HOW SCHOOL LEADERS FACILITATE KNOWLEDGE SHARING

by

SELENA S. BLANKENSHIP

(Under the Direction of Wendy E. A. Ruona)

ABSTRACT

Today, organizations see managing knowledge as a way to nurture learning and innovation and gain competitive advantage; however, while much is being written about knowledge management, there is still much to learn. This is particularly true within the context of schools, where traditional hierarchical reporting relationships are the norm and working in isolation is a dominant aspect of the professional culture. These factors along with others make it difficult for knowledge sharing, the most critical component of knowledge management, to occur. This study explored how school leaders facilitate knowledge sharing by examining leader beliefs about knowledge sharing, the leader behaviors and strategies employed to facilitate knowledge sharing, and factors that affect a leader's capacity to facilitate knowledge sharing in a school organization. This study makes both theoretical and practical contributions to the fields of knowledge management, school leadership, and human resource development.

This was a qualitative study, using semi-structured interviews as the method of data collection. Purposeful sampling based on a reputational case selection strategy was used to select participants for the study. Ten principals from around the state of Georgia

participated in face-to-face interviews. The constant comparative method of analysis was used to analyze and interpret the data.

Four broad categories of themes emerged from the data to address the research questions: (a) leader beliefs about knowledge sharing, (b) ways leaders facilitate knowledge sharing through behaviors, (c) strategies to facilitate knowledge sharing, and (d) influences on leader capacity. The findings resulted in three conclusions. First principals consider developing relationships critical for knowledge sharing. Second, principals implement strategies related to structure, time and opportunities depending on the current level and type of knowledge sharing taking place. Third, knowledge sharing both requires change and stimulates change. These conclusions led to implications for research and practice.

INDEX WORDS: Knowledge Leadership, Knowledge Management, Knowledge Sharing, Leader Behaviors, Organizational Change, Principals, Relationships, School Culture, School Leadership

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DEDICATION

When she finished seventh grade, my grandmother's family moved from North Carolina to Georgia. She loved school, and was saddened to learn that the school in their new town only went to seventh grade. Not wanting her education cut short, my grandmother attended the seventh grade for a second time in her new town. After that year, there were no other formal educational opportunities for my grandmother. While she may not have obtained a high school diploma or college degree, she has more knowledge about gardening, cooking, and spiritual matters than any person I know. She, along with my parents, Wanda and Ernest Stanley, instilled the importance of education and learning in me at an early age. Although neither of my parents obtained higher degrees, they made certain that my brother and I took advantage of the post-secondary opportunities afforded to us that they did not have.

This dissertation is lovingly dedicated to three individuals: my grandmother, Margie Ledford Stanley; my mother, Wanda Quarles Stanley; and my late father, Ernest Stanley, who passed away shortly after I completed this manuscript.

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important for you to see me trying to achieve my dream. I hope that each of you will pursue your dreams as you grow up, and never let anyone or any obstacle hold you back.

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TABLE OF CONTENTS

LIST OF TABLES

Page

LIST OF FIGURES

Page

CHAPTER 1

INTRODUCTION

Managing knowledge in organizations has been a growing topic of interest since the early 1990's. Organizations now see managing knowledge as a way to nurture learning and innovation and gain competitive advantage; however, while much is being written about knowledge management (KM), there is still much to learn. This is particularly true within the context of schools, where traditional hierarchical reporting relationships are the norm and working in isolation is a dominant aspect of the professional culture. Contextual factors, employment trends, and other workplace issues compound the problem and make it difficult for teachers to share and create knowledge together. Paul Simon (1965) may have summed up a teacher's professional existence best: "I am a rock. I am an island. "

Similar issues make it difficult for school leaders to facilitate knowledge processes within the school. At present, principals must not only manage instructional leadership and a myriad of other administrative activities from budgeting to scheduling, but also be responsible for managing the development of the faculty and establishing collaborative learning communities (Drago-Severson, 2007). However, managing the knowledge processes of sharing, creating, and applying knowledge within the organization is critical to successful organizational learning and change efforts. These knowledge processes occur at multiple levels within the organization; therefore, how those processes, particularly knowledge sharing, are intentionally facilitated and managed

may influence the extent to which organizational learning and change occur. While we know that the senior leader's support for KM efforts is critical to its success, we do not know enough about how leaders, and school leaders in particular, enact their support and management of knowledge sharing processes. Neither do we understand what leader behaviors best facilitate knowledge sharing. This study will explore these issues around the intentional facilitation and management of knowledge sharing processes.

Background to the Problem

Over the last decade, since the introduction of the knowledge-based view of the firm (Grant, 1996; Spender, 1996), knowledge has been increasingly viewed as a strategically important resource for the organization (Grant 1996) as well as a source of competitive advantage (Nonaka, 1994; Spender 1996). More and more, KM initiatives have been recognized as an important component in an organization's overall strategy (Alazmi & Zairi, 2003; Hackett, 2000); thus, organizations are investing heavily in KM solutions. According to a 2007 report by AMR Research, "U. S. companies will spend $73B on KM software in 2007, and spending will grow nearly 16% to an average of $1,224 per employee in 2008" (McGreevy, 2007, ¶ 1) Clearly, KM has emerged as an area of strategic importance.

As increasing attention has turned to the concept of KM, two areas of focus have emerged: one on technology systems and the other on people (Gourlay, 2001). While organizations initially invested heavily in KM technology solutions, some organizations soon realized that technology systems were only a partial answer to managing knowledge. Technology systems such as data repositories, decision-support systems, and search-and-retrieve tools enable access to and acquisition of codified explicit knowledge

(Gourlay, 2001). Personalization, or people-focused strategies, in which organization members are able to interact either virtually or face-to-face, facilitate the sharing of tacit knowledge (Arumburu & Sáenz, 2007). Over the past 10 years, while technology-based KM strategies certainly have abounded, there has been a further shifting towards KM as a focus on the people and the learning and sharing processes in which they engage. It is the focus on personalization and the management of knowledge sharing processes that is of particular importance to organizations, as tacit knowledge (knowledge that is implied, but not always expressed) is arguably the most difficult type of knowledge to share and the most important to get. While there have been studies conducted exploring how learning is facilitated, particularly in learning organizations (Ellinger, 1998), we know little about how to facilitate knowledge sharing processes among individuals and collectives in organizations. What we do know from previous studies is that there are factors which positively contribute to effective KM. Among the factors cited, knowledge sharing and leadership are deemed the most critical to successful KM (Alazmi & Zairi, 2003; Cross, Parker, Prusak, & Borgatti, 2001; Fullan, 2001; Holsapple & Joshi, 2000; Jashapara, 2005; Wong, 2005).

KM in Schools

While KM initiatives have increased exponentially over the last decade in the business sector, little attention has been given to KM in the education sector. The literature on the implementation of KM in schools and school systems is sparse at best, with much of what is written focusing on mainly on technological solutions. Only in recent years have there been substantive conversations regarding KM in schools (Fullan, 2002; Petrides & Guiney, 2002), and that begin to look beyond technology solutions to

personalization strategies. Yet, from the KM literature it is clear that we do not know enough about knowledge sharing to help individuals and collectives within and among schools to share their knowledge with each other. Caldwell (2005) suggests that KM is the new field in education, which has grown out of the need for building capacity within the school to create, disseminate and utilize professional knowledge. In order to achieve our goal of building capacity to improve student learning and performance, we need to understand how knowledge processes, and in particular knowledge sharing, can be facilitated in schools.

As a result of the need to build capacity to increase student achievement, districts are becoming increasingly focused on continuous improvement efforts at both the district and school levels. Historically, schools have followed the lead of corporations in implementing continuous quality improvement initiatives such as Six Sigma, Deming's Total Quality Management (TQM), Benchmarking, and the Balanced Scorecard. While corporations are motivated to engage in continuous improvement to gain competitive advantage, school systems are motivated to engage in continuous improvement primarily due to external pressures for accountability (Elmore & Burney, 1998; Fryer, Antony, & Douglas, 2007), such as the current No Child Left Behind Act (2001). A focus on standards, accountability, and continuous improvement points to the critical need for educators to share and co-create knowledge in order to improve, rather than continue to work as "islands of excellence." As all members of the organization are involved and efforts are spread throughout the entire organization, continuous improvement efforts tap into the tacit knowledge embedded in employees and makes use of it (Fryer et al., 2007).

Because continuous improvement efforts tap into the tacit knowledge embedded in employees, there is indeed a great need to explore ways to facilitate knowledge sharing among faculty members within and across school boundaries. School leaders and faculty are recognizing the benefits of knowledge sharing and collaboration among teachers and staff, to capitalize on the tacit knowledge embedded in organizational members, but often have difficulty sustaining knowledge sharing efforts. The urgency is great for administrators and human resource development (HRD) professionals in schools to find ways for teachers to establish collegial relationships, share knowledge and collaborate in innovative ways (Bakkenes et al., 1999; Drago-Severson & Pinto, 2006).

