rewards or punishments are magnified when coming from others personally known (Granovetter, 2005). Actions that are rewarded within a group become group norms, and actions that deviate from accepted norms are sanctioned. Granovetter (2005) explains that norms are more easily enforced and more firmly held in dense social networks. Greater density within a network provides more opportunity for communication about ideas for proper behavior and reward for corresponding behavior. Deviance from norms is more difficult to hide in dense networks resulting in greater opportunity for sanction (Granovetter, 2005).

Another commonly accepted effect of social networks is that relationships and structures within a network become stable over time and can either strengthen or inhibit imposed change or reform (Hanneman & Freeman, 1984; Hannan, Polos & Carroll, 2004). Jordan (2006) suggests that social networks contribute to change efforts through resilience, growth and reach. Social networks that are strong enough to withstand stress from contextual factors maintain resiliency necessary to keep the network in tact and can potentially enhance reform efforts (Jordan, 2006). For example, relationships developed through parent organizations such as parent-teacher associations can function as channels of communication for promotion of reform initiatives such as personnel, procedural, or curriculum changes.

Summary

Social network analysis involves a complex system of data analysis, specific sampling techniques, and the application of a variety of social theories. Decisions about methods and the application of theory are made by the researcher as determined by the purpose and limitations of the study. The wide applicability of social network analysis across disciplinary boundaries and its ability to suggest explanations for both group and individual behavior have caused the use of social network analysis to "explode" in recent years (Borgatti et al., 2009). Social network analysis attracts the attention of researchers seeking to apply complex mathematical properties to social science research as well as researchers seeking to gain an understanding of relational phenomena. The use of computer software for data analysis of group characteristics, outcomes and behaviors will enhance interest in the field.

The effects of social networks include embeddedness of resources (Lin, 1999) to which actors within a network have access through relational ties (Scott, 1987, 2000). Another effect commonly accepted among network analysts is that network structure matters because it affects the quality and flow of information within a network (Granovetter, 2005). For example, an actor's position in the network influences the actor's access and use of embedded resources (Burt, 1992; Lin, 1999). Connectivity is a structural element within networks that may facilitate the exchange of resources if relationships with sufficient connectivity are in place; however, network structure also may constrain resource exchange if ties are not sufficiently connected (Daly & Finnigan, 2010; Hite, Williams & Baugh, 2005).

Attitudes and behavior of actors within networks are influenced through relational ties (De Lange, Agneessens, & Waege, 2004). Granovetter (2005) suggested that actors' liking for one another is enhanced through frequent contact, and that frequency of interaction produces similar characteristics among actors. Attitudes and behaviors of actors are also influenced through network connections because social networks are an important vehicle for reward and punishment (Granovetter, 2005). Actions that are accepted become behavioral norms, and actions that contradict such norms are sanctioned within the network. Another commonly accepted effect of social networks is that relationships and structures within a network become stable over time and can either strengthen or inhibit imposed change or reform (Hanneman & Freeman, 1984; Hannan, Polos & Carroll, 2004). These effects of social network have important implications for educational policy and practice.

Part II

Parent Responsibility

Introduction

There has been a significant increase in contributions to parent involvement literature since the 1970s. The concept of parent involvement has been studied extensively and is substantially supported in school reform legislation and accompanying reform efforts. However, inconsistent definitions within the literature, mixed research findings, little change in parent-school relationships, and limitations of research suggest that a new "lens" is appropriate for enhancing parent-school relationships. The purpose of this section is to explain and build upon

Adam's (2009) conceptualization of parent responsibility as an alternative to parent involvement. Part II is divided into six sections: (a) introduction, (b) the history of parent involvement and federal legislation for parent involvement, (c) comparison of parent involvement models (d) findings and limitations of parent involvement research, (e) an introduction to parent responsibility as an alternative to parent involvement, and (f) summary.

History of Parent-School Relationships and Federal Legislation for Parent Involvement

Parent involvement in the education of children is not a new concept or practice (Berger, 1991; Epstein & Sanders, 2002). Concerns about student achievement and the effectiveness of schools have led to increased attention to the role of parents in the educational process as educators and policy makers consider how to increase parent involvement. A first step toward this objective is to determine what kinds of parental behaviors and activities actually enhance educational outcomes.

Historically, schools in the United States have been largely controlled by parents (Epstein, 2001; Hill & Taylor, 2004). In the eighteenth and nineteenth centuries, parents were key decision makers in all aspects of schooling including selection of curricula, the hiring and firing of teachers (Epstein, 2001), and apprenticeships in family businesses (Hill & Taylor, 2004). Beginning in the mid-nineteenth century, parent control of schools diminished as the authority of the state, county and districts increased (Morris, 2009) By the middle of the twentieth century, boundaries that exist today separating families and schools were formed

(Hill & Taylor, 2004, p. 161). A significant factor influencing the authority of parents in public education occurred when superintendents were given responsibility for day-to-day operations of schools and local school boards began to replace city government in managing schools (Button & Provenso, 1989 as cited in Morris, 2009). Trained professionals assumed the responsibilities of hiring, selecting curriculum, and daily operations, and parents were no longer needed as they once had been. Licensure requirements and formal education requirements further removed parents from the operating core of public schools (Coyote, 2007), for up until that time a common assumption was that "anyone could teach" (DeMoss & Vaughn, 1998; Tyack & Hansot, 1982 as cited in Morris, 2009). In fact, Henry (1996) refers to the separation that started in the twentieth century as a "walling out" of the community as a response to the professionalization of the teaching process (p. 15).

The Industrial Revolution further affected relationships between parents and schools. Henry (1996) suggests that a we-they mentality began with schools and homes viewed in opposition to each other. Parent responsibility was perceived to be primarily in the home as parents prepared children for schooling by teaching values and moral behaviors while schools were left with the formal responsibility of educating students (Morris, 2009). Additionally, family and school responsibilities began to be perceived as sequential (Hill & Taylor, 2004). Hill and Taylor (2004) suggest that "families were responsible for preparing their children with the necessary skills in the early years, and schools took over from there" (p. 161).

After World War II, parents/school conflicts were evidenced when parents began seeking legal remedies to address concerns about education (Morris, 2009). *Brown v. Board of Education of Topeka* in 1954 not only made public school segregation illegal, but it was also the first time a parent sued a school district and won (Morris, 2009). Since that time, legal remedies have become a common source of resolving parent-school conflict. Legislation passed since the 1960s has represented numerous attempts to link home and school efforts in the education of America's children.

In the late 1950s, the USSR launched Sputnik, and the United States "was shaken with the realization that another nation might be ahead of it" (Berger, 1991, p.7). Berger (1991) suggests that there were three major changes in educational thought that followed Sputnik. These changes included a growing sense of the need for empowering parents to make educational decisions for their children, a cultural awareness of diversity, and the view of parents as an essential component in the education of children. Therefore, an emphasis was placed on parents as an essential component in America's efforts to compete globally (Berger, 1991).

The Civil Rights Act, passed in 1965, was a major attempt by the federal government to improve equality and reduce poverty. The passage of this Act had direct implications for public schools. Coleman's report in the mid-1960s (Coleman, Katz, & Menzel, 1966) further prompted researchers to gather evidence that the home environment is as important for learning as the school environment (Henderson & Berla, 1994). As a result, family involvement in education gained

additional attention in major educational legislation and government funding for educational programs such as Head Start (Morris, 2009).

Since the 1970s, Title I of the Elementary and Secondary Education Act has required schools to include low-income parents in educational planning (Johnson, 1997). Through Title I, low-income parents were given the opportunity to make recommendations on instructional goals and were able to establish district and school advisory councils (Morris, 2009). Also, Public Law 94-142, the Education of Handicapped Children Act, passed in 1975, represents the first time that parental involvement became a federally mandated requirement (Morris, 2009). Public Law 94-142 has since been renamed the Individuals with Disabilities Education Act (IDEA) and has become a major source of federal support for handicapped students in public schools. In order to receive funds through IDEA, schools are required to include and provide documentation of parent participation in educational plans made for eligible students.

The 1980s marked a decrease in parent involvement initiatives as Title I was renamed Chapter I, and the requirement of parent involvement was removed from the document (Morris, 2009). However, educators and policy makers continued to recommend parent involvement (Berger, 1991), and publications from the U.S. Department of Education, National Association of State Boards of Education, National Association for the Education of Young Children, and the Council for Exceptional Children recommended parent involvement (Morris, 2009). During this time, the National Commission on Excellence in Education (1983) listed parent

involvement as a significant goal and target for educational reform (Grolnick & Slowiaczek, 1994).

During the 1990s, federal attention returned once again to parent involvement in education. The Improving America's Schools Act of 1994 (IASA) reauthorized Title I and made significant changes to the parent involvement section (Johnson, 1997) providing even more emphasis on the role of parents in policymaking and implementation (Morris, 2009). In an effort to improve education for all students, the United States Department of Education, in 1990, issued GOALS 2000: Educate America Act. This document contained six broad objectives that all public schools were required to meet before the turn of the century. The Educate America Act and the Reauthorized Elementary and Secondary School Act both contain provisions for parent involvement that have made involving parents in the educational process a national priority (Baker, Kessler-Sklar, Piotrkowdki, & Parker, 1999; Kessler-Sklar & Baker, 2000).

The most recent and comprehensive legislation to address parent involvement is the No Child Left Behind (NCLB) Act proposed in 2001 and enacted in 2002 (NCLB, 2002). NCLB mandated the development and implementation of state standards and assessments with federal funding based upon state, district, and school performance on those assessments (Morris, 2009). Sections 1116 and 1118 of NCLB drew from research in the sociology of education (Morris, 2009) and specifically addressed the need for schools to include parents in reform efforts to enhance educational outcomes (Adams, 2009). Under NCLB, states, districts and Title I schools are required to develop and implement parent involvement

provisions, including shared responsibility for student success, in order to receive federal funding (NCLB, 2002). Under NCLB, local education agencies (LEAs) are required to develop written policies to engage parents, define barriers to parent involvement, and coordinate parent involvement in other programs such as Head Start and State-run preschool programs (Morris, 2009). Also under NCLB, a school's student achievement results must be made readily available to parents, teachers, and the community (NCLB, Title I, Part A, Sections 1111 and 1118).

With the increase of legislation and federally mandated initiatives to include parents in their children's education, educators and policy makers have made serious attempts to integrate parent involvement into comprehensive school reform initiatives. Parental support has been an important component of efforts concerning closing the achievement gap between disadvantaged and middle class students (Epstein, 1996; Henderson & Berla, 1994; Hoover-Dempsey & Sandler, 1997). Additionally, almost all districts include parent involvement as a performance indicator and as a defining feature of school culture (Adams, 2009). Lareau (1989) suggests that parent involvement has become such a popular notion in the United States that "it has been referred to as an 'institutional standard'" (as cited in Sheldon, 2002, p. 301).

Comparison of Parent Involvement Models

During the time of legislative focus on parent involvement in the education of their children, research efforts to measure the effectiveness of parent involvement initiatives increased. In research, parent involvement became conceptualized in a variety of ways. Three popular parent involvement models that are recognized in the

literature are Barton, Drake, Perez, St. Louis, and George's (2004) Ecologies of Parental Engagement framework, Epstein's (1992, 1995, 2001) Parent-School Partnership model, and Hoover-Dempsey and Sandler's (1995, 1997) cognitive discernments of role construction, efficacy and perceptions of school outreach. Adams (2009) suggests that these models represent different conceptualizations of parent involvement as socially based, school based, and parent based.

Socially Based Models of Parent Involvement

In the late 1970s, Bronfenbrenner (1979) and Gordan (1979) developed two separate models of parent involvement that emphasized connections between individuals and their groups and organizations. They took into account the external influences that affect family ability to enhance learning (Bronfenbrenner, 1979, 1986; Comer & Haynes, 1991; Gordan, 1979). They recognized that components in the educational process do not operate in isolation and proposed that, when families and schools work together, educational goals can be reached more effectively (Morris, 2009). Bronfenbrenner (1979) and Gordan (1979) emphasized microsystems, such as the family, and macrosystems, such as the social, economic and political aspects of the larger society, which affect child development (Morris, 2009). Gordan (1979) added two additional systems that he called the mesosystem and exosystem. The mesosystem consisted of neighborhood institutions such as schools and recreation facilities that affect the family in indirect ways. The exosystem consisted of resources such as social services available to a family that influence quality of life (Gordan, 1979 as cited in Morris, 2009). In their models,

Gordan and Bronfenbrenner stressed the importance of shared responsibilities between families and schools (Morris, 2009).

Barton et al. (2004) built on Gordan's and Bronfenbrenner's ecological models and developed a model of parent involvement called the Ecologies of Parental Engagement (EPE) framework. Barton et al. (2004) examined parent social context as a predictor of parent involvement. They believe that formal and informal social structures embedded within different spaces or boundaries control parent-school interactions (Barton et al., 2004). They suggest that parent involvement should be thought of as "mediation between space and capital" (Barton, et al., 2004, p. 3). Their framework situates parental-school engagement as a relational phenomenon that relies on activity networks as a means for involvement. Barton et al. (2004) emphasize the social context that motivates parent involvement by stating that "engagement is a social practice, sustained through active participation and dialogue in a social world" (p. 6). Similar to Gordan (1979) and Bronfenbrenner (1979), Barton et al. (2004) view parent involvement as a socially based construct that is both situational and dynamic (Adams, 2009).

The strength of these socially based, ecological models is that they emphasize the shared responsibilities of families and schools (Morris, 2009). Socially based frameworks view parent involvement as a multidimensional phenomenon that accounts for myriad behaviors and interactions between parents and schools (Morris, 2009). Morris (2009) suggests that the weakness of these models lies in the lack of autonomy between schools and families. She suggests that these models failed to distinguish between home, school and community roles and

values, and they failed to recognize the need for autonomy required by teaching professionals and families of students (Morris, 2009). Roles of families and schools in these models are also not clearly delineated.

Epstein's School Based Model

Another approach to parent involvement research is a social-organizational approach (Morris, 2009) based on school activities and structures. Epstein (1992) uses the word "partnership" to represent the school/home relationship and emphasizes shared responsibilities between the home and the school. Epstein's (1987, 1992, 1995, 2001) partnership model suggests that school/home partnerships are intertwined in overlapping spheres that affect educational development and it is incumbent on schools to provide opportunities for partnerships (Epstein, 1987, 1992; Morris, 2009). Her model is based on six levels of involvement: parenting, communicating, volunteering, learning at home, decision making and collaborating in the community. Epstein sees her model as extending 1) Bronfenbrenner's (1979) ecological model, 2) Leichter's (1974) educational insights of families as educators model, 3) Litwak and Meyer's (1974 as cited in Epstein, 1992) sociological perspectives on connections of professional and nonprofessional institutions and individuals, and 4) Seeley's (1981) emphasis on shared responsibility (Epstein, 1992, p. 3). Epstein suggests that "each type of involvement may be operationalized by hundreds of practices that schools may choose to develop their programs" (Epstein, 2001, p. 527).

To Epstein, the benefits of partnership include the ideas that both parents and schools work collaboratively to create better programs and opportunities for

students, and the result is that they establish a base of respect and trust on which to build (Epstein, 1992). Epstein recognizes the importance of environmental factors by suggesting that partnerships must be "responsible to the common and different needs of families" (p. 3). Epstein (1992) proposes that her six types of parent involvement will "help families and schools fulfill their shared responsibilities for children's learning and development" (p.iii). Epstein's perception of parent involvement is clearly a school-based model because parent involvement outcomes are measured by parent behavior related to school planned and school controlled activities such as attendance at parent-teacher meetings and volunteering at school (Adams, 2009).

In developing her model, Epstein considered weaknesses of ecological models and worked to strengthen them (Epstein, 1992; Morris, 2009). Her terminology stresses the formation of partnerships between the home and school taking into account the need for autonomy from each entity (Morris, 2009). Weaknesses of the model include the fact that measures of parent involvement are determined by school-based incentives. The measurement of parent involvement is limited to goals defined by schools reflecting school values and priorities without consideration of parent goals, values, and priorities (Adams, 2009; Jordan, Orozco, & Averett, 2001). Additionally, Epstein's model has been criticized because of its limited recognition of challenges that some families face in meeting expectations that schools consider as "basic" (Minke & Anderson, 2005).

Hoover-Dempsey and Sandler's Parent Based Model

Hoover-Dempsey and Sandler (1995, 1997) base their parent involvement model on the psychosocial capacities of parents. Their goal is an effort to "understand *why* parents become involved in their children's education and *how* their involvement influences student outcomes" (p. 1). They initially based their model on three major constructs that they believed to be central to parents' involvement decisions. The constructs included role construction, parent efficacy, and perception of school outreach. They concluded that "even well-designed school programs inviting involvement will meet with only limited success if they do not address issues of parent role construction and parent sense of efficacy for helping children succeed in school" (p. 3). Hoover-Dempsey and Sandler (1995, 1997) pay specific attention to the behavioral outcomes that are influenced by a parent's construction of his or her role in the child's life, the parent's sense of efficacy for helping the child succeed in school, and parent's perceptions of invitation for involvement from the child and the school.

Hoover-Dempsey and Sandler recently refined their model to include contextual variables that influence parent involvement (Green, Walker, Hoover-Dempsey, & Sandler, 2007). They define the three major sources of motivation for involvement as parent's motivational beliefs relevant to involvement including role construction and efficacy, parent perceptions of invitations to involvement, and personal life context variables that influence parent involvement (Green et al., 2007). In contrast with earlier conceptualizations, their perception of parent

involvement is clearly parent based because it focuses on the internal control of parents as the motivation for involvement decisions (Adams, 2009).