Challenges with Knowledge Sharing in Schools

Facilitating knowledge sharing is not an easy task, however, for several reasons. First, certain aspects of the organizational culture and structure serve as an obstacle. Over the years, the tremendous demands on a teacher's time during the workday coupled with traditional organizational structures has led to the creation of a professional culture in which teachers work in virtual isolation from each other and rarely share their knowledge. Historically, schools have been siloed structures, with individuals seldom having the opportunity to share knowledge across boundaries, internally or externally. This situation, coupled with the way a teacher's work day is structured as well as the demand on a teacher's time may leave little space for conversing or collaborating with colleagues. Furthermore, time is so precious that teachers may not feel that they can afford to engage in conversations with each other. Bakkenes, de Brabander and Imants (1999) found in their study of conditions of teacher isolation that teachers avoid work-related communication if it is perceived as not offering meaningful contribution to their

work with pupils. Teachers may genuinely want to share with colleagues, but current organizational structures and lack of opportunity may prohibit meaningful conversations from occurring on a regular basis, if at all.

The culture of isolation becomes increasingly problematic as the stakes are raised with regard to student achievement. In compliance with NCLB, school systems must ensure that their classrooms are standards-based (No Child Left Behind Act, 2001). Just as schools face the challenge of making Adequate Yearly Progress (AYP) each year and must deal with the consequences when they don't, school systems also face the same challenge as they must make AYP as a district. This situation begs the need for teachers to share and create innovative practices with one another.

Second, workforce trends are a mounting challenge. The effects of working in isolation are observed in the high attrition rates among the teacher workforce (Heider, 2005) and may result in ineffective improvement efforts and lost organizational knowledge. Heller (2004) asserts that isolation is the primary reason new teachers leave the profession. Research at the national level indicates approximately 46% of teachers leave the profession within the first 5 years (American Federation of Teachers, 2007). In Georgia, the statistics are similar (Afolabi, Eads, & Nweke, 2008). Other workforce trends also contribute to the issue. The effects of the aging baby boomer generation are already beginning to be felt in schools, as teachers and administrators opt to retire early. Over the next three to five years, approximately 30% of educators will be eligible for retirement in the state of Georgia and this statistic is similar at the national level. With each retiree, there is a great potential for a career's worth of knowledge to leave the organization and the profession forever.

Third, workplace issues related to knowledge sharing also highlight this need. For the educator, the traditional models of professional development have not met teacher's learning needs (Schlager & Fusco, 2003). Most training events are disconnected from actual classroom practice and little follow-up support is provided. As new accountability mandates and curriculum standards are introduced, it has become increasingly important for teachers to share together and to collaborate and learn from one another in order to improve teaching and learning toward the goal of increasing student achievement. To this end, online teacher learning communities (Little, 2002; Schlager & Fusco, 2003) and professional learning communities of teachers have been created in, and among, schools and school districts (Dufour & Eaker, 1998; Hord, 2004; Murphy & Lick, 2004), and even hosted by other entities. While these are much needed steps toward addressing the encumbrances faced by teachers on a daily basis, more needs to be done to facilitate knowledge sharing and collaboration.

Further complicating things, most teachers have little, if any, time set aside in the school day to collaborate and discuss instructional issues with colleagues. The Professional Learning Communities (PLC) movement has gained attention over the last 10 years, but without time during the work/school day to meet and create a sustained, meaningful focus on student work; teachers rarely realize the benefit of such communities. Additionally, schools rarely invest the time and energy into creating sustainable PLCs, although several scholars (see Dufour, 1998; Hord, 2004; Murphy & Lick, 2004 for several models) have offered strategies for developing these communities. At present, little research has been undertaken to examine the sustainability and impact of PLCs in the United States, although in England, the National College for School

Leadership's Networked Learning Community (NLC) program which ran from 2002-2006 showed promising results and reports state that some of the networks are continuing to develop (Earl & Katz, 2007).

All too often, though, the term PLC becomes the new name for common planning time, or worse, the monthly faculty meeting, without any real guiding structure for focusing on student work. There is a great need for schools and school systems to find an effective way to provide structures and opportunities for educators to have focused conversations related to student learning in which they can share and co-create knowledge together. Accomplishing this task means focusing on building the capacity of the system to share knowledge, whether that system is a department, grade level, whole school, or school system.

As education reform has become an essential goal for the United States as well as other countries, the weaknesses that exist in the current system pertaining to the development and sharing of knowledge have become increasingly apparent. While the national conversation concerning schools has honed in on equity and accountability, scholars in the field of education have begun to point to an important area requiring focus, which is "the development of knowledge as a strategic capacity of school organizations to manage and enhance learning" (Kruse, 2003, p. 332). Fullan (2002) maintains building knowledge capacity is critical for all organizations, and especially for schools and school systems. The need for KM, therefore, becomes vital to create, capture, share, and leverage the organization's collective knowledge to improve performance (Balasubramanian, Nochur, Henderson, & Kwan, 1999).

The School Leader's Role in Facilitating Knowledge Processes

There is consensus that the role the leader plays in successful KM is a critical one (Crawford, 2005; Fullan, 2001; Lakshman, 2007). Further, scholars have asserted that KM is a key to building capacity for sustainable school improvement (Caldwell, 2005; Fullan, 2001). The focus on organizational improvement in education echoes the call for corporate leaders to focus on continuous improvement and innovation; however, for education the role of leadership in this process has been much less defined (Mai, 2004). Nonetheless, Mark Elgart (personal communication, 2008) states that "if you really want to change education for the better, you must begin with how it is led."

Organizational leaders play a key role in the development of a culture that facilitates organizational learning and change (Fullan, 2001). Janz and Prasarnphanich (2003) assert that organizational culture is a significant contributor to effective KM, stressing that culture determines beliefs, values, and systems that could encourage or impede knowledge creation, knowledge sharing, and decision-making. Leithwood, Jantzi, and Steinbach (1998) contend that the two primary factors in stimulating organizational learning are collaborative and collegial school cultures (elements of a professional community) and strong leadership. Organizational learning requires that teachers within schools as well as schools across districts engage in collaboration, share knowledge, and become innovative problem-solvers. Such a focus necessitates that school leaders develop competencies that facilitate the knowledge sharing process, as well as develop strategies for managing the knowledge that is created and shared.

Leadership has been identified as a critical factor influencing KM (Alazmi & Zairi, 2003; Holsapple & Joshi, 2000). Unfortunately, many leaders are left to figure out

on their own how best to facilitate knowledge sharing and creation. While there have been a few studies that have examined leadership style and knowledge sharing (Lakshman, 2007; Srivistava, Bartol, & Locke, 2006; Viitala, 2004), none of these were conducted in the education sector, and few, if any, studies have explored how leaders facilitate knowledge sharing. Without effective leadership, knowledge capacity is limited, KM initiatives will likely fail and continuous improvement may not occur.

Problem Statement

Organizations view knowledge as a source of competitive advantage. Because continuous improvement efforts tap into the knowledge embedded in employees, a great need to explore ways to facilitate knowledge sharing among organizational members exists. The extant literature on KM has revealed several factors that facilitate knowledge processes in an organization. Among the factors for successful KM identified by scholars, knowledge sharing and leadership are critical to this endeavor (Wong, 2005).

While KM initiatives in the business sector have multiplied, we know little about the strategies used for managing knowledge in the education sector. Increased accountability measures such as No Child Left Behind have made continuous improvement and innovation urgent concerns for school leaders. This focus on improvement and innovation makes the ability to share and co-create knowledge vital to organizational efforts, thus heightening the need for KM in schools. Scholars and practitioners alike have indicated this need; and have asserted that leaders play a critical role in developing and implementing a KM strategy (Fullan, 2001). Nonetheless, knowledge sharing within the context of schools is difficult because schools have traditionally operated as silos of education, rarely sharing knowledge across boundaries.

While both businesses and schools have begun to implement strategies such as virtual communities of practice and professional learning communities to encourage knowledge sharing, we still do not fully understand how knowledge sharing is facilitated, or the role that leaders play in this endeavor. We understand even less about this phenomenon in the context of schools, where working in isolation is a dominant aspect of the professional culture.

Purpose of the Study

The purpose of this study is to explore how school leaders intentionally facilitate knowledge sharing. The questions guiding this study are:

- What are leaders' beliefs about knowledge sharing?
- What leader behaviors facilitate knowledge sharing?
- What strategies do leaders employ to facilitate knowledge sharing?
- What affects a leader's capacity to facilitate knowledge sharing?

Significance of the Study

Generally, this study makes significant contribution to the theory base on leadership for knowledge sharing and KM. Few, if any, studies have been conducted to determine leader behaviors that facilitate knowledge sharing and KM, particularly in K-12 settings. Studies in the existing literature (Lakshman, 2007; Leithwood, Jantzi, & Steinbach, 1999; Silins, Mulford, & Zarins, 2002) have focused more on leadership style than actual leader behaviors. Through an in depth study of how leaders facilitate knowledge sharing, we may be able to better understand what leader behaviors are needed for effective knowledge sharing and KM, as well as organizational learning. To

date, only a small number of studies have explored these processes and relationships (notably, Lakshman, 2007).

As mentioned previously, Janz and Prasarnphanich (2003) assert that organizational culture is a significant contributor to effective KM. Through this study, we may learn more about how the professional culture impacts the leader's ability to facilitate knowledge sharing, and/or teachers' ability and willingness to share knowledge. This study may lead to knowledge that will help school leaders change the culture of isolation that may have developed in their organization.

More specifically, this research contributes to the fledgling literature on KM theory in schools as well as school leadership theory. With increased accountability measures and heightened standards for staff and students, organizational learning, development, and change will be a major focus for school districts over the next few years (Mai, 2004). This study should provide information that will allow current or aspiring leaders to be better prepared to contribute to and improve organizational learning, as well as become better managers of the organization's knowledge assets. An increased understanding will address the gap in the research literature pertaining to how leaders facilitate and manage knowledge sharing processes.

Finally, this study will make important practical contributions. The research in the area of leadership for knowledge sharing is extremely limited and is of particular importance to the human resource development (HRD) profession. Over the past decade there has been a growing realization that the integration of KM with other primary functions of HRD professionals (training, performance improvement, and organizational development) should be of central concern to the field (Ardichvili, 2002; Toracco, 1999).

This research contributes to the HRD literature by providing a deep analysis of how leaders capitalize on opportunity and overcome the barriers to facilitate knowledge sharing in a profession traditionally characterized by isolation. This analysis may help human resource developers within organizations, and specifically within school systems, better understand ways they can assist leaders in facilitating knowledge sharing activities. Further, this analysis may assist HRD professionals in their ability to move from traditional staff development models toward more job-embedded professional learning and facilitation of learning communities among organization members. Finally, by studying how leaders facilitate knowledge sharing within the context of schools, the information yielded may be used to enhance leadership preparation and development programs in local school systems as well as institutions of higher education.

Definitions

To enhance the comprehension of this study, the following terms are defined.

1. **Continuous Improvement** – the seeking of small improvements in processes or products, with the objective of increasing quality and reducing waste
2. **Data –** raw facts and figures
3. **Information –** processed data
4. **Knowledge**- justified belief that increases an entity's capacity for effective action (Huber, 1991); “a fluid mix of framed experience, values, contextual information, and expert insights that provides a framework for evaluating and incorporating new experiences and information. It originates in and is applied in the minds of knowers” (Davenport & Prusak, 1998, p. 5)

5. **KM** – "an organizational capability that allows people in organizations, working as individuals or in teams, projects, or other such communities of interest, to create, capture, share, and leverage their collective knowledge to improve performance" (Balasubramanian et al., 1999, p. 145).
6. **Knowledge Sharing**- a complex and dynamic exchange occurring through a relationship between two actors. This process involves both "enquiring and contributing to knowledge through activities such as learning-by-observation, listening and asking, sharing ideas, giving advice, recognizing cues, and adopting patterns of behavior" (Bosua & Scheepers, 2007, p. 95).
7. **Organizational Learning** – processes through which learning occurs at multiple levels of an organization that results in organizational knowledge and/or action
8. **School Leader** – senior administrator at the school level, usually referred to as the principal
9. **Tacit Knowledge –** knowledge that is intuitive and unarticulated; largely acquired through practical experience in relevant context (Lam, 2000)
10. **Explicit Knowledge –** knowledge that is easily articulated and easily codified

Chapter Summary

This chapter provided an overview of the research gap relative to how school leaders intentionally facilitate knowledge sharing in their organizations. Background information related to the study was highlighted and pointed to the gap which this study addresses. The purpose of the study, research questions, and significance of the study were outlined.

CHAPTER 2

REVIEW OF THE LITERATURE

The purpose of this study is to explore how school leaders facilitate knowledge sharing. Specifically, this study examines leader beliefs about knowledge sharing, the leader behaviors and strategies employed to facilitate knowledge sharing, and factors that affect a leader's capacity to facilitate knowledge sharing in a school organization. In order to provide the background for this study, four areas of literature were reviewed. The first section reviews the conceptualization of knowledge in organizations. Section two reviews and synthesizes the literature on KM models, process cycles, and strategies. Section three is a review of knowledge sharing as a critical component of KM. Section four reviews the literature on knowledge leadership and the sparse literature on leadership for knowledge sharing.

Knowledge in Organizations

To understand how knowledge is managed in organizations, it is important to have a conceptualization of knowledge itself. Research on knowledge in organizations has been reviewed, most notably, by Blackler (1995), Spender and Grant (1996), and Nonaka and Takeuchi (1995). Although knowledge has been defined and characterized in multiple ways, the debates rage over what knowledge is and no clear consensus has emerged. Sveiby (1997) contends that the confusion between knowledge and information has caused managers to sink billions of dollars in information technology ventures that have yielded marginal results. This section reviews various perspectives on knowledge as

found in the literature, as well as the concepts of individual, group, and organizational knowledge.

Perspectives on Knowledge

Different perspectives on knowledge exist among scholars and practitioners. Frequently, knowledge has been perceived as an object, defined as "justified true belief" (Nonaka, 1994). Brown, Collins and Duguid (1989) assert that this perspective views knowledge as an integral, self-sufficient substance, theoretically independent of the situations in which it is learned and used. It assumes that knowledge can be codified and separated from the minds of people. In keeping with Alavi and Leidner's (2001) distinction between information and knowledge, this perspective could be interpreted to be describing information.

The most widely used taxonomy of knowledge is that of distinguishing between tacit and explicit knowledge. While Polanyi (1962, 1967) is widely credited with first bringing to light this distinction, his work has been interpreted by many scholars, most notably Nonaka (1994). Nonaka's interpretation takes Polanyi's (1962) concept that all knowledge is personal in nature, and explicates dimensions of *tacit* and *explicit* knowing in organizations. *Tacit knowledge* is hard to formalize and communicate and is rooted in action, involvement and commitment in a specific context (Nonaka, 1994). This type of knowledge is comprised of both cognitive elements, such as mental models, beliefs and viewpoints; as well as technical elements consisting of skills and 'know-how' that apply to a specific context (Alavi & Leidner, 2001). Grant (1996) asserts tacit knowledge is revealed through its application. Further, if one takes the view that tacit knowledge is difficult if not impossible to codify and can only be observed through its application and

acquired through practice, its transfer between people is slow, costly, and uncertain (Kogut & Zander, 1992). *Explicit knowledge*, on the other hand, is knowledge that is easily codified and articulated with natural language. Tacit knowledge is sometimes referred to as 'know-how' and explicit knowledge as 'know-that' (Brown & Duguid, 2001). Counter to Nonaka and Takeuchi's (1995) claim that knowledge creation is a spiraling process of tacit-explicit knowledge conversion, Cook and Brown (1999) assert that tacit and explicit forms of knowledge are complementary yet distinct forms, "as each one does work the other cannot; and…one form cannot be made out of or changed into the other" (p. 384).

Alavi and Leidner (2001) identify five additional perspectives on knowledge: (1) as a state of mind, (2) as an object, (3) as a process, (4) as a condition of having access to information, and (5) as a capability. The position that knowledge can be viewed as a state of mind focuses on individuals being able to expand their personal knowledge and apply it to organizational needs. Only people can 'know' and convert 'knowing' into action, and it is the act of thinking that can transform information into knowledge and create new knowledge (McDermott, 1999). If knowledge is viewed as an object, it is seen as something that can be stored and manipulated (Zack, 1999). The view that knowledge is a process focuses on the application of expertise (Zack). Those who perceive knowledge as a condition of access to information (McQueen, 1998) believe that organizational knowledge must be organized to facilitate access and retrieval, which can be seen as being related to the view that knowledge is an object. Carlsson, El Sawy, Eriksson, and Raven (1996) posit that knowledge can be viewed as a capability with potential for influencing future action.

In addition to the six perspectives previously provided, Boer (2005) identifies an additional perspective which views knowledge as a social practice (Brown & Duguid, 1991). Knowledge is considered to be embedded in a community rather than just in one individual. It suggests knowledge does not belong to any one individual and is very much context dependent (Brown & Duguid, 1991; Lave & Wenger, 1991; Wenger, 1998). This perspective views knowledge as an ongoing accomplishment (Boer, 2005).

Carlsson et al. (1996) assert that different perspectives on knowledge lead to different foci for KM. In other words, if knowledge is a process, then the KM focus would naturally be on knowledge flow and the creation, sharing and distribution of knowledge (Alavi & Leidner, 2001). When considered in conjunction with the view of knowledge as a social practice, KM from this perspective would focus on the flow, creation, sharing and distribution of knowledge within the context of the social structures of the organization. In the study I am proposing, it is possible that school leaders may view knowledge from different perspectives, which may influence the strategies they employ to facilitate knowledge sharing. For this reason, an awareness of all these perspectives is important.