Strengths of the Hoover-Dempsey and Sandler (1995, 1997) model include consideration of parent-based factors such as role construction and parent efficacy thereby emphasizing the motivational aspects of parent involvement. Additionally, the refined model (Green et al., 2007) emphasizes contextual factors that influence parent involvement. However, as with Epstein, their parent involvement framework is largely based on observable behaviors and participation in school related activities considered as indicative of parent involvement. Therefore, parent involvement is determined by school-based activities that may or may not reflect parent needs and values.

Findings and Limitations of Parent Involvement Research

While efforts to enhance parent involvement have been extensive, outcomes of parent involvement have not been as clear. A number of educational researchers have linked parent involvement with a variety of positive student outcomes (Eccles & Harold, 1993; Epstein, 1982, 1991; Feuerstein, 2000; Griffith, 1998; Lareau, 1987) across a wide range of grade levels and populations (Epstein, 1983; Fehrmann, Keith, & Reimer, 1987; Grolnich, Benjet, Kurowski and Apostoleris, 1997; Reynolds, 1989; Stevenson & Baker, 1987). Parent involvement has been positively linked to indicators of student achievement such as teacher ratings of student competence, student grades, and achievement test scores (Becher, 1986; Eccles & Harold, 1996; Epstein, 1986; Hoover-Dempsey, Bassler & Burow, 1995; Hobbs et al., 1984; Peterson, 1989; Simich-Dudgeon, 1986). Parent involvement has

also been linked to lower rates of grade retention, lower drop out rates, higher on-time graduation rates, and higher participation in advanced courses (Barnard, 2004; Ma, 1999; Marcon, 1999; Miedel & Reynolds, 1999; Trusty, 1999 as cited in Hoover-Dempsey et al., 2005). Additional benefits of parent involvement supported by research are a positive link to student efficacy for learning, self-regulatory skills, engagement in schoolwork, and enhancement of attitudes and beliefs concerning the value of education (Hoover-Dempsey & Sandler, 1995, 1997).

While there is a significant body of evidence supporting positive effects of parent involvement (Fehrmann, Keith, & Reimers, 1987; Epstein, 2001; Useem, 1992), there is also a body of literature suggesting limited predictive power on achievement (Domina, 2005; Fan & Chen, 2002; Mattingly et al., 2002; McNeal, 1999 as cited in Adams, 2009). Horn and West (1992) and Milne, Myers, Rosenthan, and Ginsburg (1986) actually found that parent involvement was associated with lower levels of achievement rather than higher levels. Epstein (1991), Keith (1991) and Domina (2005) suggest that parent involvement may only affect student achievement indirectly, rather than directly, by affecting behavioral outcomes instead of directly affecting student achievement. Lareau (1989) and Madigan (1994) found that parent involvement on student achievement varies with the minority or social status of the student. With mixed evidence on the effects of parent involvement, it is important to explore causes of inconsistent findings.

Causes of Inconsistent Findings

Inconsistent findings in the literature are potentially related to a variety of causes. These causes include a need to further clarify the concept (Jordan, Orozco,

& Averett, 2001), a failure to fully conceptualize parent involvement according to its constituent parts (McNeal, 1999), inconsistent measurements of parent involvement (Fan & Chen, 2001; Jordan et al., 2001), not fully assessing the effect of race and socioeconomic status on parent involvement (McNeal, 1999), and the possibility that parent involvement predominately affects student behavioral outcomes rather than cognitive outcomes (Domina, 2005; Keith, 1991; Epstein & Sanders, 2002). Additionally, much of the research on parent involvement has relied on correlational and nonexperimental methods (Baker & Soden, 1998; Fan & Chen, 2001; Mattingly, Prislin, McKenzie, Rodriguez, & Kayzar, 2002) rather than rigorous evaluations of parent involvement effects on student learning (Mattingly et al., 2002). Researchers have criticized studies of parent involvement for using narrow, uni-dimensional measures of parent involvement (Grolnick, Benjet, Kurowski, & Apostoleris, 1997) and for evaluation designs and data collection techniques that lack rigor needed to establish evidence of program effectiveness (Mattingly et al., 2002). Researchers emphasize that uni-dimensional measures do not work because parents are involved in a wide variety of activities that affect education of their children that cross school boundaries (Fan & Chen, 2001; Jordan et al., 2001). Methodological limitations in existing research include the use of non-experimental designs, lack of isolation of parent involvement effects, inconsistent definitions of parent involvement, and non-objective measures (Baker & Soden, 1998). Baker and Soden (1998) suggest that "even though many studies have measured the construct of parent involvement, few have operationalized it the same way" (p. 4).

Definitions of Parent Involvement

A variety of definitions of parent involvement in the literature makes it difficult for researchers to compare findings (Fan & Chen, 2001). For example, Grolnick et al. (1997) defined parent involvement as parent investment of resources in their children. They suggest that resources include time, attention, help with homework, and use of parent's skills and abilities to encourage academic success. Maccoby and Martin (1983) define parent involvement as the degree to which a parent is "committed to his or her role as a parent and to the fostering of optimal child development" (p. 48). Bloom (1980, as cited in Fan & Chen, 2001) emphasizes parental aspirations for their children's academic achievement and their ability to convey such aspirations to their children. Pulkkinen (1982) refers to the amount of effort put into child-oriented activities versus other activities. Grolnick and Slowiaczek define parent involvement as "the dedication of resources by the parent to the child within a given domain" (p. 238). These definitions differ to the extent that operationalizations needed to measure each construct would be done in different ways. Fan and Chen (2001) refer to differences in definitions of parental involvement as a "chaotic state that makes it difficult to draw any general conclusions across studies" (p. 3).

Not only do definitions differ, but differing terminology is used in the literature. Epstein (1992) uses the term "partnerships" instead of involvement. Barton et al. (2004) uses the term "engagement" while others use terms such as "connections" or "involvement" with no consistent agreement about what is meant by the terms (Jordan, Orozco, & Averett, 2001). The varying definitions make it

difficult for researchers to compare findings and models of parent involvement to one another (Jordan et al., 2001). Differing definitions make it difficult to know what kinds of activities are beneficial and under what circumstances. Even when consistent terms are used, Jordan et al., (2001) suggests that differences in the perceptions of the roles of family and community members in connection with schools and the emphasis on school-centered measures have complicated the problem even further.

Little Evidence of Change in Practice

Despite efforts of policy makers to increase parent involvement through school reform initiatives and the expenditure of tremendous amounts of money to promote parent involvement, substantial change in parent and school behavior patterns have not resulted (Eccles & Harold, 1993). Kessler-Sklar and Baker (2000) found that even when parent involvement programs were implemented, these programs were not effective in meeting or addressing policy goals. Sheldon (2002) suggests that perhaps the reason that parent involvement initiatives have not produced significant change is that the type of involvement that actually enhances school culture and motivates student achievement is relatively rare. Educators continue to be dissatisfied with participation and involvement of parents in their schools (Carnegie-Mellon Foundation, 1988 as cited in Griffith, 1998; Eccles & Harold, 1993). Muller and Kerbow (1993, as cited in Sheldon, 2002) found that only 15% to 26% of mothers volunteer at their children's schools indicating that, despite attempts to increase parent involvement, the vast majority of parents do not practice regular involvement activities.

Another potential limitation of parent involvement efforts is that involvement models may be limited in their usefulness because of family social contexts across school populations especially those that serve high poverty communities. Green, Walker, Hoover-Dempsey and Sandler's (2007) recent work to reconceptualize the Hoover-Dempsey and Sandler (1995, 1997) model to include life context variables indicates that researchers are aware of this limitation of established models. Despite efforts to correct the problem, the interaction of societal and contextual factors makes a common model of parent involvement problematic (Adams, 2009), especially when parent involvement is measured by behavioral outcomes that are often established by the school.

Parent roles differ both within and between schools based on parent needs, strengths, and a variety of other factors (Adams, 2009). Models must take into account the fact that the needs of students and parents in low SES communities may differ significantly from the needs of students and parents in middle income suburban communities (Lareau, 1987). For example, parents in low SES communities may be primarily concerned with supplying basic needs for their children such as clothing, food, and transportation and may have to work extended hours to provide those necessities. In contrast, parents in middle income suburban communities may have those needs already met. If so, they can focus on other needs such as choices in scheduling, teacher requests, or involving their child in extra curricular activities. Additionally, the needs of single parents differ significantly from the needs of two parent families. Changing social factors in the United States, including single parent families representing an increasing proportion of the

population (Grolnich & Ryan, 1989), make a common definition and model of parent involvement based upon school-defined behaviors impractical (Adams, 2009). Failure to address these limitations as well as failure to recognize the multilevel conditions that influence parent involvement will mean that behavioral changes in parents or schools as a result of existing models are unlikely (Adams, 2009).

Parent Responsibility as an Alternative to Parent Involvement

Adams (2009) recognized the need to broaden the concept of parent involvement to capture habits of parenting that are socially constructed and that reflect the multidimensionality of parenting. Adams' argument moves the discourse from "searching for the holy grail of parent involvement models" (p. 6) to looking into the "social and affective fabric of school cultures that evoke parent willingness to support student learning and school performance" (p.6). To provide a more comprehensive view of parent-school relationships, Adams (2009) suggested the term "parent responsibility" as an appropriate lens.

Looking through a new "lens" is a necessary step in gaining an understanding about what motivates parents to act in supportive ways and about how parents construct their roles concerning the education of their children. Research suggests that across income levels, parents place tremendous importance and value on education for their children (Delgado-Gaitan, 1992; Goldenberg & Galimore, 1995; Johnson, 1997. Additionally, parents of all income levels (Drummond & Stipek, 2004) and ethnicity (Wong, 2006) rate involvement in their children's education as very important. A new way to think about parent

involvement is necessary to find out why, despite parent's value of education and desire to help their children succeed, efforts to enhance parent-school partnerships have been met with limited success.

Parent responsibility is a term that has been used extensively throughout educational circles and school reform discussions to refer to a variety of parent obligations or expectations. Despite the popular use of the term it has not been defined in the literature. To develop the concept, Adams (2009) explored how social philosophers and educational scholars specified responsibility. What follows is a discussion of responsibility as reflected in the philosophical and educational literature.

Philosophical Foundations of Responsibility

The concept of "responsibility" has been studied in a variety of disciplines. As one would expect, responsibility from a legal or ethical perspective focuses on liability for actions. Its definition reflects an extension of causality that is based on counterfactual dependence (Chockler & Halpern, 2004). Action is important in legal theory in that an emphasis is on the *degree* of responsibility for an outcome or an action. The term "blame" is often used in these contexts taking into account the epistemic state of an agent (Chockler & Halpern, 2004). There are several elements of epistemic state that are taken into consideration. Consideration of the (a) *actual* epistemic state of an agent before performing an action, (b) the epistemic state that an agent *should have had* before performing an action, and the (c) epistemic state *after* performing an action are relevant in determining responsibility according to legal theory (Chockler & Halpern, 2004) (emphasis mine). Additionally, in legal

theory, consideration of the actual epistemic state before an action is performed is relevant when considering intent (Chockler & Halpern, 2004).

Action or causes of outcomes are also important components of responsibility from a philosophical standpoint (Adams, 2009). The idea of moral responsibility is a common topic among philosophers (Chockler & Halpern, 2004). Moral responsibility refers to liability that can be assigned to agents for their actions or inactions in a given situation (Corlett, 2001). A common understanding concerning moral responsibility is that, for an agent to be held morally liable, there must be some evidence that the actor had some control over the action. In other words, to be considered morally liable, the action or inaction must have been intentional, voluntary, and the actor must have had some knowledge about the moral implications of the action (Corlett, 2001). Moral responsibility takes into account not only an actor's intentions but also possible alternative actions before assigning blame (Chockler & Halpern, 2004). Bernstein (1995), in summarizing ethical, or moral, responsibility as conceptualized by Hans Jonas (1974 as cited in Bernstein, 1995), suggests that necessary conditions for ethical or moral responsibility are causal power, control and ability to foresee consequences.

Common debates concerning moral responsibility include whether or not groups of people, or collectives, may be held morally liable for actions or inactions and whether or not individuals acting within a collective can be held morally liable (Corlett, 2001; Narveson, 2002; Thompson 1986). For example, Held (1986 as cited in Corlett, 2001) suggests that in order to form judgments about collective entities and the individuals within them, "we have to know about the internal structure of

the collectivity, and about the roles and activities of its individual members" (p. 574). In other words, one must consider how much control an individual had over a collective action or inaction in order to hold that person accountable for the action. Narveson (2002) suggests that the degree of voluntariness of membership in a group is an important consideration when determining group liability. Thompson (1986) argues that moral responsibility can be collective, individual or both (p. 154). He asserts, "finding individuals who share the blame with a collective does not dissolve or absolve the blame which goes to the collective itself" (p. 153). According to Adams (2009), no matter where blame is placed, "the one constant (inherent in all discussions of responsibility) is the action leading to the outcome" and control over factors that lead to the outcome (p.7).

Another philosophical use of the term "responsibility" is in economic theory (Fleurbaey, 1995). Concepts central to the idea of economic responsibility are control and delegation. A distinction is made in economic theory between responsibility over factors and responsibility over outcomes (Fleurbaey, 1995). Compensation and reward for actions are also important elements (Fleurbaey, 1995). Adams (2009) suggests that, according to Fleurbaey (1995), "control over factors affecting a variable of interest makes a person or group at least partly responsible for the outcome" (p. 7). Therefore, one of the key properties of responsibility is the notion of control.

Responsibility in Educational Literature

Educational scholars have typically explained responsibility within behavioral contexts (Diamond, Randolph, & Spillane, 2004; LoGerfo & Goddard,

2008; Lee & Smith, 1996, as cited in Adams, 2009). From this perspective, responsibility is a "willingness to act that is attributed to a cognitive recognition that one's actions are causes of certain outcomes" (LoGerfo & Goddard, 2008 as cited in Adams, 2009, p. 7). LoGerfo and Goddard (2008) define teacher responsibility as "a willingness of teachers to take action once the locus of control has been assigned to internal factors and efficacy beliefs formed" (p. 77). What educational literature adds to the discussion of responsibility is an emphasis on the concepts of locus of control and efficacy. Emphasizing locus of control, Lee and Smith (1996) define collective teacher responsibility as "teachers' internalizing responsibility for learning of their students, rather than attributing learning difficulties to weak students or deficient home lives" (p. 114, as cited in Adams, 2009, p. 10). Efficacy is the result of a teacher's belief that he/she can control factors that influence educational outcomes (Tschannen-Moran, Hoy, & Hoy, 1998). Again, common properties in responsibility are control and action. The ideas of locus of control and efficacy help to explain decisions for action or inaction.

Parent Responsibility Defined

Willingness and control are important factors in parent responsibility in that responsibility means recognizing impediments to children's success and acting in a proactive and decisive manner to enhance educational outcomes (Diamond et al., 2004). Based on this understanding, and relying on LoGerfo and Goddard's (2008) definition of teacher responsibility, parent responsibility is defined for this study as "a willingness of parents to take action once they have constructed their role in the educational process and their efficacy beliefs have been developed."

Adam's (2009) conceptualization of parent responsibility is based on the idea that parents share in the responsibility for student learning and school success (p.2). According to Adams, the concept of parent responsibility is broader than the concept of parent involvement in that parent participation in school activities is "only one element of a larger pattern of behaviors found in parents who possess a moral commitment to their child's learning and development" (p. 2). Adams refers to parent responsibility as a "moral commitment" that a parent has concerning the child's educational development. The concept of parent responsibility builds upon key aspects of parent involvement models and does not suggest doing away with parent involvement activities. Instead, Adams suggests that parent involvement activities can serve as structural mechanisms that actually promote shared responsibility for the success of students as long as alignment occurs between needs of the school community and parent orientations.

Based upon the three frameworks found in parent involvement literature, and primarily Epstein's typology, Adams identified domains of influence or control within homes, schools and the community in which parents share responsibility for student outcomes. These domains include promoting a healthy learning environment, setting high expectations and standards for learning, reinforcing positive behaviors and attitudes, maintaining frequent and open communication with the school, supporting the school environment and helping to strengthen the community in which schools reside (Adams, 2009). Similar to Epstein (1987), these domains represent social arenas in which parents possess elements of control;

however, Adams suggests that the actual degree of control will vary according to parent and school contextual factors.

Emphasizing control in parent responsibility addresses a common criticism of traditional models of parent involvement in that parent involvement models do not show evidence of lasting change in power structures or control between parents and schools (Adams, 2009). Inconsistent evidence of the effectiveness of parent involvement in research may be the result of the fact that parents are not empowered to do things that cause lasting change (Adams, 2009). Changes in control, or empowerment, are not easily achieved. Empowerment means the relinquishing of control by one entity and transference to another (Cochran & Dean, 1991).