Knowledge at Multiple Levels

Knowledge resides at multiple levels within the organization. The most basic of these is the individual level. One can define individual knowledge as the "part of an organization's knowledge which resides in the brains and bodily skills of the individual" (Lam, 2000, p. 491). Although individuals constitute only one level of the organization, the sharing of individual knowledge is requisite to the sharing, creation, dissemination or management of knowledge at any other level in the organization (Ipe, 2003). Nonaka and

Takeuchi (1995) assert that organizations cannot create knowledge without individuals, and without the sharing of individual knowledge with other individuals and groups, the knowledge is likely to have limited impact on organizational effectiveness. Additionally, the organizational learning literature acknowledges that knowledge in organizations resides within individuals. Huber (1991) asserts that because cognition is a function of the individual, knowledge can only reside at the individual level. Similarly, Tsoukas and Vladimirou (2001) in their work conceptualizing organizational knowledge, highlight the importance of the individual in the knowledge creation and sharing processes.

Knowledge also resides at the group level. The body of literature on communities of practice (Brown & Duguid, 1991; Lave & Wenger, 1991; Wenger, 1998) highlights the concepts of communal knowledge and knowing in practice. In these situations, knowledge is created and shared through mutual engagement in a shared practice (Wenger) and becomes knowledge that is not possessed solely by any one individual, but by the group as a whole. In Thompson and Fine's (1999) review of shared cognition, emotion and behavior, the authors assert the importance of group level analysis of the member's social interactions through which they construct collective meaning. Cannon-Bowers and Salas (2001) also acknowledge the group level of knowledge when they suggest that shared cognition explains differences between effective and ineffective teams by suggesting that in effective teams, members have similar or compatible knowledge, and that they use this knowledge to guide their (coordinated) behavior.

Finally, knowledge can also reside at the organizational level. While organizational learning is a process that has been contested by some scholars from the standpoint that organizations do not have cognitive ability and therefore cannot learn,

many acknowledge that organizational knowledge is a valid construct. Tsoukas and Vladimirou (2001) conceptualize organizational knowledge as "the capability members of an organization have developed to draw distinctions in the process of carrying out their work, in particular concrete contexts, by enacting sets of generalizations whose application depends on historically evolved collective understandings" (p. 973). De Long and Fahy (2000) assert that confusion over knowledge and KM in organizations arises because of a lack of recognition of three types of knowledge: (a) human knowledge, which the researchers define as being largely tacit and residing in the individual; (b) social knowledge, defined as knowledge that exists in the relationships between people and groups and is collective, largely tacit, and is more than the sum of the knowledge of individuals in the group; and, (c) structured knowledge, which is explicit, rule-based, embedded in the organization's routines, systems, processes and tools and is the knowledge that the researchers state resides at the organizational level. Improving knowledge creation and use at the group and organization levels is the primary focus of KM (De Long & Fahy).

Section Summary

There is no apparent agreement on the definition of knowledge. Consequently, scholars have examined knowledge from various perspectives in their attempts to understand what knowledge is. How organizations view knowledge will determine to some degree how organizations manage the knowledge that resides at the individual, group and organizational levels. The perspective of knowledge as being largely tacit or explicit, coupled with De Long and Fahy's (2000) three types of knowledge in organizations (human, social, and structured) are particularly important to this study

because the purpose is to understand how organizational leaders facilitate the sharing of *both* tacit and explicit knowledge and various levels of the organization. For the purposes of this study, knowledge is defined as "a fluid mix of framed experience, values, contextual information, and expert insights that provides a framework for evaluating and incorporating new experiences and information. It originates in and is applied in the minds of knowers" (Davenport & Prusak, 1998, p. 5).

Knowledge Management

KM has been conceptualized a number of ways. Initially, KM focused solely on technological systems. Now, the term KM encompasses not only technology solutions for storage and retrieval of codified knowledge, but also includes technology systems that enhance the creation and sharing of knowledge as well as personalization strategies that incorporate community and network structures that facilitate the sharing of tacit knowledge. It is this more holistic view of KM that incorporates the systems and strategies for creating, sharing, codifying and disseminating both tacit and explicit forms of knowledge. Balasubramanian, Nochur, Henderson, & Kwan's (1999) definition of KM, which is "an organizational capability that allows people in organizations, working as individuals or in teams, projects, or other such communities of interest, to create, capture, share, and leverage their collective knowledge to improve performance" (p. 145) guides this study. This section reviews the literature on KM. The review is organized into three subsections: the evolution of KM, perspectives on KM, and critical success factors in KM.

Evolution of KM

KM has its roots in multiple disciplines including sociology, psychology, information systems, organization theory, organization behavior, strategic management, and economics, to name several (Dalkir, 2005; von Krogh, 2002), and thus many definitions have developed over time. Dalkir (2005) states, "the multidisciplinary nature of KM is a double-edged sword" (p. 6). While multidisciplinary roots make the understanding and practice of KM accessible to practitioners from many fields, such diversity presents challenges as well. Because numerous approaches to KM have surfaced and there are both multiple conceptualizations of knowledge and needs of an organization, there is little consensus on the definition of KM (Kakabadze, Kakabadze, & Kouzmin, 2003; Wiig, 1997). Sveiby (1996) asserts that KM is the act of creating value from knowledge; yet, how one defines knowledge determines how one manages it. Indeed, most agree KM will look different in every organization based on their particular context and needs.

Because of these multi-disciplinary roots, it is important to note some of the earlier works that influenced the development of the concept of KM. In the 1960's and 1970's, the term "KM" was not in use; however, *diffusion and utilization* of knowledge was explored and researched. In 1962, Everett Rogers published *Diffusion of Innovations,* a book that brought to the forefront Rogers' work on the way innovations are adopted by individuals in society (Rogers, 2003). Ronald Havelock's (1969) book, *Planning for Innovation through Dissemination and Utilization of Knowledge*, offered a framework for understanding the processes of innovation, dissemination, and knowledge utilization.

Also during this period according to Dalkir (2005), Peter Drucker coined the term *knowledge worker*, eventually giving rise to the study of a new type of work and worker.

During the 1980s there began to be a clear focus on knowledge in the business world. During this decade, the term "KM" was introduced (Wiig, 1999); yet, even though the concept of KM was talked about in organizations, little development of the idea occurred. Interest in KM increased exponentially in the 1990s however. Peter Drucker, Peter Senge, Ikujiro Nonaka, Hirotaka Takeuchi, Karl Sveiby, Verna Allee, Hubert Saint-Onge, Thomas Davenport, and Larry Prusak are some of the important individuals associated with helping to define the foundations of KM during this decade. The early KM strategies, or what some scholars refer to as first generation KM (Snowden, 2002), focused on knowledge as a thing or product to manage. With the proliferation of internet and intranet technologies, businesses invested heavily in information technology (IT) strategies to inventory their best practices and lessons learned.

Another set of KM strategies developed as organizations realized that the IT-based KM strategies that they implemented were not being used (Dalkir, 2005). This second wave of KM viewed KM as a process involving human and cultural dimensions. During this time organizations and researchers began to explore the socially situated nature of learning and knowledge in organizations in the context of communities of practice (Brown & Duguid, 1991, 2001; Lave & Wenger, 1991; Wenger, 1998). The concept of a 'learning organization' (Senge, 1990; Watkins & Marsick, 1993) gained attention as scholars asserted that organizations must learn in order to maintain a competitive advantage. The relationship of KM, learning organization, and organizational learning will be discussed in a later section. It is important to note that while some

scholars define these stages of KM as generations or ages, and denote distinct time periods (Snowden, 2002), others believe that the two approaches may have developed in parallel and were in concurrent use, and will continue that way (Firestone & McElroy, 2003).

According to Snowden (2002), we are now entering into the third generation of KM in which KM is focused on context, narrative, and content management. In this phase, Dalkir (2005) states "the challenges are to manage content effectively, facilitate collaboration, help knowledge workers connect and find experts, and assist the organization to learn and make decisions based on complete, valid and well-interpreted data, information, and knowledge" (pp. 20-21). Firestone and McElroy (2003) similarly base their Knowledge Life Cycle on Complex Adaptive Systems Theory (CAST), but argue that this is only the second generation of KM, not the third. CAST has its roots in General Systems Theory (von Bertalanffy, 1972), which challenges the notion of mechanistic ideas of organization and introduces the concept of open systems that interact with the environment. While technology-based KM strategies certainly abound, there is also a focus on the people and the learning and sharing processes in which they engage. Table 1 summarizes the evolution of KM, and incorporates information based on the work of Firestone and McElroy (2003), Mentzas (2004), Snowden (2002), and Sveiby (1996).

Table 1

Evolution of KM

	IT Focused KM	People Focused KM	Next Generation KM
Discipline Roots	• Systems Theory • Computer Science • Business Process Re-engineering (BPR) • Artificial Intelligence	• Organizational Theory • Sociology • Psychology • Philosophy	• Complex Adaptive Systems Theory
Focus	Nature of knowledge as product or object	Nature of knowledge as process	Nature of knowledge as both product *and* process
People	Individual orientation; Workers rewarded for use of and contribution to KM system	Creative team orientation; workers rewarded for group performance and knowledge sharing between professionals	Individuals empowered to self-organize, but remain a part of the corporate hierarchy
Strategy	Exploitation of codified knowledge; linking people with technologies that capture and disseminate knowledge	Exploitation and empowerment of team knowledge; creation of networks to link people to facilitate sharing of tacit knowledge	Leverage knowledge assets through multiple networks to connect data, information, and people through communities and repositories; self-organization and self-management of knowledge
Technology	Heavily invested in IT, usually in the form of data repositories, and search and retrieval tools	Moderately invested in IT, usually through internet communications technologies (ICT) such as discussion boards, collaboration tools, etc.	Makes use of various types of technology depending on the type of knowledge and the context in which it is needed

The current research on KM has focused on identifying critical success factors and barriers to KM processes (Al-Alawi, Al-Marzooqi, & Mohammed, 2007; De Long & Fahey, 2000; Ipe, 2004; Liebowitz, 1999), and the impact of certain factors such as organizational rewards, organizational culture, and employee motivation have on knowledge sharing, KM, and firm performance (Alavi, Kayworth, & Leidner, 2006; Bartol & Srivastava, 2002; Choi, 2003; Holsapple & Joshi, 2000; Lin, 2007). Research on leadership for KM and knowledge sharing is emerging, but limited.

While research continues to provide conceptual models and descriptions of KM in practice, there are also scholars who have offered critiques of KM. McAdam and McCreedy's (1999) critique of KM models assigned the models to one of three categories: knowledge category, intellectual capital, and socially constructed. Based on their critique, McAdam and McCreedy put forth a new model, which they posit is a more holistic approach and provides balance between scientific and socially constructed knowledge, an approach which is lacking in the two relatively "siloed" models they reviewed. Their critique also brings into question the sequential nature of KM models, and suggests that KM is a recursive process. Likewise, Elmholdt (2004) suggests that an overly technological focus in KM may be counterproductive to knowledge creation and sharing, based on his case study of a Danish software production company's KM strategy. Both critiques put forth the idea that a balanced approach, one that considers both explicit and tacit knowledge, as well as the technological and social processes involved in creating, capturing, and sharing the knowledge, is the better approach to KM.

Perspectives on KM

The evolution of KM from its multidisciplinary roots has given rise to numerous theories and perspectives on KM. This reality, coupled with the exponential growth of KM research and practice presents challenges in developing a coalescent theory base of this nascent field. In response, various researchers have developed taxonomies, or classification systems; theoretical models, and process models in attempts to provide an organizing framework for thinking about KM. However, even this provides a challenge as there is little unifying language with which to discuss KM from a theoretical perspective. There are literally dozens of KM "models," "taxonomies," "typologies,"

"cycles," and "perspectives" from which to choose. For the purposes of this study, the term "perspectives on KM" is used as an overarching label, in which the discussion of the various perspectives, or approaches to theorizing KM are examined in three broad categories. This section will review and synthesize the literature on KM taxonomies, KM theoretical models, and the KM process. An understanding of this literature is foundational to a clear understanding of the integral role knowledge sharing has in successful KM.

KM taxonomies. As KM strategies have evolved, scholars have developed classification systems of KM in an effort to aid organizations in their selection of KM approaches, as well as to provide an organizing framework for the diverse KM theories that have developed. According to Ebscohost Databases and Google Scholar, some of the most cited taxonomies include

- McAdam and McCreedy's (1999) classification of intellectual capital models, socially constructed models, and knowledge categorization models;
- Earl's (2001) seven "schools" of KM strategies, which are divided into three broad categories of technocratic, economic, and behavioral;
- Takeuchi's (2001) three approaches of measuring knowledge, managing knowledge, and creating knowledge;
- Alvesson and Karrmann's (2001) four orientations of KM: KM as extended libraries, as communities, as normative control, and as enacted blueprints; and
- Kakabadse, Kakabadse, and Kouzmin's (2003) five perspectives of KM: philosophy, cognitive, network, community, and quantum.

Of these various classification of KM models, Kakabadse et al.'s (2003) framework moves beyond the previous categorizations to consider the focus and aims of KM as well as the treatment of knowledge. As organizations look to develop a KM strategy, a critical aspect of their decision-making rests upon the organization's view of knowledge. This is an important point because different treatments of knowledge require different KM approaches (Carlsson et al., 1996).

Each perspective in Kakabadse, Kakabadse, and Kouzmin's (2003) framework differs in the treatment of knowledge, the focus, the primary aims of the model, the primary outcomes, and the role of IT based tools, all important considerations for an organization embarking on the development of a KM strategy. The philosophical model focuses on ways of knowing, with its primary aim being emancipation and primary outcome being new knowledge. The cognitive models differs, in that its focus is knowledge capture and storage, its primary aim to codify and capture explicit knowledge and information, and its primary outcome the standardization and routinization of knowledge. The network model focuses on knowledge acquisition, with its primary aim being competitive advantage. The primary outcome for the network model is awareness of external development. The community model specifically focuses on knowledge creation and application with the primary aim being promoting knowledge sharing. The primary outcome of the community model is application of new knowledge. Finally, the quantum model focuses on solving paradox and complex issues, with the primary aim being learning systems and the primary outcome creation of multi-reality. Table 2 presents five KM perspectives according to Kakabadse, Kakabadse, and Kouzmin (2003).

Table 2

Five KM Perspectives (Kakabadse, Kakabadse, & Kouzmin, 2003)

	Philosophy-based Model	**Cognitive model**	**Network Model**	**Community Model**	**Quantum Model**
Treatment of knowledge	Knowledge is "justified true belief"	Knowledge is objectively defined and codified as concepts, facts	Knowledge is external to the adopter in explicit and implicit forms	Knowledge is constructed socially and based on experience	System of possibilities
Dominant metaphor	Epistemology	Memory	Network	Community	Paradox
Focus	Ways of knowing	Knowledge capture and storage	Knowledge Acquisition	Knowledge creation and application	Solving paradox and complex issues
Primary Aim	Emancipation	To codify and capture explicit knowledge and information – knowledge exploitation	Competitive Advantage	Promote knowledge sharing	Learning systems
Critical lever	Questioning, reflecting, debating	Technology	Boundary Spanning	Commitment and trust	Technology
Primary Outcomes	New knowledge	Standardization, routinization, and recycling of knowledge	Awareness of external development	Application of new knowledge	Creation of multi-reality
Role of IT-based tools	Almost irrelevant	Critical integrative mechanism	Balancing, interactive mechanism	Supporting integrative mechanism	Critical – Knowledge centric

These perspectives do not represent a continuum, but it is reasonable to assume that most organizational KM strategies fall into the cognitive, network, or community perspectives based on the focus, aims and outcomes of each perspective.

Theoretical models for KM. Managing knowledge requires an organizing framework, or theory within which the KM cycle operates. Small and Sage (2006) review the literature on both KM and knowledge sharing and observe that there are many descriptive KM models and frameworks that have been developed to guide KM initiatives. Dalkir (2005) presents what he considers to be the major theoretical models of KM. These models are identified as such because they meet three criteria: (1) they present a holistic approach to KM; (2) they have been reviewed, critiqued, and discussed

extensively in the KM literature by both scholars and practitioners; and (3) the models have been implemented and field tested with respect to validity and reliability. While there are certainly many other models of KM in existence, these models are summarized here as they present the holistic view of KM that is important for this study. The models of von Krogh and Roos (1995), Choo (1998), Nonaka and Takeuchi (1995), and, Intelligent Complex Adaptive Systems (ICAS) (Bennet & Bennet, 2004) have been reviewed, critiqued, and field tested, and help us to have an understanding of how KM works.

The von Krogh and Roos (1995) Model of Organizational Epistemology stresses that knowledge resides in both the minds of individuals and the relations they form with other individuals. From a connectionist approach, which maintains that there can be no knowledge without a knower, this model of KM recognizes that knowledge is embodied. Von Krogh and Roos state that organizational knowledge is highly dynamic, fragile, and developed through knowledge connection, which is the potential for individuals to convey messages about their observations. Further, in order for knowledge to connect in organizations, two conditions must be met: there must be an availability of relationships, and there must be an organizational self-description. Relationships, both informal and structural, are the vehicle through which communication flows and organizational knowledge can develop. And, without self-description, or an organizational identity to understand what passes for knowledge in the organization, a knowledge connection cannot be made. The von Krogh and Roos model highlights the importance of both individual and social knowledge, and the relationship structures in organizations.

Choo's (1998) sense-making KM model focuses on how knowledge and action interact through sense-making, knowledge creating and decision making. Choo combines ideas from Weick (2000), Nonaka and Takeuchi (1995), and Simon (1957), respectively, to develop a model that proposes how information is selected, processed through action to become knowledge, and then used to inform decisions. In the sense-making stage, an organization uses information to understand its changing environment. In the knowledge creation stage, organization members transform personal knowledge into collective knowledge, which produces a wider array of potential choices when making organizational decisions. The strength of the Choo model is that it extends previous conceptualizations of KM to include the decision-making process.

Nonaka and Takeuchi's (1995) knowledge spiral model consists of two types of knowledge (tacit and explicit) interacting through four modes: (1) socialization; (2) externalization; (3) combination; and, (4) internalization. Knowledge sharing is an essential component of Nonaka and Takeuchi's model. In the *socialization* mode, tacit knowledge of one member is converted to tacit knowledge of another member as members share "experiences and mental models" (p. 71). Mentoring and apprenticeship interactions are examples of socialization. *Externalization* occurs as members begin to articulate tacit knowledge and make it explicit through dialogue and joint reflection. Using metaphor and analogy sometimes helps members to make the tacit knowledge explicit. The *combination* mode takes place as members meld newly created knowledge and existing knowledge from other parts of the organization, which takes the form of new products, services or systems. The *internalization* mode occurs as members learn by

doing. Newly acquired behavior and understanding is embedded and mental models are revised.