Cochran and Dean (1991) suggest that empowerment is a process that takes place over time. The initial step in the empowerment process is a change in the perception of self (Cochran & Dean, 1991). This step then suggests a change in a person's role construction and a change in a person's perception of efficacy to reach delineated goals. Cochran and Dean (1991) indicate that aspects of empowerment include not only an individual's view of self but also the individual's relations with others. From this perspective, it seems clear that parent involvement activities that do not facilitate a sense of empowerment do not lead to lasting change (Lopez, Scribner, & Mahitivanichcha, 2001). Looking through the lens of parent responsibility may provide insight for changing power dynamics between the home and school that encourages lasting results (Adams, 2009). Given the importance of parent involvement in the education of their children, an emphasis on control to gain a better understanding of parent responsibility and the factors that influence a

parent's sense of responsibility are necessary to bring about lasting change that can influence educational outcomes.

Using the framework of socially-based, school-based, and parent-based parent involvement models, Adams delineated affective, cognitive, and behavioral conditions that contribute to the development of collective parent responsibility. These conditions, he argues, are parent orientation (role construction and parent efficacy), a culture of academic optimism, and structural mechanisms such as involvement activities. Adams' (2009) aim was to develop a concept of collective parent responsibility. He suggests that collective parent responsibility is socially constructed, and the ingredients of collective parent responsibility are a shared understanding of parental roles, high parent trust, and a supportive normative culture.

Although his major aim was to develop the concept of collective parent responsibility, Adams suggests that, at the individual level, involvement decisions are originated in parents' conceptions of their role in education and their agency to carry out this role. Role construction and efficacy underpin parent behaviors and involvement in the educational process (Hoover-Dempsey & Sandler, 1995, 1997) and form the properties of parent responsibility.

Elements of Parent Responsibility

Role construction. A parent's role construction refers to a parent's beliefs about the actions that he/she should take in relation to the child's education (Hoover-Dempsey & Sandler, 1997). Parents construct their roles based upon both internal and external factors that help to define the "basic range of activities that

parents construe as important, necessary and permissible for their own actions with and on behalf of their children (Hoover-Dempsey & Sandler, 1997, p. 9). Hoover-Dempsey and Sandler (1995, 1997) suggest that parental beliefs about child rearing, child development, and appropriate home support roles influence a parent's role construction (Green, Walker, Hoover-Dempsey & Sandler, 2007; Hoover-Dempsey & Sandler, 1995, 1997). They also suggest that role construction is, at least partially, socially constructed. Hoover-Dempsey and Sandler suggest that past experiences and social influences help to shape parental role construction (Green, Walker, Hoover-Dempsey & Sandler, 2007). Role construction includes "the expectations that parents and those in their significant groups hold for their behaviors in relation to their children's schooling" (Hoover-Dempsey & Sandler, 1997, p. 9). Hoover-Dempsey and Sandler (1997) also suggest that parent role construction is a result of "interactions between individuals and their groups over time" (p. 9). Therefore, role construction develops out of one's own personal experiences and the influence of others. Adams (2009) argues that consideration of role construction is important because, when left unaddressed, perceptions of parents' roles are often "biased by one's personal experiences as the primary source of expectations for appropriate parent behavior" (Adams, 2009, p. 4). Parent construction of role in a child's education is a necessary property of parent responsibility.

Parent self-efficacy. Bandura (1997) defines self-efficacy as "beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments" (p. 2). Self-efficacy reflects the extent to which a person believes that he or she has the capacity to affect a given outcome based upon personal skills

and knowledge. Parent self-efficacy refers to a parent's beliefs about his/her ability to affect outcomes for their children. Hoover-Dempsey and Sandler (1997) suggest that parents will make choices about their actions related to their child's education based upon outcomes that they perceive likely to occur (Hoover-Dempsey & Sandler, 1997). Research findings indicate that "parents are motivated to engage in involvement activities if they believe they have the skills and knowledge that will be helpful in specific domains of involvement activity" (Green et al., 2007, p. 534). Locus of control is important in determining self-efficacy (Rotter, 1966). In his study of teacher self-efficacy, Rotter found that teachers who believed that external factors (external locus of control) were more responsible for student outcomes than their own teaching efforts showed lower levels of efficacy than teachers who believed that reinforcement of teaching activities lies within their own control (internal locus of control). Therefore, parents who believe that they control factors that will enhance educational outcomes will more likely engage in behaviors that encourage educational success.

Summary

Adams (2009) suggests that a different lens to understand parents' role in the educational process is necessary because parent behavior is based on a physical, social, and emotional presence in the lives of children rather than on a set of measurable activities that are defined and dictated by the school. In existing models of parent involvement, promoting parent involvement behaviors has become the objective when the "real outcome should be fostering relationships between schools and parents so that responsibility for the success of students and schools is shared"

(Adams, 2009, p. 6). Adams (2009) further suggests that there is a need to "move the discourse beyond common school practices and into the social and affective fabric of school cultures that evoke parents' willingness to support student learning and school performance" (p. 6).

In reality, research and practice tend to reduce parent involvement to participation in the types of measurable activities that may have very little correlation with actual student and parent needs. Limiting the scope of acceptable practices of parent involvement makes the concept of parent involvement of little value without consideration of how the social context, parental beliefs, and parent skills affect parent behavior.

Lopez, Scribner, and Mahitivanichcha (2001) found that parents were motivated to become involved in their children's education not because schools subscribed to a particular definition of involvement, but, instead, when schools held themselves accountable to meet specific needs of parents and children. These findings suggest that, instead of acclimating to certain preconceived ideas of parent involvement, parents had favorable perceptions of schools that met family needs and recognized family values and concerns. While participation in school activities is necessary for school success (Adams, 2009), parent responsibility address the social and psychological determinants of supportive parent behavior.

CHAPTER THREE

CONCEPTUAL FRAMEWORK

Introduction

This chapter consists of four sections (a) the relationship between parent social network and parent responsibility, (b) an introduction to Social Cognitive Theory, (c) Social Cognitive Theory as a theoretical framework to explain the relationship between social network and parent responsibility, and (d) Rationale and Hypotheses.

The Relationship Between Social Network and Parent Responsibility

The concept of parent responsibility is based on the premise that effective parental practices are multidimensional and cross home, school, and community contexts. For example, parents monitor their child's behavior at home and within other social settings, such as extracurricular events. Effective parent behaviors and practices are not restricted to participation in school activities but rather encompass the overall development of children. With so little evidence on the formation of parent responsibility, it is important to explore how the social environment, if at all, shapes parents attitudes and beliefs about parents' role in the educational process.

Adams (2009) suggests that social and affective characteristics of school cultures can evoke parents' willingness to support student learning and school performance. Social influences contribute to parent perceptions of their role in the educational process and the development of parent efficacy to control factors that affect the learning and development of their children (Hoover-Dempsey & Sandler, 1995, 1997). It is likely that the capacity of the social environment to shape parent

responsibility is limited by the strength of the parent social network. Positive norms and information transfer are tenuous without supportive relationships with other parents and adults. This perspective, as well as existing parent involvement literature, supports the inclusion of social networks as a contributing factor in the development of parent responsibility.

Bronfenbrenner (1979) argued that societal forces contribute to parent involvement in education. He suggested that the mesosystem, "a set of interrelations between two or more settings in which the developing person becomes an active participant" connects the individual with communities and society (Bronfenbrenner, 1979, p. 209). The mesosystem is different than a macro or micro system; it is an intermediate social system that includes social networks of parents. Bronfenbrenner (1979) suggested that social networks function as channels of communication by which information and social resources can flow to parents, thus affecting their beliefs, values, and behaviors. Evidence in the parent involvement literature suggests that social networks serve as a contributing factor in parents' behavior; close relationships can provide parents with access to information about effective parenting practices.

Barton et al., (2004), Hoover-Dempsey and Sandler (1995, 1997), and Epstein (1992, 1995, 2001) each recognized the importance of social influences on parent involvement. Barton et al. (2004) found that parents' social context was a predictor of parent involvement in the educational process. Their findings suggest that formal and informal social structures embedded within different spaces or boundaries control parent-school interactions (Barton et al., 2004). They argue,

"parent engagement is a social practice, sustained through active participation and dialogue in a social world" (p.6). Green, Walker, Hoover-Dempsey, and Sandler, (2007) also recognize the importance of parents' social interactions for parent involvement. They expanded the Hoover-Dempsey and Sandler model (1995, 1997) to account for contextual and social factors that influence parent behavior.

It is well accepted that social factors shape orientations and behaviors, but little attention has been given to the relationship between parents' social networks and their beliefs and behavior. The one known study on this relationship was conducted by Sheldon (2002). He focused on the influence of parent social networks on parents' choices to become involved in their child's education both at home and at school. His findings indicated that the size of parents' social networks predicted parent involvement in his sample of 195 parents from two suburban elementary schools.

Sheldon concluded from his study that resources embedded in social networks are significant contributors to parent involvement. Cochran and Dean (1991) reached a similar conclusion about the relationship between social connections, parent involvement, and empowerment processes. Specifically, they argue that group activities provide a context for critical reflection so that less advantaged parents gain additional resources such as time, information, and skills to build more effective partnerships with the school (Cochran & Dean, 1991). The above evidence supports Bourdieu's (1986) finding that network size can be taken as a measure of both the amount and variety of capital to which an individual has access (as cited in Sheldon, 2002).

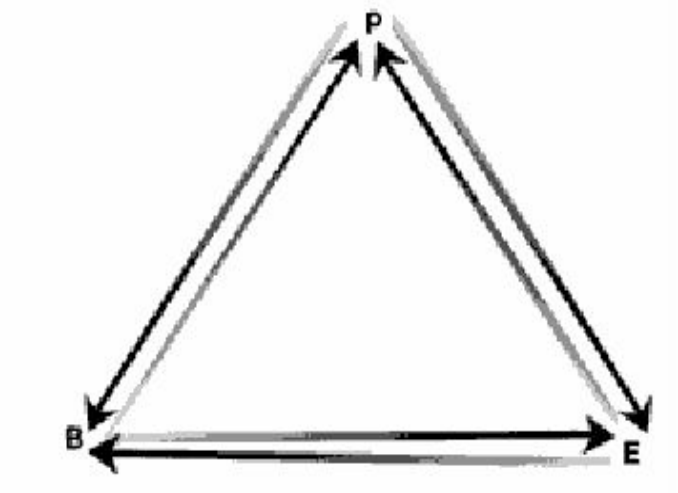
A common understanding among social network analysts is that norm formation and information transfer are enhanced through relational ties. Looking at the relationship between parent social networks and parent responsibility is an important step in determining the influence that social networks have on parent responsibility. Parent networks are elements of the informal, normative environment of schools. Adams (2009) claims that informal controls, such as close relationships, are needed to empower parents to embrace responsibility. These, he argues, can enhance a sense of efficacy. Shared expectations, values, and assumptions at the individual level can lead to more consistent patterns of behavior at the collective network level. Social pressure within networks can serve as normalizing influences on parent behavior due to the tendency for breeches of expectations to be informally sanctioned by other parents (Adams, 2009). Social networks are perceived as vehicles through which parent efficacy and role construction can be generated and enhanced. Social Cognitive Theory is used as a lens to explain why a relationship between social networks and parent responsibility is plausible.

Social Cognitive Theory

Social Cognitive Theory (SCT), introduced in the field of education in 1986 by Albert Bandura, explains human development and the basic causes and mechanisms of human motivation for behavior. Social Cognitive Theory (SCT) is based on a model of triadic reciprocal causation for human behavior. SCT suggests that human behavior is shaped by the interaction of factors including self-regulatory behavior (behavior), cognition (personal factors) and environmental influences (Bandura, 1989, 1999) (see figure 1). These factors interact to influence how people

behave, what they believe, what they experience, and the actions they choose to take (Bandura, 1989).

Figure 1.1



B represents behavior, P represents personal factors in the form of cognitive, affective, and biological events, and E represents the external environment (Bandura, 1986)

Personal factors include human expectations, beliefs, emotional bents and cognitive competencies (Bandura, 1989). Cognitive constructs include self-efficacy, attitude, outcome expectancy and perceived social norms (Sorensen et al. 2007). Of these, Bandura (1989) considers self-efficacy to be the most salient personal factor in determining behavior. Personal factors can be influenced by the two other elements of the triad: human behavior and environmental influences.

Environmental influences consist of social influences that convey information and "activate emotional reactions through modeling, instruction, and social persuasion" (Bandura, 1986, as cited in Bandura, 1989, p. 3). Environmental influences include social contexts for human development. Among these social

contexts are vicarious learning (Sorensen, Anderson, Speaker, & Vilches, 2007) and support from others in the form of encouragement and social resources (Dilorio, McCarty, & Denzmore, 2006). Mastery experiences are important in Social Cognitive Theory, for they enhance efficacy and build a sense of resiliency in the face of challenges and difficulties (Bandura, 1989).

Behavior includes the development of human competencies (described below) that influence motivation and action (Bandura, 1989). In other words, competencies enhance self-regulated action (Bandura, 1989, p. 8). Exercising self-regulated control over one's developmental life-course requires both effective tools of personal agency and social support (Bandura, 1989). Social supports enhance a sense of resiliency and give incentive, meaning, and worth to actions that people take (Bandura, 1989). In this way, social supports increase an individual's ability to control factors through self-regulated behavior that influence his/her own life course (Bandura, 1989). Self-determined behavior also influences cognitive constructs such as self-beliefs of efficacy to exercise control through self-regulatory capabilities.

Behavior and environment have a reciprocal relationship: behavior alters environmental conditions, and environmental conditions in turn, alter behavior (Bandura, 1989). Examples of this reciprocal relationship given by Bandura (1989) include situations such as lecturers in classrooms influencing their students who attend class and parents praising children when they do something worthy of praise. In these examples, the social environment is dependent upon how students in the class behave and how children react to parental praise. In effect, people are both products and producers of their environments (Bandura, 1989). Each of the factors

of Social Cognitive Theory is described in more detail to gain a better understanding of how they interact to inform behavior.

Behavioral Factors

Referring to the behavioral element of the triad, Bandura (1989) emphasized the fact that humans possess basic behavioral capabilities that influence their own life courses. These distinctly human characteristics include symbolizing, forethought, self-regulation, and self-reflection (Bandura, 1989). Symbolizing capabilities include abstract reasoning and language development. Symbolizing capabilities are developmental in that individuals move from concrete thinking to abstract thinking in the process of language development (Bandura, 1989). The ability that humans possess to think symbolically enhances the capacity for communication and shared understanding.

A second human behavioral characteristic recognized by Bandura is the capability of forethought to guide behavior (Bandura, 1989). Forethought allows an individual to guide his/her actions anticipatorily by predicting likely consequences of behavior (Bandura, 1989). Forethought can be used for setting personal goals and planning courses of action to produce desired outcomes (Bandura, 1989). Forethought is subject to developmental changes throughout the life process. It is important to note, also, that social and technical changes influence forethought processes in that actions are often considered according to societal norms, and technical changes can contribute to efficiency in completing a given task (Bandura, 1989). Forethought has likely consequences for how parents construct their role in

the educational process as well as the action they take to control social elements that influence the learning and development of their child.

Another behavioral capability is the ability to practice self-regulation. Self-regulatory behavior refers to reflective actions under which "the self evaluates itself" (Sorensen et al., 2007, p. 38). The capacity for self-regulation increases throughout one's lifetime as external sanctions and mandates give way to internal controls for direction (Bandura, 1989). Bandura suggests that this capacity to exercise self-influence by personal challenge and evaluative reaction to one's own attainments provides a "major cognitive mechanism of motivation and self-directedness" (Bandura, 1989, p. 47).

Environmental Factors

Environmental factors include vicarious learning, modeling, encouragement from others, and mastery experiences. Environmental influences are social influences that convey information and "activate emotional reactions through modeling, instruction, and social persuasion" (Bandura, 1986, as cited in Bandura, 1989, p. 3). Vicarious learning capabilities include the acquisition of knowledge through others and the ability to operate on that knowledge. Vicarious learning serves to abbreviate the total knowledge acquisition process because the acquisition of new knowledge can be severely limited by constraints on time, resources, and mobility (Bandura, 1989).

Bandura (1989) suggests that "virtually all learning phenomena resulting from direct experience can occur vicariously by observing people's behavior and its consequences for those behaviors" (Bandura, 1986; Rosenthal & Zimmerman, 1978,

as cited in Bandura, 1989, p. 21). In this regard, learning is socially acquired as individuals transcend the limitations of their environments (Bandura, 1989). Individuals learn from the successes and mistakes of others as they consider their own similarity to those undergoing similar situations. Vicarious circumstances provide an opportunity to examine one's own capacity to experience similar levels of performance in a given situation.

The concept of modeling is important in Social Cognitive Theory because it suggests that highly knowledgeable and skilled individuals can serve as resources for cognitive development (Bandura, 1989). As individuals grow in cognitive competencies, previous experiences of others serve as resources for cognitive and behavioral development (Bandura, 1989). Feldman (1980, as cited in Bandura, 1989) emphasized the aspect of domain-relevance in acquired knowledge. Domain-relevance indicates that knowledge is accompanied by judgmental rules that apply to activities associated with a particular domain. These rules are socially constructed and are learned through contact with others. Bandura suggests that social factors play a significant role in cognitive development and that "most valuable knowledge is imparted socially" (Bandura, 1989, p. 12).

Personal Factors

Bandura suggests that personal factors are important in the exercise of behavior. In order to control behavior, one must adhere to a set of aspirational standards for behavior and action. Standards serve as a source of motivation by encouraging goal-setting and self-evaluative involvement in a given activity (Bandura, 1989). Bandura suggests that an emphasis on aspirational standards as a

source of motivation is an important aspect of Social Cognitive Theory in that "without standards against which to measure their performances, people have little basis for gauging their capabilities" (Bandura, 1989, p. 48). Resiliency and determination to reach standards are exhibited in activities in which people feel self-efficacious and from which they derive self-satisfaction (Bandura, 1989). In addition, people often set higher standards for themselves once they attain a standard they have been pursuing (Bandura, 1989). These mastery experiences enhance efficacy and serve as sources of motivation for behavior.

Reflective self-consciousness is a personal factor that enables people to analyze their own experiences and thought processes (Bandura, 1989). Through self-reflection, individuals learn from their own behavior (Bandura, 1989). Monitoring and readjusting action occurs as a result of self-reflective behavior. Of the thought processes that regulate action, Bandura emphasizes self-efficacy as the most salient. Bandura (1997) defines self-efficacy as "beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments" (p. 2). He suggests that self-efficacy plays a "central role in human agency" (Bandura, 1982, 1986, as cited in Bandura, 1989). Bandura (1989, 1999) suggested that confidence in oneself to reach desired goals, or self-efficacy, influences behavior through four processes: cognitive processes (including goal setting), motivational processes (including attributions for success or failure), affective processes (control of negative feelings), and selection processes (Bandura, 1993, as cited in Ross, Hogaboam-Gray, & Gray, 2003).

Bandura (1989) suggests that self-efficacy is a key determinant of behavior, thought processes, and emotional reactions. Self-efficacy has functional value in that, as people act on misjudgments of personal efficacy, they appraise their capabilities and change behavior accordingly (Bandura, 1989). Self-efficacy is a key determinant of how much effort a person invests in a given activity and how long that person perseveres in the face of obstacles (Bandura, 1989). Personal beliefs about the ability to attain goals a person sets for himself plays a significant role in motivation, choices for action, and the ability to overcome obstacles to reach personal goals (Bandura, 1989). Self-influence, then, acts in the ongoing regulation of motivation as individuals readjust personal standards in light of personal attainments.

Bandura recognizes four principal sources of information that guide an individual's perception of self-efficacy. These sources include performance mastery experiences, vicarious learning experiences for judging performance relative to the performance of others, verbal persuasion and other social influences, and physiological states (Bandura, 1989, p. 60). These sources of information combine to influence the confidence individuals have in their ability to effectively perform a given task. For parent responsibility, these sources of information shape parental beliefs about their ability to control factors affecting their child's learning and development.

According to Social Cognitive Theory, values and behavior patterns are influenced through a social construction process where standards for behavior are "elaborated and modified, and new ones are adapted" (Bandura, 1989, p. 72).

Bandura (1992) suggested that knowledge alone is an insufficient factor to cause change of behavior. Instead, people need "opportunities, resources, and guidance from others within one's social network" for behavioral practices to become established (Bandura, 1992, as cited in Dilorio, McCarty, & Denzmore, 2006, p. 918). In short, personal factors, self-regulatory behavior, and the environment, interact to influence human behavior.

Rationale and Hypotheses

Social Cognitive Theory has utility for explaining the theoretical relationship between parent social networks and parent responsibility because it provides a framework to understand how parent belief systems are influenced by social, personal, and behavioral factors. Social Cognitive Theory (SCT) attributes choices for human behavior to a model of emergent interactive agency as choices for action are made primarily through vicarious, self-reflective and self-regulatory processes (Bandura, 1989). According to SCT, people have personal control over their own thoughts and actions, and people also have the ability to analyze their experiences and alter their behavior accordingly (Thorsett, 2009). SCT also suggests that people can learn by observing others and that individuals are motivated to model behavior of others with whom they identify (Thorsett, 2009). Thus, social connections with other individuals can inform parents' role construction and efficacy by providing positive examples of responsible parent behavior.

Social Cognitive Theory emphasizes self-regulatory and cognitive constructs as determinants of behavior. Among these self-regulatory processes and cognitive constructs are elements that are also found within the conceptualization of parent

responsibility. These elements are role construction and self-efficacy, critical components of parent belief systems. Bandura (1989) suggests that belief systems serve as significant motivators for human behavior. Parents make decisions for action based on their perceptions of what parents *should do* in given situations [emphasis mine]. The second element, parent self-efficacy, refers to the perception of parents concerning their ability to help children succeed in school. Theoretical and empirical evidence suggests that beliefs and actions of parents are influenced by their social networks, specifically the size of networks and the frequency of interactions (Bronfenbrenner, 1979; Sheldon, 2002).

Network size. Parent involvement literature supports the idea that the size of parent social network is an important factor influencing parent behavior. Bronfenbrenner (1979) argued that societal forces contribute to parent involvement in education. Additionally, Barton et al. (2004) emphasize that social context motivates parent involvement by stating that "engagement is a social practice, sustained through active participation and dialogue in a social world" (p. 6). Therefore, parental-school engagement is a relational phenomenon that relies on social networks as a means to determine behavior (Barton et al., 2004). Similar to Gordan (1979) and Bronfenbrenner (1979), Barton et al. (2004) view parent involvement as a socially-based construct that is both situational and dynamic (Adams, 2009). Their findings suggest that formal and informal social structures embedded within different spaces or boundaries control parent-school interactions (Barton et al., 2004). Therefore, larger networks provide greater opportunity to influence parent interaction with the school.

Green, Walker, Hoover-Dempsey, & Sandler, (2007) also recognize the importance of parents' social interactions for parent involvement. They suggest that past experiences and social influences, such as social networks, help to shape parental role construction (Green, Walker, Hoover-Dempsey & Sandler, 2007). They explain that social pressure within networks of the organization can serve as normalizing influences due to the tendency for breeches of expectation to be informally sanctioned (Green, Walker, Hoover-Dempsey & Sandler, 2007; Hoover-Dempsey & Sandler, 1995, 1997). They suggest that role construction is influenced by social interactions within one's social network.. One could conclude from the research mentioned above that larger social networks provide greater opportunity for influencing parent behavior than smaller social networks because of potential information exchange, norm formation, and influence on role construction and parent self-efficacy. Social Cognitive Theory suggests that contacts with others in a social network influence choices for behavior and attributes choices for behavior to vicarious, self-reflective and self-regulatory processes (Bandura, 1989). More contacts and interactions increase exposure to sources of information that have the potential to shape parent responsibility.

Contacts within a social network provide opportunity for social persuasion as parents learn vicariously from other parents and other adults. Belief systems are formed within a social network as norms for behavior become established through interaction with others (Bandura, 1989). Social networks that encourage parent responsibility can influence parent role construction and their self-efficacy to carry out their role. For instance, vicarious experiences are powerful motives for

responsible parent behavior. As parents see other parents model responsible behavior, they are more likely to internalize these same actions and persevere through obstacles and difficulties. Tenuous or limited social connections would limit opportunities for parents to learn vicariously from others.

Self-reflective processes help guide a parent's behavior as the parent compares his or her actions with the actions of others in a social network. As parents watch other parents and other adults model responsible behavior in the educational process, they will be encouraged to assume responsibility themselves. Self-efficacy may be enhanced as parents learn vicariously from others who are practicing responsible parent behavior as well as when they are encouraged to act in a responsible manner through social persuasion and positive affirmation. Larger social networks provide greater opportunity for vicarious learning that can enhance role construction and self-efficacy. The only empirical evidence to justify this claim comes from Sheldon (2002). He found a positive relationship between the size of parents' social networks and parent involvement. It is likely that social networks have this same effect on parent responsibility.

Frequency of contact with others. Bandura (1999) suggests that human agency operates within a broad network of socio-structural influences. According to Social Cognitive Theory, interaction patterns within a social network, including frequency of interaction, are determinants of human behavior. Bandura (1989) explained that "human expectations, beliefs, emotional bents, and cognitive competencies are developed and modified by social influences that convey information and activate emotional reactions through modeling, instruction and

social persuasion" (p. 3). Frequent parent interaction within a social network may serve as a means for the distribution of knowledge, skills, and practices that lead to parent responsibility because social networks serve as conduits of information and sources of encouragement. Parents with limited social networks, or in social networks with limited or infrequent interaction, are excluded from valuable sources of information. Interactions with other parents can support parent responsibility, and more frequent interactions provide greater opportunity for information exchange and social persuasion.

Because of the influence of social interactions on parent beliefs and behavior, the following hypotheses are advanced:

H1. *The size of parent social networks and the frequency of interactions with other parents in a school are positively related to parent responsibility.*

H2. *The size of other adult networks and the frequency of interactions with other adults are positively related to parent responsibility.*

CHAPTER FOUR

RESEARCH METHOD

Research Design

This quantitative correlational study was designed to test the relationship between parent social networks and parent responsibility. Survey data were used in order to gain a better understanding of the social influence on parent responsibility. Any relationship between parent social networks and parent responsibility cannot be taken as causal evidence as the data are from a correlational design. That stated, controls were used to compare the relative strength of social networks against other social factors such as poverty.

Research Population

The sample was drawn from a large urban district located in the Midwestern United States. It had a total student population in October 2008 of 41,180 students. The district is ethnically diverse with an ethnic composition of 34% Caucasian, 34% African American, 1% Asian, 20% Hispanic, and 11% Native American. Approximately 77% of the total district student population was eligible for free or reduced lunch. The district consists of 59 elementary schools, 17 middle schools and 12 high schools. Parent involvement data from the district indicated that 76.9% of parents attended at least one parent/teacher conference during the 2007-08 school year.

Data Source

Survey data were collected in the summer and fall of 2010 from a random sample of 5th grade parents from each elementary school in the district. Forty

parents of 5th grade students from each elementary school were chosen. If a school had a student population of fewer than forty students in the 5th grade, the entire grade level was surveyed. The rationale for choosing 5th grade parents was that these parents, being the parents of the oldest students in the school, would have had the opportunity to establish relationships with other parents in the school. Additionally, research indicates that parents of elementary students are more involved than parents of older students and that parent involvement declines with student advancement in grade level, especially as a student moves beyond the elementary years (Barnard, 2004). Given the opportunity to establish relationships through length of time in the school and parent involvement research indicating greater involvement of parents during elementary years, 5th grade parents were chosen as the sample.

Three distributions of surveys were administered. Each distribution was sent to a total sample of 2,168 parents. For the first two distributions, surveys were mailed to the homes of each student during the summer of 2010. Addresses were provided by the school district. A self-addressed, stamped return envelope was provided for each distribution, and instructions were included to return completed surveys directly to the researcher in prepaid return envelopes. The third distribution was done in the fall of 2010 through schools with surveys sent home in weekly parent packets to non-respondents. Self-addressed, stamped envelopes were included in the third distribution also so that parents could return completed forms directly to the researcher rather than to the school. Surveys from students who were no longer attending each school were removed from the sample. Because of high

mobility rates in the district, the original sample was reduced by 338 students resulting in a total sample of 1,830 parents. Of the 1,830 parents, 423 surveys were returned resulting in a return rate of 23 percent.

With a low response rate, bias attributed to respondents and non-respondents is a limitation that needs to be considered. Kanuk and Berenson (1975), in their synthesis of studies on respondent bias, suggest that there are often social and personality differences between respondents and non-respondents, with respondents typically being more social, responsible, and intellectually curious. This would suggest that a low response rate may actually underestimate the strength of the relationship in the overall population in that parents who are more likely to have lower responsibility and smaller social networks may not have returned usable surveys.

Measures

Parent Social Network

The social networks in this study were egocentric in nature. Egocentric network analysis focuses on networks of individuals and provides information about relationships that may contribute to that individual's behavior and attitudes. Name generators were used to capture the size of parent social networks in school and with other adults outside of school. In egocentric studies, name generators are used to identify a respondent's alters, or names of actors with whom an actor has direct contact (Burt, 1984; Marsden, 1990, 2005; Knoke & Yang, 2008; Wasserman & Faust, 1994). Name generators are the most commonly used method to gain information about membership in a respondent's network (Marsden, 1990; Knoke &

Yang, 2008; Scott, 1987, 2000; Wasserman & Faust, 1994). On name generators, respondents are asked to list names or initials of other individuals with whom they have a specified relationship. Name generators may also be used to gather additional information about network characteristics such as frequency of contact and strength of relationships (Wasserman & Faust, 1994). Marsden and Campbel (1984) suggest that relationship strength is best measured by an individual's evaluation of the closeness or importance of a relationship.

Validity of Name Generators. Very little research as been done on the construct validity of social network measures (Wasserman & Faust, 1994), but the evidence that does exist supports the validity of name generators. Mouton, Blake, and Fruchter (1955) and Burt, Marsden and Rossi (1985) suggest that the construct validity of name generators can indeed be studied (Wasserman & Faust, 1994). Mouton, Blake, and Fruchter (1955, as cited in Wasserman & Faust, 1994), tested measures used in dozens of sociometric studies, and they concluded that name generators were indeed related to actor characteristics (e.g. size of network and frequency of interaction). Their analysis led them to confirm that both face and construct validity are strong for the often-used name generator (Wasserman & Faust, 1994).

The 1985 General Social Survey (GSS) (Burt, 1984, 1985) module on American's core discussion groups is an example of a large study using a name generator measure (Knoke & Yang, 2008; Wasserman & Faust, 1994). Interviewers for the GSS added a network component to the survey that asked respondents to identify people with whom they had discussed important matters (Christensen &

Levinson, 2003; Burt, 1994, 1995). Interviewers in that study recorded up to six names for each ego respondent (Knoke & Yang, 2008). The 1985 GSS asked a representative sample of 1531 people the following question: "From time to time, most people discuss important matters with other people. Looking back over the past six months, who are the people with whom you discussed matters important to you?" (Christensen & Levinson, 2003; Wasserman & Faust, 1994). This example illustrates how name generators give rise to ego-centered networks (Wasserman & Faust, 1994).

Validity of the name generator is also supported by its use in existing educational research. Sheldon (2002) used a name generator in his study on the relationship between parent social networks and parent choices to become involved in their children's education at home and at school. Sheldon (2002) asked parents to list up to seven names of parents in the school with whom they had a relationship and up to seven other adults with whom they discussed educational matters. He also measured the frequency of interaction with a 5-point Likert scale ranging from daily to as infrequently as twice a year.

Reliability of Name Generators. Social scientists agree that properties of social networks are changing traits (Marsden, 1990). However, Marsden (1990) suggests that although people are incapable of reporting accurately on transactions that take place within highly specific time frames, they are able to accurately recall their typical social relations. In an effort to test the accuracy of free recall name generators, Bell, Belli-McQueen, and Haider (2007) conducted a test-retest reliability study. They interviewed a sample of 202 informants about their networks

up to thirteen times at three-month intervals and found that measurement of small networks by enumeration on a name generator suffered little loss of information (Bell, Belli-McQueen, & Haider, 2007). Bell, Belli-McQueen and Haider (2007) concluded, "if concern is to learn about relatively small networks, then measurement of such networks by enumeration or global estimation should suffer little loss of information as long as there are no anonymous alters" (p. 10).

For this study, parents were asked to list the initials of up to nine other parents of children in the school and up to nine other adults with whom they communicate about their child's education. The reason for allowing up to nine responses, instead of seven as used by Sheldon, was to give the opportunity for greater variability in network size. Focusing on network characteristics of frequency and importance, parents were asked to indicate the frequency and importance of contacts with other parents on separate 6-point Likert scales. They were also asked to indicate the frequency of contact with individuals listed as other adults with whom they communicate about their child's education.

Parent Responsibility

Parent responsibility was defined as "a willingness of parents to take action once they have constructed their educational role and their efficacy beliefs have been developed." Role construction and parent efficacy are the two factors that make up parent responsibility. The parent role construction and parent efficacy measures by Walker, Wilkins, Dallire, Sandler, and Hoover-Dempsey (2005) were used to operationalize parent responsibility.

Role Construction. Development of the Parent Role Construction Scale began with a qualitative study by Hoover-Dempsey and Jones (1996, 1997). Coding of over 9,000 statements resulted in three major patterns of role construction (interrater agreement across categories = .83) (Walker et al., 2005, p. 90). The patterns they identified were school-focused, parent-focused, and partnership-focused role construction beliefs. Parent-focused role construction reflected parent beliefs that the parent is primarily responsible for a child's education. School-focused role construction reflected that the school is primarily responsible for the child's education. Partnership-focused role construction reflected a belief that both the school and the parent are responsible for a child's education. Pilot testing of a questionnaire assessing the three parental role constructions yielded satisfactory reliabilities on the parent-focused and partnership-focused constructions (parent-focused = .88; school-focused = .55; partnership-focused = .83).

Because of concerns with lower reliabilities of school-focused role construction and the difficulty of capturing the core of passivity in objective items, Walker et al. (2005) subjected previously gathered survey data to principal-components factor analysis. Explaining the concern with measuring passivity beliefs, Walker et al., (2005) state, "it is difficult to measure what parents do not do" (p. 92). Their work resulted in combining two of the constructions, parent-focused and partnership-focused items, into one construct – active role beliefs. The result was a two-part scale categorizing parent role construction into active and passive role beliefs (Walker et al., 2005). Reliability analyses of items organized into these two factors yielded acceptable results (a=.67 for the active factor and a=.65 for the

passive factor). Because of continued concern with assigning conceptual meaning to a passivity score, Walker et al. (2005) dropped the passivity items from their measure and adopted a 10-item role activity beliefs scale assessing the beliefs component of role construction. Sample items include whether parents disagree or agree with statements such as, "I believe it is my responsibility to communicate with my child's teacher regularly" and "I believe it is my responsibility to help my child with homework." Results of an exploratory factor analysis with data from this study found good factor loading and strong internal item consistency (a= .95) further supporting the validity and reliability of the measurement.