The knowledge spiral is not a sequential process, but is rather a dynamic interaction of knowledge flow, sharing, and conversion at the individual, group, and organizational levels. One critique of Nonaka and Takeuchi's model is that although it is a robust model, it does not offer sufficient explanation of all the stages involved in managing knowledge. This is particularly true with regard to utilization of both tacit and explicit knowledge for decision making (Dalkir, 2005).

Complex Adaptive Systems Theory (CAST) is also beginning to be used as a basis of theories of KM. While relatively new theories, they show "both an evolution and return to systems thinking roots in the KM world" (Dalkir, 2005, p. 72). One such theory, the Intelligent Complex Adaptive System (ICAS) Theory of KM (Bennet & Bennet, 2004) views the organization as being composed of individuals who are empowered to self-organize but who remain part of the overall corporate hierarchy. From this perspective, the individual and his or her competency, capacity, and learning is emphasized. Knowledge assets are leveraged through the individual's various networks within the system. The ICAS KM model can best be described as emergent and self-organizing.

KM cycles. The taxonomies previously discussed provide an organizing framework for KM approaches. The theoretical models reviewed provide a foundation for understanding of the development of knowledge from a holistic perspective. The KM cycles, however, provide a conceptualization of how knowledge becomes a valuable asset for an organization (Dalkir, 2005). Just as there is a lack of consensus on a definition of

KM, there are many variations of the KM cycle, and some of the phases overlap from one to another. The major approaches to the KM cycle were developed by several scholars, such as Wiig (1993), Meyer and Zack (1996), McElroy (2003), and Buckowitz and Williams (2000). While each of these varies on the phases within the KM cycle, there are similarities and overlaps among them with the common phases of the cycles being capturing, creating, codifying, sharing, accessing, applying and reusing knowledge (Hackett, 2000; Dalkir, 2005). From these four major approaches, Dalkir (2005) developed an integrated approach to the KM cycle. Dalkir's integrated KM cycle has three major stages: knowledge capture/creation, knowledge sharing and dissemination, and knowledge acquisition and application. As the KM cycle progresses, knowledge is assessed, contextualized and updated. Figure 1 outlines Dalkir's Integrated KM Cycle.

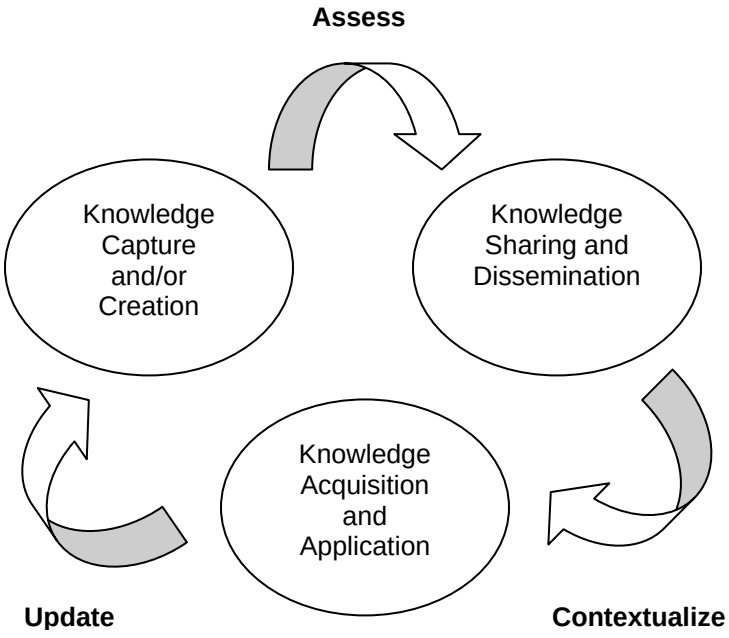

Figure 1. Dalkir's (2005) Integrated KM Cycle

In the first phase of the Integrated KM cycle, there are two possible activities taking place. One of the activities is concerned with the capture or identification of existing knowledge, whereby tacit knowledge is captured or elicited and explicit knowledge is organized or coded (Dalkir, 2005). The other is the creation of new, innovative knowledge that the organization knows it needs, but also knows it doesn't have. Dalkir asserts that in the majority of organizations, explicit knowledge merely represents the tip of the iceberg. Therefore, capturing the experience and expertise of individuals in the organization, the largely tacit knowledge embedded and embodied in employees, becomes an important challenge to meet.

Once knowledge has been created or captured and codified, and assessed for organizational value, it should be shared and disseminated. Knowledge sharing and dissemination are related processes. Dissemination in KM refers to the spreading of knowledge throughout the organization, whereas knowledge sharing implies a more complex, dynamic process, and is a link between communication and learning (Boer, 2005). According to Dalkir (2005), although approximately 80-85 % of an organization's information is tacit knowledge, one estimate found that 90% of a company's accessible information is used only once. People are vital conduits of information and knowledge (Cross & Parker, 2004). Therefore, nurturing communities of practice and providing opportunities for social interactions and networking are critical to knowledge sharing. As knowledge sharing is a major focus of this study, a more thorough review of the construct and its important role in KM follows in later sections.

Knowledge is contextualized as the transition occurs from knowledge sharing and dissemination to knowledge acquisition and application (Dalkir, 2005). In this last phase

of the integrated KM cycle, acquisition refers to the act of understanding the knowledge that has been shared and disseminated, and application refers to using the knowledge that has been acquired. In thinking about Nonaka and Takeuchi's (1995) knowledge spiral model, the knowledge acquisition and application phase has similarities to the internalization mode of the knowledge spiral, as both deal with the understanding and use of knowledge (Dalkir, 2005). The knowledge acquisition and application phase feeds back into knowledge capture/creation to update knowledge content.

Critical Success Factors for KM

While some scholars have attempted to classify KM frameworks or strategies, others have explored KM processes in organizations, identifying critical processes and factors that facilitate or inhibit successful KM. As organizations are complex systems, there are many factors that can influence an organization's ability to manage its knowledge. Those factors may enable KM; alternately, such factors may present a barrier to KM. Holsapple and Joshi (2000) identified through a review of the literature a broad range of factors influencing KM: culture, leadership, technology, organizational adjustments, evaluation of KM activities or resources, administration of knowledge activities or resources, employee motivation, and external factors. From this work, they conducted research using a Delphi approach to develop a framework that identifies and characterizes KM influences into three types: managerial influences, resource influences and environmental influences. The authors state that they believe managerial influences are most apt to be under the control of persons responsible for KM initiatives. This is evidence of the importance of the leader's role in KM efforts.

Similarly, Alazmi and Zairi (2003) reviewed the literature and identified nine categories of critical success factors for KM. Those were: training, sharing, culture, knowledge transfer, top-management support, technology infrastructure, knowledge creation, knowledge strategy, and knowledge infrastructure. It is important to note that Alazmi and Zairi's review identified four similar areas to those mentioned in Holsapple and Joshi's (2000) study to be critical to the success of KM initiatives; namely, culture, leadership, technology and KM activities.

Wong's (2005) literature review of critical success factors for KM in small and medium enterprises (SMEs) is most pertinent to this study, as the size of schools and many school systems would place them in this category. Wong reviewed literature from 1999-2004, and based on his analysis, proposed eleven critical success factors (CSF) for KM in SMEs. Those 11 CSF are:

- management leadership and support;
- culture;
- information technology;
- strategy and purpose;
- measurement;
- organizational infrastructure;
- processes and activities;
- motivational aids;
- resources;
- training and education; and
- human resource management.

Wong's review underscores the important roles leadership, culture, KM processes and activities, and information technology play in successful KM.

Further study of several of these CSF has been undertaken. Mason and Pauleen (2003) explored middle managers' perceptions of KM implementation and found that the key barriers to KM implementation among their participants were organizational culture and leadership. Oliver and Kandadi (2006) conducted six in-depth case studies to identify the various factors affecting a knowledge culture. The study identified 10 major factors affecting knowledge culture in organizations. These include leadership, organizational structure, evangelization, communities of practice, reward systems, time allocation, business processes, recruitment, infrastructure and physical attributes.

KM in Schools

Because the national conversation concerning schools has focused primarily on equity and accountability an important trend has emerged, which is "the development of knowledge as a strategic capacity of school organizations to manage and enhance learning" (Kruse, 2003, p. 332). KM is a concept that is gaining acceptance in the education sector (Petrides & Nodine, 2003). KM in the field of education has evolved in a similar manner to KM practices in private sector organizations, in that initially technology interventions were used solely for the purposes of information management. Stevenson (2000) called for policy makers to advance student learning through KM related to best practices and data-driven decision making. In short, Stevenson implored policy makers and stakeholders to develop the technological infrastructure for school systems to house collections of instructional best practices and a comprehensive data

repository to better inform decision making at the school and classroom level. While this is a necessary component of KM, it should not be the whole solution.