Parent Self-Efficacy. Parent self-efficacy is defined as parent beliefs in their capabilities to organize and execute the courses of action required to affect student learning and development (Bandura, 1997, p. 2). Parent self-efficacy has been identified as a significant influence on the goals that people set, their persistence in meeting those goals, and their ultimate achievement in reaching goals (Bandura, 1996, 1997). Walker et al., (2005) refined the parent efficacy scale that was initially designed by Hoover-Dempsey et al. (1992) by changing the Likert response set from 5 items to 6 item. They also removed one item from the scale because it contained multiple contingencies ("Most of a student's success in school depends on the classroom teacher, so I have only limited influence") (Walker et al., 2005, p. 93). The result was an 11-item scale that was used with over 800 parents of public elementary and middle school students. It yielded an alpha reliability of .80 (Walker et al., 2005).

Walker et al. (2005) desired to keep the scale as short as possible because their full parent questionnaire assessed multiple constructs. Therefore, they removed items with the lowest inter-item correlations that, when removed, resulted in the least drop in reliability. Phrasing of three of the four items in question was similar to other items, so they were subsequently eliminated. The fourth item was dropped because it contained multiple contingencies ("If I try hard, I can get through to my child, even when s/he has difficulty understanding something") (Walker et al., 2005, p. 93). The resultant measurement consists of 7 items with a 6 point Likert response set. Sample items included whether parents disagree or agree with statements such as "I know how to help my child do well in school" and "I feel successful about my efforts to help my child learn." Results from an exploratory factor analysis with data from this study found that parent efficacy items loaded strongly on the parent efficacy factor (a= .95) supporting both the validity and reliability of the measurement.

Demographic Information

Demographic information collected from parents included gender, parent educational attainment, ethnicity, SES as indicated by free or reduced lunch status, length of time the child has attended the current school, and length of time the family has lived in their current residence.

Analytical Technique

Multi-level modeling with HLM 6.4 was used as the analytical technique. The unit of analysis for this study was parents. That stated, parents are also nested in schools, and their perceived responsibility is likely influenced by school

membership. Thus, data for this study can be examined at multiple levels: the individual parent level and the school level. For this reason, multi-level modeling was used to decompose the variance in parent responsibility to individual parent differences and school differences. Unlike Ordinary Least Squares (OLS) regression, HLM accounts for the ecological fallacy that occurs when making inferences about groups from individual data or inferences about individuals from aggregated, group level data (Luke, 2004). HLM also provides a more precise estimation of standard error, thereby reducing the likelihood of making a type I error, or rejecting the null hypothesis when it is true (Raudenbush & Bryk, 2002).

Two models were tested. First, a Random Effects ANOVA was used to decompose the variance in parent responsibility to individual and school effects. Second, a Random Coefficient Regression model was used to test the distributive effects of parent social network size and frequency on individual parent responsibility. Co-variates, such as socioeconomic status and valence, were included at the individual level to control for possible intervening variables. A step wise approach was used to first identify significant predictor variables. Significant predictors were then entered into a combined model to test the relative strength of each variable. The random coefficient model was used to test the hypotheses. Below are equations for the models:

Random Effects ANOVA

Level I: $PR = \beta_0 + r$

Level II: $\beta 0 = \gamma_{00} + u$

Random Coefficient Regression

Level I: $PR = \beta_0 + \beta 1(\text{SN Size}) + \beta 2\ (\text{F/R lunch}) + r$

Level II: $\beta 0 = \gamma_{00} + u0$

$\beta 1 = \gamma_{10} + u1$

$\beta 2 = \gamma 2_0 + u1$

$\beta 0$ = is the school mean for Parent Responsibility

$\beta 1$ = distributed effect of social network size on parent responsibility

$\beta 2$ = distributive effect of SES on parent responsibility

Summary

The purpose of this research was to test the relationship between parent social network and other adult social network and parent responsibility. Valid and reliable measures were used for parent social networks, other adult networks, and parent responsibility. This study included nested data; therefore HLM was used to test individual and school level effects on parent responsibility. Chapter V discusses the data and provides analysis and findings.

CHAPTER V

FINDINGS

Introduction

The purpose of this research was to examine the relationship between parent social networks and parent responsibility. Two types of parent social networks were considered: parent networks with other parents (parent social networks) and parent networks with other adults who were not parents of children in the school (other adult social networks). Results from the Random Coefficients Regression Model tested the hypotheses. Two hypotheses were stated. It was hypothesized that parent social network predicts parent responsibility. Secondly, it was hypothesized that other adult social network predicts parent responsibility. Individual and school level descriptive statistics of parent social networks, other adult social networks, and socio-economic status are presented first. Results of the correlational analysis follow. The chapter concludes with findings from the HLM and post hoc analyses.

Descriptive Statistics

Descriptive statistics were calculated to describe the sample of parents who were nested within 56 urban elementary schools. These data will serve to guide later analyses of the relationship between parent social networks and parent responsibility. Table 5.1 shows the mean score and standard deviation for valence, parent social network, other adult social network, parent responsibility, role construction, and self-efficacy at both the individual level and school level. The mean SES of .71 for parents in this sample is representative of district free/reduced lunch percentage of .76 as reported in 2009 district data.

At the school level, the mean size of parent social networks was 2.74 with a standard deviation of 1.59 and a range of 0.00 to 6.47. These descriptive data show the high variability in the size of parent social network across schools. The mean for other adult social network at the school level was 3.44 with a standard deviation of 2.22. Other adult social network size at the school level had a range of 0.00 to 8.67. Again, school level variability was high. These results suggest that, in the average school parents interacted with two to three other parents in the school about the education of their children. Parents in this study also interacted with an average of three to four other adults about educational matters.

Mean response for valence, a parent's own experience in school, was 28.55 on a scale from 6-36. This result suggests that, on average, parents had a positively skewed perception of their own school experiences. The proportion of students participating in free/reduced lunch (SES) at the school level varied from 15 to 100 with a mean of 84.73 and a standard deviation of 25.06. The school-level free/reduced lunch average ($\overline{X}$ =84.73) was higher than the mean at the individual level ($\overline{X}$ =.71). Both averages indicate a high percentage of lower income parents represented in the sample. Size of schools within the district also varied. The average size of the 56 elementary schools was 388 with a minimum of 136 and a maximum of 945.

In addition to descriptive statistics, histograms illustrate the distributions of parent responsibility and its factors, role construction and self-efficacy. The distribution of parent responsibility followed a normal curve with a mean of 78.16 and a range of 41-102. The standard deviation for parent responsibility was 12.33.

Role construction had a mean of 46.93 and a range of 15 – 60 with a standard deviation of 8.7. Self-efficacy had a mean of 31.25 and a range of 19-42 with a standard deviation of 5.99. Table 5.1 displays descriptive data at the individual parent level and at the school level.

Table 5.1

Descriptive Statistics

Variable Name	N	Mean	SD	Minimum	Maximum
LEVEL 1 – Parent Level					
Valence	381	28.55	6.93	6	36
Free/Reduced Lunch	381	.71	.49	0.00	1
Parent Social Network	381	69.02	111.62	0.00	486
Other Adult Social Network	381	83.27	115.05	0.00	486
Parent Responsibility	381	78.16	12.33	41	102
Role Construction	381	46.93	8.71	15	60
Self Efficacy	381	31.23	5.99	19	42
LEVEL II – School Level					
Parent Social Network Size	56	2.74	1.59	0.00	6.47
Other Adult Network Size	56	3.44	2.22	0.00	8.67
Free/Reduced Lunch	56	84.73	25.06	15.00	100
Size	56	388.41	153.73	136.00	945.00

Results from role construction were positively skewed to the right with more agreement between parents about their role in the education of their children. Although the results for self-efficacy followed a normal distribution curve, there was more variability in results for self-efficacy than for role construction. Histograms of parent self-efficacy and role construction are displayed in Appendix A.

Factor Analysis

Because this study operationalized parent responsibility with two scales, a factor analysis was used to assess how well the items cohere around their respective factor. Two factors were extracted: role construction and self-efficacy. Results of the two-factor analysis indicated that items for role construction and items for self-efficacy loaded separately on their respective latent factors with acceptable factor loading (see Table 5.2). Even though three of the loadings on self-efficacy are relatively low (SE1, SE4, and SE7), they fall within the range that Hair, Anderson, Tatham, and Black (1998) refer to as minimal to more important effects. Additionally, with 423 respondents to the survey, factor loadings above .298 are considered to be statistically significant (Habing, 2003). Reliabilities were strong for both role construction (a=.95) and self-efficacy (a=.95). An explanation of factor loading is provided in the discussion section of these findings. Results of the factor analysis are provided in Table 5. 2.

Table 5.2

Factor Analysis

	Factor	
	1	2
LINT (SE1)		.351
LINT (SE2)		.504
LINT (SE3)		.668
LINT (SE4)		.346
LINT (SE5)		.488
LINT (SE6)		.655
LINT (SE7)		.327
LINT (RC1)	.606	
LINT (RC2)	.597	
LINT (RC3)	.422	
LINT (RC4)	.614	
LINT (RC5)	.642	
LINT (RC6)	.676	
LINT (RC7)	.473	
LINT (RC8)	.629	
LINT (RC9)	.720	
LINT (RC10)	.505	

Correlation Results

Correlations were tested to analyze bivariate relationships between the variables in this study. Noteworthy results indicated a statistically significant positive relationship between parent social network (PSN) and parent responsibility (PR) ($r = .431$; $p \leq 0.01$) and between other adult social network (OASN) and parent responsibility ($r = .507$; $p \leq 0.01$). Parent experience in school (valence) also indicated a statistically significant relationship ($r = .169$; $p \leq 0.01$); however, the strength of the relationship was weaker than the social network variables.

Correlations were also tested on the factors of parent responsibility, parent self-efficacy and role construction, with parent social network, other adult social network, and valence. When considered separately, both role construction and self-efficacy had positive relationships with parent social networks and other adult social networks. The strength of the relationships between role construction and parent social networks ($r = .414$; $p \leq .01$) and the relationship between role construction and other adult social networks ($r = .472$; $p \leq .01$) were moderate. The strength of the relationships between self-efficacy and parent social networks ($r = .286$; $p \leq .01$) and self-efficacy and other adult social networks ($r = .356$; $p \leq .01$) were modest. In other words, role construction had a stronger relationship with both parent social networks ($r = .414$) and other adult social networks ($r = .472$) than did self-efficacy ($r = .286$ parent social networks; $r = .356$ other adult social networks). All results were significant at the .01 level. Table 5.3 displays results of the correlation.

Table 5.3

Correlations

Variable	1	2	3	4	5	6
1. Parent Social Network (Z score)	1					
2. Other Adult Social Network (Z score)	.541**	1				
3. Valence (SMEAN)	.156**	.067	1			
4. (SMEAN)Parent Responsibility	.431**	.507**	.169**	1		
5. Self Efficacy (SMEAN)	.286**	.356**	.155**	.748**	1	
6. Role Construction (SMEAN)	.414**	.472**	.156**	.886**	.393**	1

**p ≤ .01

Hierarchical Linear Modeling (HLM) Results

Random Effects ANOVA

Because parents were nested in schools, a Random Effects ANOVA was run to partition variance in parent responsibility to the individual level and school level. The actual between school variability for parent responsibility was 2 percent (ICC = .02) indicating very little variability in parent responsibility at the school level. Variability in parent responsibility was largely a function of individual differences in parents not school differences. This is not surprising given that the referent of

parent responsibility is the individual parent, not the group of parents in the school. Table 5.4 reports the results from the Random Effects ANOVA.

Table 5.4

Random Effects ANOVA

Parent Responsibility	SD	Variance Component	df	Chi-square	P-value
INTRCPT1	2.575	6.631	55	73.02	0.052
LEVEL-1 = PR	12.059	145.415			
ICC = .02					

Note: n= 56 schools

Random Coefficients Regression Model

A random coefficients regression model tested the distributive effects of parent social network and other adult network on parent responsibility. Co-variates of socio-economic status (free/reduced lunch) and valence were included at the individual level to account for possible intervening conditions. The analysis was done in a step-wise manner entering one independent variable at a time. Significant predictors were retained in a combined model to compare the relative strength of the significant predictors.

Both parent social network ($\beta = 5.88$) and other adult social network ($\beta = 6.40$) indicated positive relationships with parent responsibility. Findings indicate a stronger relationship between other adult social network and parent responsibility ($\beta = 6.40$) than parent social network ($\beta = 5.88$) with parent responsibility. All

relationships were statistically significant at the .01 level. Results are displayed in table 5.5.

Table 5.5

Stepwise Random Coefficients Regression Results

Fixed Effect	Coefficient	Standard Error	T-ratio	Approximate d.f.	p-value
FR_1 slope B1 INTRCPT 2, G10					
Free/reduced lunch	-6.335891	1.187933	-5.334	55	0.00
ZPSN SLOPE, B1 INTRCEPT2, G10					
Parent social network	5.875939	0.775498	7.577	55	0.00
ZOASN slope, B1 INTRCPT2, G10					
Other adult social network	6.399370	0.616821	10.375	55	0.00
ZVALENCE slope, B1 INTRCPT2, G10					
Valence	1.994508	0.568592	3.508	55	0.001

Next, a combined random coefficients regression model was tested to analyze covariance between socio-economic status (free/reduced lunch), parent social network, other adult social network, and valence with parent responsibility. Because cores were standardized, the unique effect of each variable can be compared to the other predictors.

When combined, the strongest effect was indicated between other adult social network (β = 5.06) and parent responsibility. The effect of socio-economic status (SES) was lower in the combined model (β = -3.43) than in the stepwise model (β = -6.34). Although the relationship remained negative, the strength of the relationship diminished. Results for parent social network (β = 3.08) in the combined model were lower than results in the individual model (β = 5.87). Results for valence remained fairly consistent between both models (r = 1.14 combined; β = 1.99 individual). All results were statistically significant at the 0.05 level. In the combined model, the strengths of the relationships between parent social network and parent responsibility (β = 3.08) and SES and parent responsibility (β = - 3.43) were similar; however the relationship between SES and parent responsibility was negative. Of the four predictors presented in the combined model, the other adult social network had the strongest relationship with parent responsibility (β = 5.06). Results from the combined model also indicated that 38 percent (R square = .38) of variability in parent responsibility was explained by the combination of the four factors of SES (free/reduced lunch), parent social network, other adult social network, and valence. The finding that the four variables of SES, parent social network, other adult social network and valence explained 38 percent of the variability in parent responsibility suggests that there are other factors that were not included in this model that explain variability in parent responsibility. However, Aron, Aron, and Coups (2008) explain that "it is rare for an analysis of variance to have an R square even as high as .20" (p. 332). According to Cohen's (1988)

conventions for R square, an effect size of .38 is large (as cited in Aron, Aron & Coups, 2008). Results are displayed in Table 5.6.

Table 5.6

Random Coefficients Combined Results

Fixed Effect	Coefficient	Standard Error	T-ratio	Approximate d.f.	p-value
INTRCPT2, G00	81.074499	0.781325	103.765	55	0.00
Free/reduced lunch (SES)	-3.434356	1.030668	-3.332	55	0.00
Parent social network	3.081624	0.728806	4.228	55	0.002
Other adult social network	5.064097	0.599785	8.443	55	0.00
Valence	1.143924	0.476227	2.402	55	0.02

R-square =.38

Post Hoc

Two post hoc analyses were conducted to gain a better understanding of differences in parent responsibility and the relationship between parent social networks and parent responsibility. First, a comparison of means by SES category for parent responsibility and each observable factor (role construction and self-efficacy) was tested to gain an understanding of differences in parent responsibility between lower income and more affluent parents. Second, a mediation test was used to determine if parent social networks can mediate the relationship between SES and parent responsibility. The results follow.

Comparison of Means by SES Category

Results of the comparison of means confirm the random coefficients regression findings in that the average parent responsibility level was stronger for non-free/reduced lunch parents ($\overline{X} = 82.98$) than for parents who qualified for free/reduced lunch ($\overline{X}$=76.16), indicating that more affluent parents in this study had higher perceptions of their responsibility in the education of their children. This difference was statistically significant (F = 25.74; p ≤ .01). Results are displayed in table 5.7.

Table 5.7

Comparison of Means

SMEAN (F/R)		SMEAN (PR)	SMEAN (RC)	SMEAN (SE)
Non F/R Lunch	Mean	82.98	49.77	33.48
	N	112	112	112
	Std. Deviation	12.21	8.21	5.55
F/R Lunch	Mean	76.16	45.74	30.27
	N	269	269	269
	Std. Deviation	11.83	8.65	5.93
Total	Mean	78.16	46.93	31.23
	N	381	381	381
	Std. Deviation	12.33	8.70	5.99

The comparison for each property of parent responsibility also indicated differences between economic groups. More affluent parents had higher average role construction ($\overline{X} = 49.77$) and self-efficacy ($\overline{X} = 33.48$). Parents who qualified for free/reduced lunch had lower role construction averages ($\overline{X} = 45.74$) and self-efficacy ($\overline{X} = 31.23$).

Mediation Analysis

Understanding the mediation effect of conditions on a dependent variable gives the researcher a better understanding of how conditions interact to influence an outcome. In this case, the researcher examined the relationship between SES and parent responsibility with parent social network as a possible mediating variable. The traditional regression-based approach for testing mediation patterns (Barton & Kenny, 1986) offers criteria for researchers to claim the presence of "full," "partial," or "no" mediation in their data (Iacobucci, 2008, p. 11). Using the traditional approach, the researcher fits three regression models:

$$M = \beta_1 + aX + \varepsilon_1$$
$$Y = \beta_2 + cX + \varepsilon_2$$
$$Y = \beta_3 + c'X + bM + \varepsilon_3$$

βs (betas) are the intercepts, εs are the model fit errors, and a, b, c, and c' are the regression coefficients capturing the relationships between focal variables (Iacobucci, 2008, p. 11). Mediation is likely if three criteria are met. These criteria are:

1. evidence of a linear relationship between the independent variable (*X)* and the mediator (*M*).

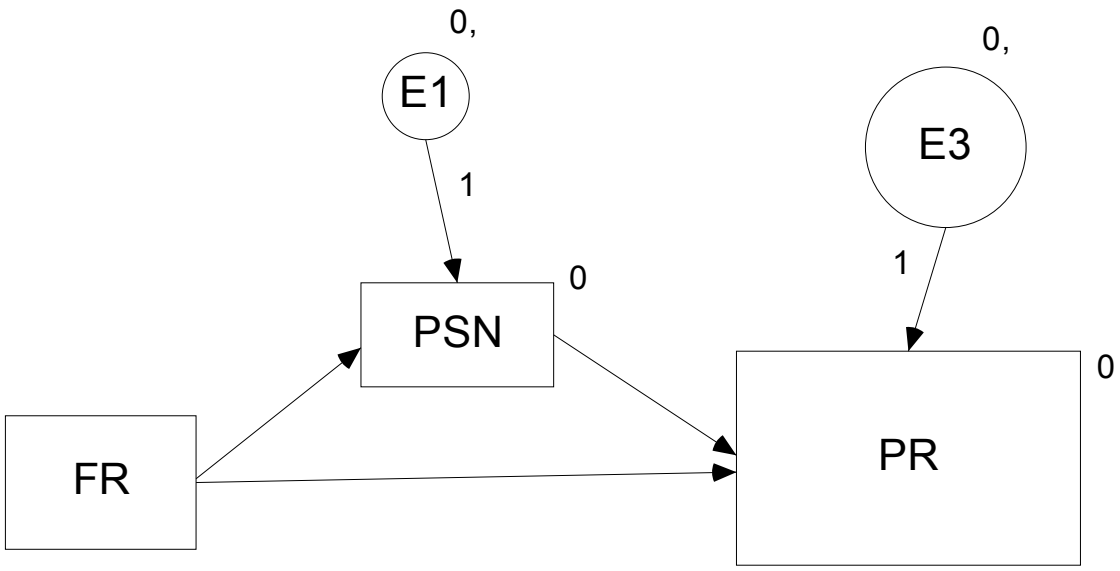
2. evidence of a linear relationship between the independent variable (*X*) and the dependent variable (*Y)*[1].
3. the term *b* in the third equation is significant, indicating the mediator (*M*) helps predict the dependent variable (*Y*), and also c', the effect of the independent variable (*X*) directly on the dependent variable (*Y*), becomes significantly smaller in size relative to c in the second equation. (Iacobucci, 2008, p. 12).

Concerning the third criterion above, testing the difference between c (the direct effect) and c', (the direct effect estimated while controlling for the indirect, mediated effect) is equivalent to testing whether the strength of the mediated path exceeds zero (Iacobucci, 2008, p. 12). If all three of the above criteria hold, the researcher concludes that there is "at least partial mediation; the variance in *Y* attributable to *X* is partly a direct effect and partly an indirect effect mediated through *M*" (Iacobucci, 2008, p. 12).

The mediation model tested in the post-hoc predicts that SES will operate through parent social network to influence parent responsibility (see Model 5.1). Parent social network was specified as the mediating variable because schools have more control over these relationships than interactions with other adults. Three random coefficient regressions in HLM 6.04 were run to evaluate the relationship between SES and parent social network, the relationship between SES and parent responsibility without including parent social network, and the net effect of SES on parent responsibility with parent social network entered as another predictor variable.

Model 5.1

Path Model of the Relationship Between Parent Social Network and Parent Responsibility

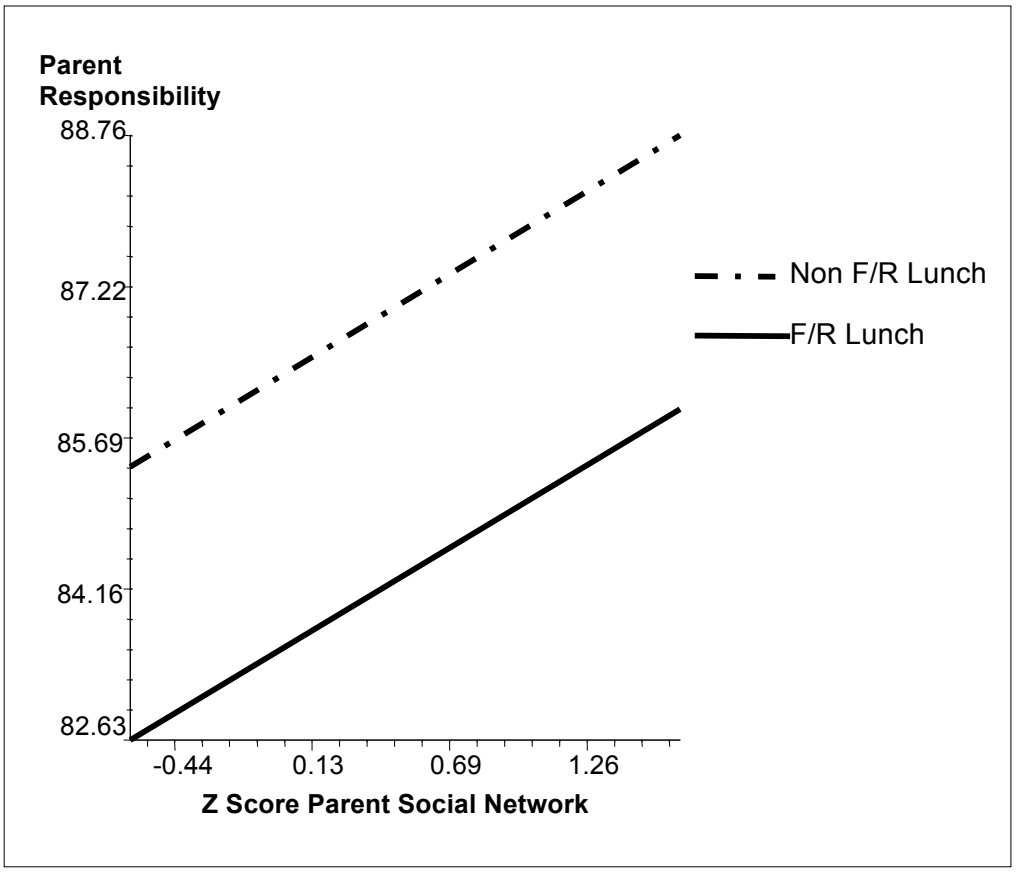


Results from the mediation analysis suggest that parent social networks have at least a partial mediation effect on the relationship between SES and parent responsibility. In other words, the variance in parent responsibility attributable to free/reduced lunch is partly a direct effect and an indirect effect mediated through parent social relationships. An explanation follows.

A linear relationship was found between free/reduced lunch (*X*) and the mediator, parent social network ($\beta_{10} = .34$; $p \leq .01$) satisfying the first criterion. Results also indicate a linear relationship between free/reduced lunch (*X*) and parent responsibility (*Y*) ($\beta_{10} = -3.01$; $p \leq .01$) satisfying criterion two. The addition of parent social network to the model reduced the effect of SES on parent responsibility ($\beta_{10} = -2.7$). Additionally, the net effect of parent social network on

parent responsibility was significant ($\beta_{20} = 1.5$; $p < .05$). Because all three conditions were met, the researcher can conclude that parent social networks have at least a partial mediating effect on the relationship between free/reduced lunch and parent responsibility. Graph 5.1 illustrates this relationship. There is a clear difference in parent responsibility between free/reduced lunch and non-free/reduced lunch parents, but for both groups parent responsibility increases as parent social networks increase. Low-income parents with large parent social networks had similar levels of parent responsibility as more affluent parents with smaller networks.

Graph 5.1



CHAPTER VI

DISCUSSION

Parent involvement in the education of children is widely recognized as an integral part of student success in school (Fan & Chen 2001; Lareau, 1989) and has become a target of educational policy (Sheldon, 2000). Some studies have shown a positive effect of parent involvement on student learning (Christenson, Rounds, & Gorney, 1992; Epstein, 1991). Others have found little, if any, measurable effects (Bobbett, 1995; Ford, 1989; Keith, Reimers, Fehrmann, Pottebaum, & Aubey, 1986; Natriello & McDill, 1989). Inconsistencies in findings are often the result of limitations in parent involvement research, including differing definitions of parent involvement, different operationalizations among researchers, and the lack of a guiding theoretical framework (Fan & Chen, 2001).

The conceptual and operational problems of parent involvement suggest a new concept is needed to define and measure the role of parents in the educational process. Parent responsibility accounts for the cognitive beliefs of parents that lead them to control factors that influence the learning and development of their child. This study contributes to the literature on parent/school relationships by testing the relationship between parent social networks and parent responsibility. It adds to Sheldon's (2000, 2002) work on parent social networks by exploring the effects of social networks on parent views of their role in the educational process and on their confidence to effectively execute this role. In this study, social networks were perceived as vehicles through which parent efficacy and role construction can be generated and enhanced. This discussion section starts with a general explanation of

descriptive data on parent responsibility and social networks. It then explains the findings from the regression models through concepts of social network analysis and Social Cognitive Theory. The chapter concludes with implications for practice and research.

Descriptive Data on Parent Social Networks and Parent Responsibility

Descriptive data on parent social networks and parent responsibility provide insight into parent social connections within the sample for this study as well as differences in parent responsibility between low-income parents and more affluent parents. Even though descriptive evidence does not address the hypotheses, the information does have implications for understanding the interaction patterns and beliefs of parents in this study. Descriptive data on parent networks will be considered first.

Network Size

At the school level, mean network sizes of 2.74 (parent social network) and 3.44 (other adult social network) indicate that parents within elementary schools in this urban district, on average, had relationships with two to three other parents in the school. Other adult social networks were larger and, therefore, could potentially have more influence on parent responsibility than networks of parents within schools. These results are consistent with Sheldon's (2002) findings. In his sample of 195 parents in two elementary schools, he found a mean parent network size of 1.96 and a mean other adult network size of 3.31 (Sheldon, 2002). In short, parents in this sample, similar to Sheldon's, had more interactions about their child's education with adults outside of school than parents within schools.

Implications of limited parent networks within schools are numerous. Without frequent contact with other parents in the school, parents miss the opportunity for shared information, skills, and practices that can shape parent responsibility. Bourdieu (1986) argued that network size is an important indicator of social capital. Lin (1988) argued that larger social networks provide individuals with greater access to a wider variety of social resources. Additionally, limited relationships between parents in schools suggests that most parents do not possess a sense of "community" or sense of shared partnership in their children's education (Bourdieu, 1986). Developing a sense of community through established relationships between parents in schools is important because it offers the promise of the exchange of important social and personal resources.

Parent Responsibility

Before addressing the descriptive data on parent responsibility, it is important to discuss how the two properties of parent responsibility interact. Role construction and efficacy are the conceptual dimensions of parent responsibility. These factors uniquely and collectively shape parent beliefs and behaviors.

Role construction, what a parent believes he should do in the educational process (Hoover-Dempsey & Sandler, 1995), and a parent's belief that he/she possesses the skills and abilities to execute those actions are not necessarily related. In other words, just because a parent perceives his role as helping his child succeed in school does not necessarily mean that the parent has confidence in his skills or ability to do so. Hoover-Dempsey and Sandler (1995) suggest that a variety of factors such as the parent's success in school, parent education levels, language

barriers, perceptions of school receptivity to parent efforts, and other factors can influence parent efficacy to engage in behaviors that enhance educational outcomes. These factors may hinder a parent from taking action even if the parent perceives it is something that he/she should do. Because both of the properties of parent responsibility, role construction and self-efficacy, are important predictors of parent behavior, considering ways to enhance each property offers promise for the enhancement of parent responsibility.

Descriptive data on parent responsibility describe differences in how parents perceive their role in education and their efficacy for carrying out this role. The dispersion in responses for role construction was less than for parent efficacy. There appeared to be more agreement among parents in this study about their role in the educational process (Appendix A displays distribution of parent role construction and self-efficacy). Parents in this study generally perceived they were responsible for communicating with their child's teacher, helping their child with homework, volunteering at their child's school, and other behaviors involved in responsible parenting. As found in the post hoc analysis, these perceptions differed by economic levels with lower income parents not sharing as strong of a role construction as more affluent parents. When parents believe they have responsibility for educational tasks, they are more inclined to control factors that influence their child's learning.

Parent responsibility is not solely dependent on role construction. Parents must also possess the agency to control factors that shape student achievement. Parent efficacy beliefs in this study were not as consistent as role construction. There was more dispersion in how efficacious parents felt. Greater variability in

parent efficacy suggests that parents may be hindered in their efforts to enhance educational success even when they perceive that their role is to help their children in school. Parents that do not have confidence in their abilities to enhance educational outcomes may not exhibit behaviors that support their children's learning. Similar to role construction, parent efficacy differed by economic levels with lower income parents feeling less efficacious.

In summary, descriptive data suggest that parents in this sample had very few contacts with other parents in their child's school. Limited contact between parents indicates that there is limited transfer of information between parents. Descriptive data also indicate that parent responsibility varies by economic status with lower income parents displaying lower efficacy and role construction.

The Relationship Between Parent Social Networks and Parent Responsibility

Results from the regression models confirm the importance of parent social networks for parent responsibility. Consistent with Sheldon's (2000) findings, social networks are influential sources of parent beliefs about their role in the educational process and their ability to effectively control factors that influence student learning. Simply stated, parents are social actors, and the decisions they make concerning their children's education are influenced by the social networks in which they are involved. Of importance for this section is an explanation for why social networks matter for parent responsibility. Three findings in particular are discussed: 1) The stronger effect of other adult networks on parent responsibility, 2) the relationship between social networks and the factors of parent responsibility, 3) the mediating effect of social ties with parents.

Other Adult Networks and Parent Responsibility

Finding that the relationship between other adult social networks and parent responsibility was stronger than the relationship between parent social networks and parent responsibility has important implications, especially in high poverty communities. This finding suggests that for parents in this district parent responsibility was influenced more from other adults with whom they discuss educational matters than from other parents in the school. These other adults consisted primarily of close family members, such as siblings, grandparents, and cousins.[i] On the surface, close connections with other adults, primarily family members, appear positive, but evidence about the value of weak ties raises concerns about potentially negative consequences of close-knit ties if such interactions are not balanced with frequent interactions with other parents in the school.

Parent interactions with other parents in the school may be more critical for parent responsibility than parent interactions with other adults outside the school. According to Granovetter (1973), closely-knit groups, such as the ones indicated in other adult networks, are homogenous networks consisting of individuals who think and behave in similar ways. Group norms within homogenous networks often become "reified, rigid, and outdated" (Granovetter, 1973, as cited in Sheldon, 2000, p. 41) because of a lack of new and novel information in network discussions. One of the reasons for outdated group norms is that closely-knit, homogenous networks do not contain individuals who act as "weak ties" (Granovetter, 1973). "Weak ties" represent individuals whose perspectives, skills, and knowledge may be different from others in the network. Weak ties are an important source of social capital

because they can potentially bring new ideas, perspectives, and information into the group (Granovetter, 1973). Potential resources from weak ties include transmission of knowledge, modeling of behaviors that promote student success, and social support to enhance parent efficacy to attempt and persevere in responsible behaviors.

If parents in this study gained most of their information about responsible parenting from homogenous networks of family and friends who do not have connections with the school, they may be missing opportunities for the introduction of new ideas or novel information within their most influential networks. For example, family members and close friends without contact with the school are unable to transfer knowledge about school activities, resources, expectations, or student progress. Lareau and Shumar (1996) found that when parent social networks are comprised mostly of relatives or close acquaintances, their networks "do not provide them with the information that appeared to be important to other parents" (as cited in Sheldon, 2000, p. 44). Unless relatives or acquaintances within a network have ties with the school, they are unable to provide information relative to that particular school or information about resources available at the school (Lareau & Shumar, 1996).

According to Lareau and Shumar (1996), a network's ability to function as a source of information depends greatly upon the membership of that network. Lareau and Shumar found that parents, whose networks included ties to educators and other parents in the school, exchanged information about the school and opinions about educational practices. Lareau and Shumar suggest that such networks are essential

because “they provide a basis for helping parents troubleshoot problems and develop plans for their encounters with educators” (p. 28). They also provide a means for parents to develop ideas of how other parents handle family/school relationships and assist their children with homework (Lareau & Shumar, 1996, p. 28).