Petrides and Nodine (2003), in their monograph, provide a definition for KM in education, which can be thought of as "a framework or an approach that enables people within an organization to develop a set of practices to collect information and share what they know, leading to action that improves services and outcomes" (p. 16-17). A balanced approach to KM, using people, processes, and technologies is important to effectively manage knowledge (Petrides & Nodine).

Fullan (2002) asserts that knowledge building is a critical capacity for organizations, especially schools and school systems; yet, despite being in the learning business, they tend to typically be poor knowledge sharers. He encourages schools and school systems to nurture social processes that facilitate knowledge creation and sharing. Some efforts to toward this end are evident in schools and school systems, although it is rarely explicitly identified as KM. Petrides and Guiney (2002) assert that historically most school districts have not employed the personnel necessary to plan, design, and implement the most basic information systems, much less focus on KM.

Recently, due to increased demands for accountability and a focus on continuous improvement, schools and systems are engaging in activities that could be considered KM, but are not labeled as such. Many of the activities have a focus on technology, such as the development of "data warehouses," and exploration of the use of internet communication technologies (ICT) to promote collaboration between teachers in a school and among educators within and across school districts (Collinson & Cook, 2003). Schlager and Fusco (2003) examined how technology may be able to support teacher

communities of practice; however, their focus was more specifically on CoPs as a professional development tool rather than an intentional strategy to manage knowledge.

Some schools and school systems see the value in communities as ways to facilitate knowledge activities. Professional learning communities are teacher-centered organizational structures that are linked to the culture in such a way as to promote organizational learning and school improvement (Scribner, Cockrell, Cockrell, & Valentine, 1999). Stoll, Bolam, McMahon, Wallace, and Thomas (2006) assert that while there is no universal definition for professional learning communities, there is international consensus that a professional learning community is a "group of people sharing and critically interrogating their practice in an ongoing, reflective, collaborative, inclusive, learning-oriented and growth-promoting way" (p. 223). The focus is on professional learning within a community context. Mason (2003) explored the role of professional learning communities in facilitating the effective use of data by school administrators, and found that professional learning communities appeared to provide an ideal structure to address the challenges of schools and needs of teachers as they use data to improve student learning.

Edge (2005) documents the successful use of a network of Literacy Coordinators in one Toronto School District to manage knowledge. Through regular meetings, informal sharing, and collaboration, these literacy coordinators were able to improve both their practice and the program for which they worked. The realization that the network provided a powerful opportunity for KM emerged from the experience of the literacy coordinators, and eventually became a formalized, intentional strategy. However, these

efforts are rarely part of a stated KM strategy, even though they are overt attempts to capture, share, and create knowledge.

Section Summary

In summary, KM is an evolving concept, with roots in a variety of disciplines. KM has been defined numerous ways, and most scholars agree that the definition in use for KM will depend on the purpose KM fulfills. In its earliest form, KM was often a technological solution for storing and disseminating organizational information. As KM has evolved, organizations have begun to include people management strategies and nurturing the processes to capture and codify to the extent possible the tacit knowledge embedded in employees, in addition to the capture and codification of explicit knowledge. Therefore, the current iteration of KM interventions take a more holistic approach to capturing, creating, storing, and disseminating knowledge, incorporating both codification and personalization strategies. Dalkir's (2005) KM cycle is an example of an integrated, holistic approach to managing knowledge.

In order for KM to be successful, several factors are critical. Of these, knowledge sharing and leadership are vital to effective KM efforts. While some of these factors have been studied in corporations, few have been explored in connection with KM in schools. This study of how leaders facilitate knowledge sharing attempts to fill that gap in the literature.

KM, Organizational Learning, and Learning Organization

As the field of KM has evolved, a lack of conceptual clarity between KM, organizational learning, and the learning organization has ensued (Vera & Crossan, 2003). These are terms that are used widely throughout the literature, yet are often

confused. Until the work of Vera and Crossan, there were no attempts to clear up the conceptual confusion among these topics in the literature. The fields of KM and organizational learning are interrelated yet distinct, and there is great potential for cross-fertilization of ideas between them (Vera & Crossan). One of these areas is that of leadership, in that the literature on leadership for organizational learning as well as the literature on leadership and management of the learning organization has the potential to inform the fledgling literature on leadership for KM.

Organizational learning is considered by many scholars as the processes through which knowledge changes or flows (Vera & Crossan, 2003). The term was popularized by Argyris & Schön (1978), although the foundational work on organizational learning was first undertaken by March and Simon (1958) and Cyert and March (1963). Levitt and March (1988) have also added to the discourse on organizational learning.

Organizational learning has many definitions, most of which refer to multiple levels of learning that lead to change. Rait (1995) summarizes definitions given by organizational theorists of organizational learning: the identification and correction of errors (Argyris & Schön); a process that leads to second-order change, which results from critically evaluating assumptions that guide behavior (Rait, 1995); behavioral change through the process of gathering information and making sense of it (Huber, 1991); the generation of new knowledge and insights (Hedberg, 1981); and the use of feedback from significant events in the past to make decisions for the future (Levitt & March, 1988). Nancy Dixon (1999) defines organizational learning as "the intentional use of learning processes at the individual, group and system level to continuously transform the organization in a direction that is increasingly satisfying to its stakeholders" (p. 6).

Further, organizational learning can be defined as the process of learning at the individual, team, and organizational levels (Leithwood & Louis, 1998), making it a relevant to the study of knowledge sharing in organizations.

Organizational learning can also be considered a process that occurs at all levels of an organization, with the purpose of improving the organization through systemic change. Argyris and Schön (1978) elaborate the concepts of single-loop and double-loop learning to identify the process through which organizations detect and correct error within existing definitions of norms, policies, and objectives. Single-loop or lower-level learning involves the gradual improvement of organizational practices and routines (Argyris & Schön 1978). Double-loop or higher-level learning is the process through which "error is detected and corrected in ways that involve the modification of an organization's underlying norms, policies, and objectives," (Argyris & Schön 1978, p. 3). In other words, double-loop learning involves determining root causes and questioning underlying assumptions in order to change the culture or practice of the organization. At the individual level, learning occurs through education, experience and experimentation. Organizational learning is a process through which the knowledge held by individuals is shared, captured, and used, and becomes a part of an organization's knowledge base (Nonaka 1994).

As with organizational learning, the learning organization has been defined numerous ways. Senge (1990) defines the learning organization as one "where people continually expand their capacity to create the results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free and where people are continually learning how to learn together" (p. 3). Senge (1990) applies

his five disciplines of organizational learning - personal mastery, team learning, shared vision, mental models and systems thinking – to organizations and describes how they can build on these disciplines to become learning organizations.

Watkins and Marsick (1993) define the learning organization as “one that learns continuously and transforms itself” (p. 8). For these scholars, learning that takes place in the learning organization is a continuous, strategically used process; results in changes in knowledge, beliefs, and behaviors; and enhances organizational capacity for innovation and growth. Much like Senge (1990), Watkins and Marsick believe that learning occurs at different levels: individual, team, organization, and society, and where Senge discusses five disciplines for the learning organization, Watkins and Marsick have six “action imperatives” for the learning organization. These are: to create continuous learning opportunities; to promote inquiry and dialogue; to encourage collaboration and team learning; to establish systems to capture learning; to empower people toward a collective vision; and, to connect the organization to its environment. Watkins’ and Marsick’s six action imperatives echo Senge’s five disciplines. Both provide pathways for organizations to transform themselves through the process of organizational learning into a learning organization. The learning organization is not a process; but rather, it is an idea, or vision for what an organization can become through the process of organizational learning.

KM has been defined and models of KM discussed extensively in previous sections, so let us turn to the task of distinguishing KM from organizational learning and learning organization. Easterby-Smith and Lyles (2003) consider organizational learning to focus on the *process* and KM to focus on the *content* of the knowledge that an

organization creates, captures, processes and eventually uses. However, in the holistic view of KM, there is a process component as well. In another perspective on the relationship of these concepts, King, Chung, and Haney (2008) view organizational learning as complementary to KM, stating that ultimately, organizational learning and KM are both about organizational performance improvement. While this may be an emerging view, it is not one that has become widely accepted at present.

From the organizational development perspective, KM can be thought of as an intervention, the result of which could be increased organizational learning. A learning organization is one concept of an organization that is focused on harnessing the power of learning to continuously improve. KM may, and probably does occur in a learning organization, but learning organizations are not the only type of organization in which KM is implemented. Similarly, not all organizations where organizational learning occurs are considered learning organizations. The three concepts, as stated previously, may be interrelated; however, they are not necessarily mutually dependent for existence in an organization. With that said certain aspects of the organizational learning and learning organization leadership literature may inform leadership for KM.

Senge's (1990) idea of the new work of leaders in learning organizations being that of architect, steward, and learner has the potential to inform research exploring the role of leaders in facilitating knowledge sharing. Similarly, because leadership and learning both occur at multiple levels in an organization the research on leadership for organizational learning (Berson, Nemanich, Waldman, Galvin, & Keller, 2006) may help to inform how leaders facilitate knowledge sharing from the learning perspective. So, while this proposed study does not focus directly on organizational learning, or KM in

the context of a learning organization, those bodies of literature as related to the aspect of leadership may help to inform this study.