Parents who lack efficacy to approach their children’s teachers about educational matters may find support to do so from relationships in social networks. The influence of relationships within parent social networks may also refine parent perceptions of healthy school/family partnerships and reinforce a parent’s role in the education of their children. This seems especially true when networks include school parents with high levels of parent responsibility. Evidence on the relationship between parent interactions with other parents in the school and parent responsibility is important for schools because schools have very little influence on social interactions outside of the school community. Schools can, however, influence relationships among parents within the school. Providing opportunities for parents to build relationships with other parents in the school who have access to school related information means that parents could potentially benefit from this new information, and their perceptions of parent responsibility may be enhanced.

Factors of Parent Responsibility: Role Construction and Parent Efficacy

The regression models were based on a parent responsibility score that combined the two observable factors, role construction and parent efficacy, into one latent variable. The factors were also treated as unique variables in the correlational analyses, and thus provide a different perspective on the relationship between social

networks and parent responsibility. Even when a parent's role in the educational process has been established, parent efficacy is needed to control factors that lead to success. Recall from the discussion of descriptive data that there was considerable variation in perceived parent efficacy, and parent efficacy was significantly lower for parents with children qualifying for the federal lunch program. A relationship between social networks and parent efficacy, however, suggests that frequent interactions with parents and other adults can potentially offset the negative effects of poverty on parent efficacy.

Social Cognitive Theory offers an explanation for how social interactions shape parent efficacy. Social Cognitive Theory suggests that parents will likely engage in, repeat, and persevere in activities in which they feel competent (Bandura, 1997). According to Hoover-Dempsey and Sandler (1995), parent efficacy translates into parent beliefs that they can help their children achieve success in school, that they possess the skills to teach or assist their children, and that they have the skills necessary to locate extra resources for their children if needed (as cited in Sheldon, 2002). Parent efficacy is critical especially in high poverty communities such as the one in which this study was conducted because parents in high poverty communities experience a myriad of external obstacles that impede their ability to be involved in the educational process. Obstacles for these parents include factors such as demanding work schedules, lack of transportation, lack of caregivers to watch younger children at home while the parent visits the school, limited means of communication, limited knowledge concerning ways to enhance educational outcomes, and a variety of other factors (Lareau, 1987). Persistence is needed by

parents to persevere in activities and actions that can potentially lead to student success despite the obstacles they face. Building the efficacy of these parents to try new actions and activities and to persevere in the face of tremendous obstacles can enhance their responsibility in the education of their children.

Another benefit of social networks, stemming from Social Cognitive Theory, is that networks are important because of the opportunity for modeling responsible behaviors. Modeling means that members of a group observe the actions of others within a group, and these actions influence the behavior of others. According to Social Cognitive Theory (Bandura, 1997), individuals make important choices for behavior based on the modeling of other individuals. Bandura (1989) explained, "human expectations, beliefs, emotional bents, and cognitive competencies are developed and modified by social influences that convey information and activate emotional reactions through modeling, instruction, and social persuasion" (p. 3).

Modeling can influence a parent's perception of the actions or activities that he/she should take in the education of their children. As parents in a social network see and learn of other parents volunteering at school, communicating with the child's teacher, helping a child with homework, and other responsible behaviors, they, too, are likely to be encouraged to engage in those behaviors. Additionally, relationships with highly efficacious parents can serve as a model to those parents with lower efficacy. As highly efficacious parents participate in their child's education, those with lower efficacy can observe their actions and witness their success. As relationships develop within a group, members of the group may actually offer encouragement to less efficacious parents. For example, a parent who

volunteers at school can invite a less efficacious parent to volunteer also. The success of self-efficacious parents can encourage others to actually participate and persevere in actions and activities that help their child succeed in school.

Socio-economic status and valence also influenced parent responsibility. The fact that socio-economic status had a negative relationship with parent responsibility and valence had a positive relationship reinforces the effect of social conditions on attitudes and behavior of parents. Parents whose children qualified for free/reduced lunch scored lower in parent responsibility than parents whose children did not qualify for the program. These findings are consistent with findings in the literature that suggest lower SES parents are less involved in their children's education and have a lower sense of efficacy than more affluent parents (Hoover-Dempsey & Sandler, 1995, 1997; Lareau, 1987). Valence, although the relationship was positive and statistically significant, had the weakest effect of the four predictor variables indicating that a parent's experiences in school had the least influence on parent responsibility of the four predictors. This finding suggests that even when parents themselves have negative experiences in school, the influence of those prior experiences may be minimal on parent responsibility.

Mediating Effect of Parent Social Networks

The mediation analysis gave insight into the relationship among SES, parent social networks in school, and parent responsibility. Given that the relationship between SES and parent responsibility was negative, it was important to test the power of parent interactions with other parents in the school to mediate the effects of poverty. Mediating variables explain the relationship between an independent

and dependent variable (Hoy, 2010). In this case, it was important to know if parent networks explain why SES was related to parent responsibility.

Findings from the mediation analysis suggest that SES partly operates through parent networks to influence parent responsibility. In other words, a potential reason for the negative effect of poverty is its influence on social interactions among parents in schools. Low income parents in this study who had more contact with other parents also had higher levels of parent responsibility. Conversely, more affluent parents with fewer interactions with other school parents had lower perceived responsibility. There are certainly other plausible reasons for the relationship between poverty and parent responsibility, but this study suggests that the frequency and quality of interactions among parents in a school has consequences for how parents perceive their role in the educational process and their efficacy to control factors that influence student learning and development. Based on findings from the mediation analysis, parent social networks have the potential to lessen the effect of poverty on parent responsibility.

Implications for Practice

Evidence that confirmed the hypothesized relationship between social network and parent responsibility in urban elementary schools has implications for research and practice. Implications for practice include re-thinking strategies to foster parent/school partnerships, finding ways to increase the number and frequency of social contacts among parents within schools, and identifying parents with high levels of parent responsibility so that these parents can influence other parents. Each of these implications is explored in more detail.

Rethinking Parent-School Partnerships

Previous research on parent involvement tended to treat parents as isolated individuals rather than social actors (Sheldon, 2002) and to limit parent involvement to activities dictated by the school in fulfillment of school needs (Adams, 2009). This study helps to change that perspective by viewing parents as social actors and by considering ways to establish partnerships with parents that encourage them to control factors that enhance educational success. This new perspective, parents as social actors, is important because parents and schools need to share responsibility for student learning and school performance.

Findings from this study suggest that schools need to be mindful of parent role construction and parent efficacy when forming effective partnerships with parents. Parents come from a variety of backgrounds and experiences, and they have different perceptions of their role in the educational process. They also differ in their perceptions of their abilities to execute their role effectively. Schools can make a difference in role construction and parent efficacy by considering the importance of social ties among parents. Communication about responsible parent behavior may help parents, especially parents in high poverty communities, form perspectives about what a parent should do in the education of children. Parents who have grown up in a culture of poverty may have a limited understanding of their importance in the educational process. Schools can partner with parents to shape understanding about responsible parent practices such as helping a child with homework, volunteering at school, and communicating with the child's teacher. Helping parents understand that these actions are part of a parent's role in education rather than

expectations imposed by the school because of school needs will encourage parents to control factors that lead to success.

Barriers to parent efficacy include social, cultural, and economic factors that are often unrecognized by schools (Finders & Lewis, 1994). A classic example of a potential barrier is having a parent's child translate school-parent conversations rather than the school providing a translator (Finders & Lewis, 1994). Finders and Lewis explain that asking a child to translate during parent/teacher conferences is problematic because these situations place the child on equal status with an adult (Finders & Lewis, 1994). Finders and Lewis also argue that well-intentioned actions can actually undermine parent efficacy. For example, assuming that parents need something done for them instead of asking parents what they are able to do or asking what their needs might be could undermine parent efficacy (Finders and Lewis, 1994). School leaders who are aware of efficacy formation might be more conscious of how they engage parents in the educational process.

Increase Parent Interactions in Schools

The second implication for practice comes from the finding that social networks do influence parent responsibility. Although schools may have little influence over networks outside of the school community, they do have influence over relationships among parents within the school. According to Sheldon (2000), schools often fail to recognize the value of parent networks and do not use them as a resource to achieve educational goals. Recognizing social networks as an important resource and offering opportunities for relationship building among parents offers promise for the enhancement of parent responsibility.

A variety of school efforts could potentially encourage relationships among parents. These efforts are especially important in less affluent communities where opportunities for informal social interaction are often more limited than in more affluent communities. Informal activities are important because they provide an environment that is conducive to the kinds of conversations and exchanges that promote relationship building. Mario Luis Small, in a study designed to understand why some New York City mothers with children in day care developed networks of support and others did not, found that centers that provided opportunities for informal exchange created important connections among parents (as cited in Cohen, 2010). These opportunities included frequent field trips, organized parent associations and pick-up and drop-off procedures (as cited in Cohen, 2010). In contrast, formal activities such as school open houses or parent/teacher meetings are much more structured and, therefore, often offer less opportunity for relationship building among parents.

Opportunities for informal social interactions among parents often abound in affluent communities. These opportunities come in the form of sporting events, art shows, concerts, fundraising activities, and a variety of other social events that are less structured than formal school-based activities. According to Lareau (1987), parents perceived these interactions as a major source of information about their child's school, and they believed the interactions had an important effect on the way they approached their child's schooling. In contrast, in high poverty communities, such opportunities are often not available, and even when they are available, parent

schedules, lack of transportation, or other obstacles may preclude a parent from participating (Lareau, 1987).

One type of activity that could potentially encourage the building of relationships between parents is to provide opportunities for parents to exchange names and contact information. As a result, a parent who had a question or concern about school could then potentially contact another parent for advice. Additionally, informal art shows where student work is displayed, concerts where children participate, and game nights are examples of activities that would attract parents and encourage relationship building and fellowship activities among parents. Even organizations such a Parent Teacher Associations (PTAs), as long as parents have influence on meeting agendas, might also be used to establish network ties. Parents involved in PTA could work together on projects or activities that both enhance the school environment and foster relationships among parents. Additionally, parents who take responsibility for a school event could pass that responsibility to another parent the next school year. Asking another parent to volunteer could potentially draw that parent into the school community. By working together, parents would have access to information that could help them gain a better understanding of school goals, expectations, parent role in the educational process, and skills necessary to help them fulfill that role. The difference in informal activities, verses formal school activities, is that they give parents the opportunity for meaningful exchange or dialogue that may be difficult in a more structured setting.

Leverage Responsible Parents

A third implication for practice comes from the finding that parent social network had a mediating effect on the relationship between SES and parent responsibility. Encouraging lower income parents to engage in network building activities holds promise for reducing the negative effects of poverty. A challenge for school leaders comes in identifying those parents with high levels of parent responsibility who can serve as boundary-spanners by connecting them with other parents and bringing parents and teachers together. By using parents as network builders, school leaders can potentially encourage cohesiveness among parents and between parents and teachers. Homans (1958) suggests that group cohesion is important because it predicts the frequency of interaction of group members and, ultimately, the reinforcement of desired behaviors (Homans, 1958). The reinforcement that group members feel when their actions/attitudes align with group norms encourages those members to continue those behaviors (Homans, 1958). Similarly, actions that do not align with group norms become less frequent because they are not reinforced by the group (Homans, 1958). Homans suggests that "the more cohesive the group, the larger the number of members that conform to its norms" (p. 600). Parents, because of their shared position in schools, are likely to have the most influence on the beliefs and behavior of other parents.

Schools can encourage cohesion in relationships among parents by offering opportunities for frequent interaction and by encouraging responsible parents to be involved in the group. These opportunities can take a variety of forms. For example, mentoring groups or discussion groups have potential for integrating parents into the

school community. As parents get to know each other and relationships are built, the influence of responsible parents can influence group norms. Another reason for school leaders to pay attention to group cohesion is that high poverty communities typically have high levels of mobility; therefore, establishing meaningful relationships among parents within high poverty schools presents a challenge. Parents who are involved in school activities may serve as a resource to help integrate new parents into the school community. Activities such as welcome nights or similar events that purposefully introduce existing parents to new parents can help draw new parents into the school community. Through these kinds of activities, educational leaders have the opportunity to create a culture that encourages cohesiveness among parents. By creating this type of culture, they may establish relationships among parents that actually make a difference.

Implications for Research

Research questions are often generated from findings in a study. A question generated from findings in this study is the following: "what are additional factors that explain variability in parent responsibility?" Additional research is needed to explain the variability in parent responsibility that was not explained by the variables of SES, valence, parent social network, and other adult social network. Identifying other conditions that were not included in this study could help improve parent responsibility.

Survey data provides very little insight into *how* network processes function to enhance parent responsibility. Individual parent interviews could be used to gain additional insight into this relationship. For example, additional research is needed

to understand factors that contribute to lower parent responsibility among lower SES parents. Gaining further insight about why and how SES is related to a parent's sense of responsibility holds promise for enhancing role construction and self-efficacy.

Replication of this study in other school contexts is also encouraged. Findings from the study are not generalizable beyond the context of elementary schools within this urban district or to urban districts with similar characteristics. Additional research in districts with different demographics may have consequences for school level variability in parent responsibility. Limited school level variance could be attributed to a culture of poverty across the district. With homogenous demographic conditions, it is not surprising to find nominal between school variability. A more diverse sample of schools may find greater variability in parent responsibility across schools. If evidence is found that school level characteristics actually do influence parent responsibility, identifying what those characteristics are could provide important implications for practitioners and policy makers who are given the charge of enhancing parent/school relationships.

Summary

The contribution of this study was that it added to the literature on parent involvement by offering a new "lens" through which to understand parent/school relationships: the lens of parent responsibility. This study advanced work by Adams (2009) and built upon his conceptualization of parent responsibility. This study explored the relationship between parent social networks and parent responsibility. Two hypotheses were advanced:

H1. *The size of parent social networks and the frequency of interactions with other parents in a school are positively related to parent responsibility.*

H2. *The size of other adult networks and the frequency of interactions with other adults are positively related to parent responsibility.*

Findings from the study confirmed both hypotheses. Parent social networks had a positive, statistically significant relationship with parent responsibility that fell within the moderate range (β = .431; p ≤ .01). Other adult networks had a positive, statistically significant relationship with parent responsibility that fell within the moderate to strong range (β = .507; p ≤ .01) indicating that parent social networks do, indeed, influence a parent's perception of his/her responsibility in the education of his/her children. Encouraging relationships among parents can potentially give parents access to novel information that is not exchanged within other adult social networks. When parent networks consist mostly of relatives, the exchange of useful information that can affect parent behavior toward education is less likely (Lareau and Shumar, 1996) than in networks of parents within a school.

The HLM analysis revealed only 2 percent variability in parent responsibility at the school level. Because little variability existed at the school level, a random coefficients regression model was tested to understand the distributive effects of parent social network and other adult network on parent responsibility. The combined model presented in this study of SES, valence, parent social network and other adult social network explained 38 percent of the variability in parent responsibility. Other factors explaining variability in parent responsibility have yet to be identified.

Significance of the implications of this study for research and practice cannot be over stated. The finding that parent social networks are related to parent responsibility in the education of their children holds promise for educational leaders and policy makers. Parents are social actors, and the networks in which they are embedded actually make a difference. For schools, parent social networks are factors over which schools have at least some influence to enhance and expand. Efforts of school leaders to help their parents form relationships has important implications for enhancing student outcomes through the transmission of knowledge, skills and resources embedded in those networks, especially when the networks include parents with high levels of parent responsibility. Enhancing parent social networks has potential for transforming parent/school relationships through norm formation and information transfer that could potentially help to achieve enhanced student outcomes that educational leaders and policy makers are so desperately trying to achieve. The conceptualization of parent responsibility in this study offers a lens through which to understand parent/school relationships that provide important implications for further research, policy, and practice.

[1] The name generator used for other adult networks asked parents to identify the relationship with the person they indicated

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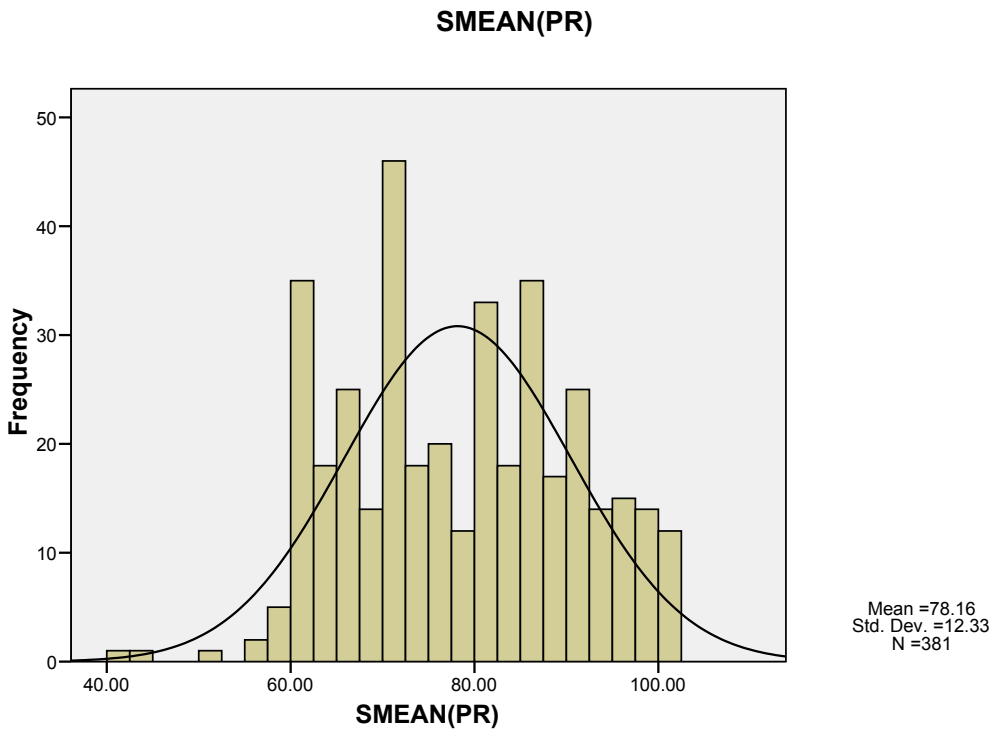
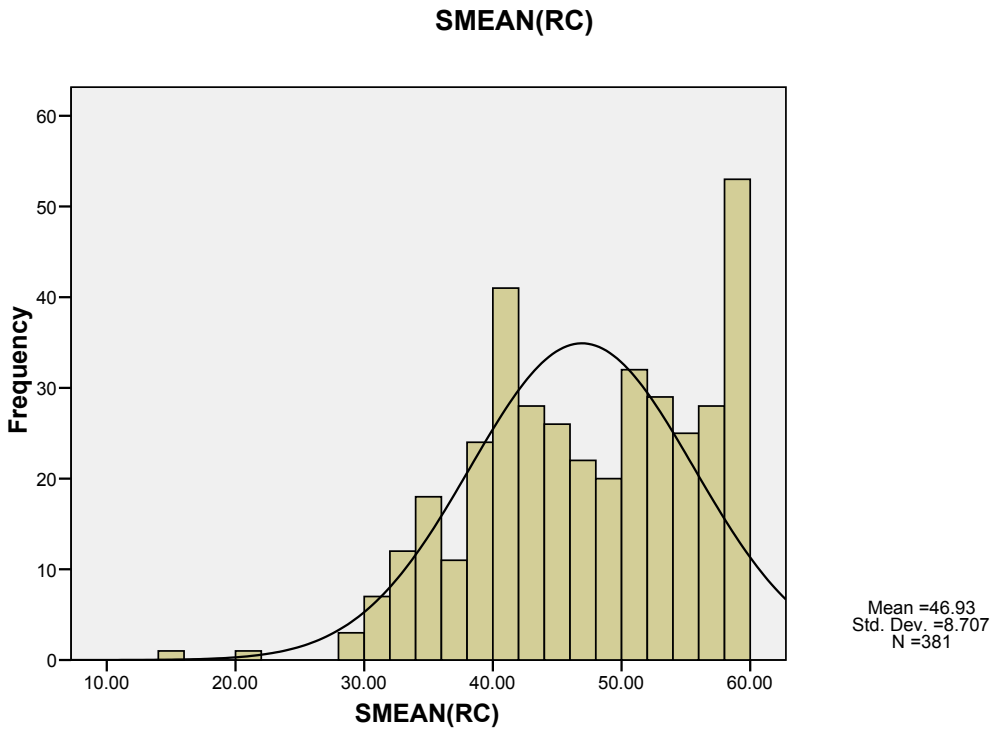
APPENDIX A

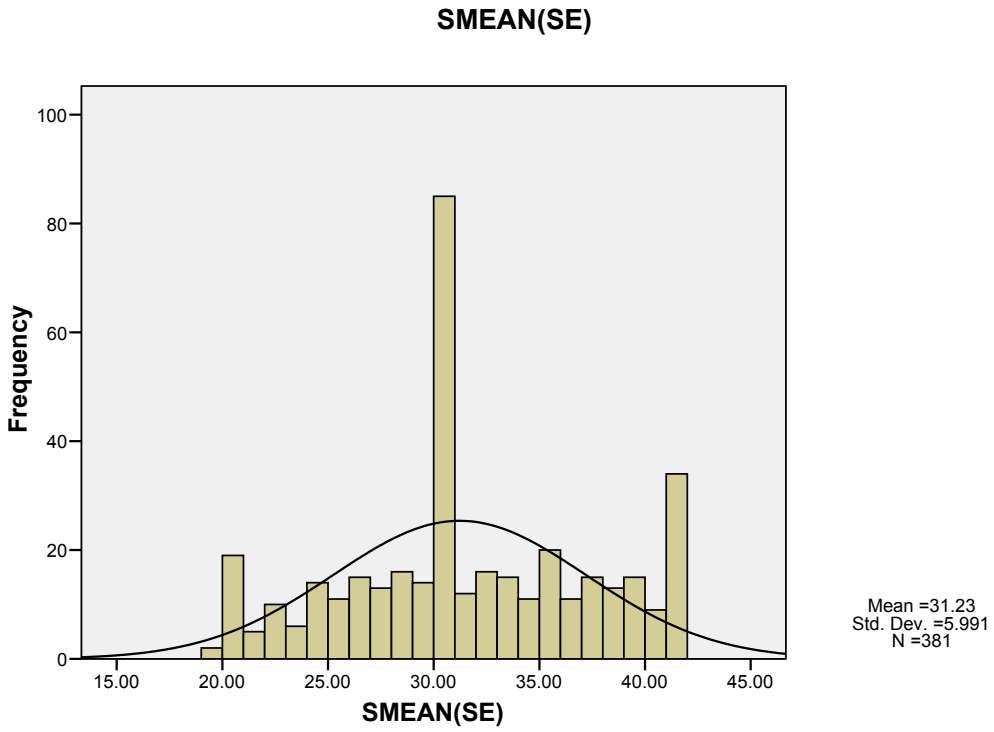
Distribution of Responses of Parent Responsibility



Distribution of Responses of Role Construction



Distribution of Responses of Parent Efficacy



APPENDIX B

Parent Survey

Dear Parent:

We are collecting information on parents' social experiences in school and views about their child's education as part of a study on the relationship between parent social networks and parent responsibility. Your thoughts and feelings are important to us, and we would like you to consider participating in the study. You were selected to participate in the survey because you have a child in the 5th grade in a Tulsa Public School.

Your participation in this effort is voluntary. If you choose to participate, completion of the enclosed surveys will only take a few minutes.

Your answers are confidential. Your name and contact information are not part of the survey. No one from the school district or your school will see or know your responses. There are no consequences if you refuse to participate.

Answers should be based on your experiences interacting with parents from either your 5th grade student's school during this past school year.

If you choose to participate, please return the completed survey directly to the researchers in the pre-paid return envelope. If you chose not to participate please return your survey blank. Questions about your rights as a research participant, concerns, or complaints about the research may be directed to the researchers at the information listed below. If you wish to talk with someone other than the researchers you may contact the University of Oklahoma Institutional Review Board at 405-325-8110 or irb@ou.edu. Thank you in advance for your time and support of this study.

Sincerely,

Dr. Curt Adams
The University of Oklahoma
Curt.Adams-1@ou.edu
918-660-3891

Kathy Curry
The University of Oklahoma
Doctoral Candidate

Directions: Please list initials of *parents of children in this school* with whom you communicate. You may list up to nine parents. If you do not know the initials of the parent, you may write the initials of the child. Next to each initial please indicate the amount of time you talk to the parent and the satisfaction with your relationship.

	Circle the number that best reflects how often you talk with the parent	Circle the number that best reflects your satisfaction with the relationship
Initials of Parent or Child	**Once in a while ... Daily**	**Not Very Satisfied ... Satisfied**
1. _____	1 2 3 4 5 6	1 2 3 4 5 6
2. _____	1 2 3 4 5 6	1 2 3 4 5 6
3. _____	1 2 3 4 5 6	1 2 3 4 5 6
4. _____	1 2 3 4 5 6	1 2 3 4 5 6
5. _____	1 2 3 4 5 6	1 2 3 4 5 6
6. _____	1 2 3 4 5 6	1 2 3 4 5 6
7. _____	1 2 3 4 5 6	1 2 3 4 5 6
8. _____	1 2 3 4 5 6	1 2 3 4 5 6
9. _____	1 2 3 4 5 6	1 2 3 4 5 6

Directions: Please list the initials of other adults (*other than parents with children in this school*) whom you talk to about educational or parenting matters.

Initials of Parent/Child	**Relationship to you**	**About how often do you talk? Once in a while ... Daily**
1. _____	_____	1 2 3 4 5 6
2. _____	_____	1 2 3 4 5 6
3. _____	_____	1 2 3 4 5 6
4. _____	_____	1 2 3 4 5 6
5. _____	_____	1 2 3 4 5 6
6. _____	_____	1 2 3 4 5 6
7. _____	_____	1 2 3 4 5 6
8. _____	_____	1 2 3 4 5 6
9. _____	_____	1 2 3 4 5 6

Please indicate how much you DISAGREE or Agree with each of the following statements.

I believe it is my responsibility to:

1. volunteer at school

___ Disagree Strongly ___ Disagree ____Somewhat Disagree ___Somewhat Agree ___Agree __Agree Strongly

2. communicate with my child's teacher regularly

___ Disagree Strongly ____Disagree ___Somewhat Disagree ___Somewhat Agree ___Agree __Agree Strongly

3. help my child with homework

___ Disagree Strongly ____Disagree ___Somewhat Disagree ___Somewhat Agree ___Agree __Agree Strongly

4. make sure the school has what it needs

___ Disagree Strongly ____Disagree ___Somewhat Disagree ___Somewhat Agree ___Agree __Agree Strongly

5. support decisions made by the teacher

___ Disagree Strongly ____Disagree ___Somewhat Disagree ___Somewhat Agree ___Agree __Agree Strongly

6. stay on top of things at school

___ Disagree Strongly ____Disagree ___Somewhat Disagree ___Somewhat Agree ___Agree __Agree Strongly

7. explain tough assignments to my child

___ Disagree Strongly ____Disagree ___Somewhat Disagree ___Somewhat Agree ___Agree __Agree Strongly

8. talk with other parents from my child's school

___ Disagree Strongly ____Disagree ___Somewhat Disagree ___Somewhat Agree ___Agree __Agree Strongly

9. make the school better

___ Disagree Strongly ____Disagree ___Somewhat Disagree ___Somewhat Agree ___Agree __Agree Strongly

10. talk with my child about the school day

___ Disagree Strongly ____Disagree ___Somewhat Disagree ___Somewhat Agree ___Agree __Agree Strongly

Please indicate how much you DISAGREE or Agree with each of the following statements.

1. I know how to help my child do well in school.

___ Disagree Strongly ____Disagree ___Somewhat Disagree ___Somewhat Agree ___Agree __Agree Strongly

2. I don't know if I am getting through to my child.

___ Disagree Strongly ____Disagree ___Somewhat Disagree ___Somewhat Agree ___Agree __Agree Strongly

3. I don't know how to help my child make good grades in school.

___ Disagree Strongly ____Disagree ___Somewhat Disagree ___Somewhat Agree ___Agree __Agree Strongly

4. I feel successful about my efforts to help my child learn.

___ Disagree Strongly ____Disagree ___Somewhat Disagree ___Somewhat Agree ___Agree __Agree Strongly

5. Other children have more influence on my child's grades than I do.

___ Disagree Strongly ____Disagree ___Somewhat Disagree ___Somewhat Agree ___Agree __Agree Strongly

6. I don't know how to help my child learn.

___ Disagree Strongly ____Disagree ___Somewhat Disagree ___Somewhat Agree ___Agree __Agree Strongly

7. I make a significant difference in my child's school performance.

___ Disagree Strongly ____Disagree ___Somewhat Disagree ___Somewhat Agree ___Agree __Agree Strongly

Directions: Please indicate the extent to which you Strongly Disagree or Strongly Agree with the statements that follow. Respond to the questions based on your interactions during this past school year with teachers and school officials from your 5th grade child's school.

	Strongly Disagree					**Strongly Agree**
1. Teachers are always ready to help.	1	2	3	4	5	6
2. Teachers have high standards for all students.	1	2	3	4	5	6
3. Teachers keep me well informed.	1	2	3	4	5	6
4. Kids in this school are well cared for.	1	2	3	4	5	6
5. Teachers always do what they are suppose to.	1	2	3	4	5	6
6. I know I will be listened to at this school.	1	2	3	4	5	6
7. I never worry about my child when he/she is at school.	1	2	3	4	5	6
8. Teachers are always honest with me.	1	2	3	4	5	6
9. Teachers at this school do a terrific job.	1	2	3	4	5	6
10. I really trust teachers at this school.	1	2	3	4	5	6

People have different feelings about school. Please mark the number on each line below that best describes your feelings about *<u>your school experiences</u>* *when you were a student.*

My school:	disliked	1	2	3	4	5	6	liked
My teachers:	were mean	1	2	3	4	5	6	were nice
My teachers:	ignored me	1	2	3	4	5	6	cared about me
My school experience:	bad	1	2	3	4	5	6	good
I felt like:	an outsider	1	2	3	4	5	6	I belonged
My overall experience:	failure	1	2	3	4	5	6	success

Background Information

1. My 5th grade child is a: _____ Boy _____ Girl

2. Please check the length of time your child has been enrolled in this elementary school

_____ first year

_____ second year

_____ third year

_____ four or more years

3. To your knowledge, does your child qualify for free or reduced lunch?

_____ Yes _____No

4. How much schooling have you completed? Please indicate your highest educational attainment.

_____ elementary school

_____ middle school

_____ graduated from high school or GED

_____ some college/technical school

_____ graduated from college

_____ graduate school

5. I consider myself to be:

_____ Asian- American

_____ Black/African-American

_____ Caucasian/Euro-American

_____ Hispanic/ Latino(a)

_____ Other ethnicity: _____ (please list)

6. How long have you lived at your current residence? _____ years, _____ month

The University of Oklahoma

OFFICE FOR HUMAN RESEARCH PARTICIPANT PROTECTION

IRB Number: 13055
Category: 2
Approval Date: June 30, 2010

July 01, 2010

Katherine Curry
Educational Admin. Curriculum and Supervision
4502 E 41st Tulsa
Tulsa, OK 74136

Dear Curry:

RE: Parent Social Network and Parent Responsibility

On behalf of the Institutional Review Board (IRB), I have reviewed the above-referenced research project and determined that it meets the criteria in 45 CFR 46, as amended, for exemption from IRB review. You may proceed with the research as proposed. Please note that any changes in the protocol will need to be submitted to the IRB for review as changes could affect this determination of exempt status. Also note that you should notify the IRB office when this project is completed, so we can remove it from our files.

If you have any questions or need additional information, please do not hesitate to call the IRB office at (405) 325-8110 or send an email to irb@ou.edu.

Cordially,

Aimee Franklin, Ph. D
Vice Chair, Institutional Review Board

Ltr_Prot_Fappv_X

660 Parrington Oval, Suite 316, Norman, Oklahoma 73019-3085 PHONE: (405) 325-8110 FAX:(405) 325-2373

701-A-2

INFORMATION SHEET FOR CONSENT TO PARTICIPATE IN A RESEARCH STUDY

My name is Kathy Curry, and I am a doctoral student in Educational Administration, Curriculum and Supervision at the University of Oklahoma. I am requesting that you volunteer to participate in a research study titled Parent Social Networks and Parent Responsibility. You were selected as a possible participant because you have a child who recently completed either the 4th, 7th or 11th grade in Tulsa Public Schools. Please read this information sheet and contact me to ask any questions that you may have before agreeing to take part in this study.

Purpose of the Research Study: The purpose of this study is to collect information on parents' social experiences in school and views about their child's education. The research question for my study is "Is there a relationship between parents' social networks and parent responsibility?"

Procedures: If you agree to be in this study, you will be asked to complete the enclosed questionnaire and mail it back to me in the preaddressed, stamped envelope that I have provided for you. The questionnaire will take approximately 15 minutes to complete.

Alternative Procedures: If you choose not to participate in the study, please simply return the incomplete questionnaire to me in the envelope provided. If you return an incomplete questionnaire, I will know that you do not wish to participate in the study.

Risks and Benefits of Being in the Study: There are no risks for involvement in the study. There are no direct benefits to you for participation in the study.

Compensation: You will not be compensated for your time and participation in this study.

Voluntary Nature of the Study: Participation in this study is voluntary. Your decision whether or not to participate will not result in penalty or loss of benefits to which you are otherwise entitled. If you decide to participate, you are free not to answer any question or discontinue participation at any time without penalty or loss of benefits to which you are otherwise entitled.

Length of Participation: The survey will take about 15 minutes to complete.

Confidentiality: The records of this study will be kept private and no one except the researchers will have access to your responses. In published reports, there will be no information included that will make it possible to identify you as a research participant. Research records will be stored securely. All records will be kept in my locked office in a locked file cabinet. Returned and completed questionnaires will be destroyed at the conclusion of the study. There will be no identifiable information to link you with your responses on the survey.

Contacts and Questions: If you have concerns or complaints about the research, I can be contacted at (918) 520-9217 or Katherine.A.Curry-1@ou.edu. Dr. Curt Adams, a professor at the University of Oklahoma, is serving as my advisor for this study. His contact information is (918) 660-3981 or Curt.Adams-1@ou.edu. You are encouraged to contact either myself or Dr. Adams if you have any questions. If you have any questions, concerns, or complaints about the research or about your rights and wish to talk to someone other than the individuals on the research team, or if you cannot reach the research team, you may contact the University of Oklahoma – Norman Campus Institutional Review Board (OU-NC IRB) at (405) 325-8110 or irb@ou.edu.

Please keep this information sheet for your records. By completing and returning this questionnaire, I am agreeing to participate in this study.

APPROVED

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