The Role of Knowledge Sharing in KM

Huber (1991) posits that KM generally refers to how organizations create, retain and share knowledge. Thus, as knowledge sharing has been identified as a core component of KM, it has become a significant area for research. In fact, knowledge sharing is critical to effective KM (Cross et al., 2001; Davenport & Prusak, 2000; Dixon, 2000; Fullan, 2001; Jashapara, 2005). Teece (2000) states one of the objectives of KM is to get the most from the tacit and codified know-how of an organization. Knowledge sharing accesses tacit knowledge embedded in employees which, when shared increases organizational knowledge. Therefore, knowledge sharing plays a key role in realizing this objective.

There are several other related roles that knowledge sharing plays in KM. Knowledge sharing also plays a significant and important role in knowledge transfer (Cabrera & Cabrera, 2005; Ipe, 2003), and therefore is a key predictor of KM outcomes (Yang & Chen, 2007). A number of scholars have examined the factors that have the potential to enable or inhibit knowledge processes in an organization (Alazmi & Zairi, 2003; Holsapple & Joshi, 2000; Riege, 2005; Wong, 2005). Among the factors identified by scholars, knowledge sharing is critical for successful KM.

The research on knowledge sharing suggests that knowledge sharing involves extended learning processes, not just simple communications (Cummings, 2003). As such, relationships and trust become important in knowledge sharing. Knowledge sharing processes, particularly as seen through a relational lens (Osterlund & Carlisle, 2006)

operate in reciprocal relationship with aspects of an organization's culture (Al-Alawi et al., 2007), and as a consequence, knowledge sharing plays a role in building a collaborative climate and vice-versa. This should not imply that there is no conflict involved in knowledge sharing processes; rather, that the climate is such that individuals can disagree on an issue or potential solution to a problem, and through knowledge sharing can reach a mutual, shared understanding on the issue that may lead to resolution of a problem (Wenger, McDermott, & Snyder, 2002).

Knowledge Sharing

Knowledge sharing has been identified by many as one of the most critical factors in KM (Cross et al., 2001; Davenport & Prusak, 2000; Dixon, 2000; Fullan, 2001; Jashapara, 2005), and as such is the central concept in this study. Knowledge sharing is different from, but related to, communication (Hendricks, 1999). It is not simply the transfer of information, but a more complex and dynamic exchange that occurs through a relationship between two actors. Hendricks states that there are two sub-processes in knowledge sharing; (a) externalization, in which those who have knowledge make it available to others, and a process of (b) internalization, in which those looking to acquire knowledge act in some way to process the knowledge. Similarly, Bosua and Scheepers (2007) describe knowledge sharing as "a more subtle concept, and is seen as a dual process of enquiring and contributing to knowledge through activities such as learning-by-observation, listening and asking, sharing ideas, giving advice, recognizing cues, and adopting patterns of behaviour" (p. 95).

Related to this observation, Boisot (2002) asserts that knowledge sharing indicates that some degree of meaning has been achieved between the repertoires of two

agents. Boer (2005) iterates that knowledge sharing can be considered the area of overlap between communication and learning. He states that some communication must occur for knowledge to be shared, but the act of communication does not ensure that knowledge sharing will take place. Further, Boer states that knowledge sharing implies learning, since without some kind of learning knowledge sharing cannot take place; however, not all learning is the result of knowledge sharing. Therefore according to Boer, knowledge sharing links communication and learning. This section reviews the literature on knowledge sharing, and is divided into two sections reviewing the literature on how knowledge is shared and factors that influence knowledge sharing.

Perspectives on How Knowledge is Shared

According to Ipe (2004), "knowledge sharing is not an activity that takes place seamlessly in organizations" (p. 399). Therefore, in a study about how leaders facilitate knowledge sharing, an understanding of the various perspectives on how knowledge is shared becomes critical in order to build on the foundation that has been laid by previous researchers. Theories and conceptual frameworks of knowledge sharing in organizations have emerged from the individual (Ipe, 2003), group (Brown & Duguid, 1989; 1998; 2001; Lave and Wenger, 1991; Osterlund & Carlisle, 2005; Wenger, 1998), and organizational perspectives (Nonaka & Takeuchi, 1995). These different views of knowledge sharing recognize the value and importance of the knowledge that resides at each level, and how it contributes to the knowledge of the organization. Rather than focusing on the level at which knowledge is shared, Lichtenstein and Hunter (2006) review perspectives on knowledge sharing that focus on how knowledge is defined in the sharing relationship. However, both how knowledge is being defined as well as the level

at which it is being shared are important to the conversation on knowledge sharing. The following sections present views on how knowledge is shared from the following perspectives: (a) individual, (b) group and organizational, (c) codification, (d) personalization, (e) community, (f) network, and (g) power.

Individual. Ipe (2003) provides a conceptual framework for knowledge sharing among individuals in an organization. Through an extensive literature review she identifies three categories of factors that influence knowledge sharing between individuals in an organization: the nature of the knowledge; an individual's motivation to share; and, opportunities to share, which will be discussed in detail in a later section. These three categories of factors are embedded in the context of the organizational culture, or the subculture in which the individuals operate. De Long and Fahy (2000) assert that organizational culture provides context for interaction, controls the relationships between levels of knowledge, shapes assumptions about which knowledge is important, and defines the processes through which new knowledge is created and disseminated in organizations. This stance supports the position that knowledge sharing is embedded in the culture of the organization.

Group and organizational. Knowledge sharing provides a link between the individual and the organization by moving knowledge that resides with individuals to the organizational level, where it is converted into value for the organization (Hendricks, 1999). Knowledge sharing in organizations can be discussed from the perspective of both the formal and informal social structures in the organizations, such as work groups, project teams, communities of practice, and social networks. Work groups and project teams are typically more formalized organizational structure and stay together until a re-

organization occurs, or until the project is complete. Cummings (2004) found that the value of external knowledge sharing was enhanced when work groups were more structurally diverse, which has implications for decision-making in terms of the structural make up of work groups and the level of homogeneity within the structure.

Communities of practice (CoP) are typically informal, self-organized structures within the organization, although they may become more formal as they develop. Knowledge sharing in such groups is related to the development of practice-related knowledge. While Wenger, McDermott, and Snyder (2002) believe in the value of communities of practice as a structure for sharing, creating and codifying knowledge, they also recognize that there is a downside to CoPs. Some of the problems associated with CoPs relate to the hoarding of knowledge, clique formation, limitation of innovation, and exclusiveness with regard to membership.

Krackhardt and Kilduff (2002) state that “human behavior is embedded in social networks that facilitate the flow of knowledge and other resources between individuals and groups” (p. 279). Informal networks in organizations provide space through which knowledge acquisition, sharing and creation can take place. Networks emerge based on the relationships that individuals form with others. Krackhardt and Hanson (1993) identify three types of networks that form from emergent relationships: advice networks, trust networks, and communication networks, all of which are important in knowledge sharing activities.

Codification. Codification proposes that explicit knowledge can be codified and stored to be retrieved, reconstructed, and assimilated at a future date by individuals (Hansen, Nohria, & Tierney, 1999). Hansen et al. refer to the codification strategy of

knowledge sharing as a “people to documents” approach. This perspective focuses on creating documents and artifacts that capture explicit knowledge, but is limited in being able to effectively share tacit knowledge that is difficult to codify. Technology systems such as data repositories, decision-support systems, and search-and-retrieve tools enable access to and acquisition of codified explicit knowledge (Gourlay, 2001).

Personalization. Personalization approaches (Hansen et al., 1999) to knowledge sharing are more interactive in terms of individuals negotiating meaning and stimulating knowledge creation and learning. Further, personalization approaches to knowledge sharing facilitate not only the sharing of explicit knowledge, but also the tacit knowledge which is difficult to codify. People-focused strategies, in which organization members are able to interact, either virtually or face-to-face facilitate the sharing of tacit knowledge (Arumburu & Sáenz, 2007). It is the focus on personalization and the management of knowledge sharing processes that is of particular importance to the HRD profession, and where HRD professionals can play an integral role in the corporate KM strategy.

Community. In the community perspective, knowledge sharing is a process that exists in the relations of the community members who produce, share and apply the socially constructed knowledge (Osterlund & Carlisle, 2004; von Krogh, 2002; Wenger, McDermott & Snyder, 2002). Communities of practice (Brown & Duguid, 1998; 2001; Lave & Wenger, 1991; Wenger, 1998) are an informal structure commonly associated with the community perspective of knowledge sharing. Although there are many definitions of communities of practice, the basic notion is that communities of practice are groups of people who share a common passion or purpose and who interact with the

intent to share knowledge. Knowledge from the community perspective is a shared understanding that can be translated into action and performance.

Power. The power perspective on knowledge sharing conceives of knowledge sharing in terms of how power mediates the knowledge sharing process (Kelly, 2007). Individuals may choose to share or to hoard knowledge based on how the action affects their status and position (Willem & Scarborough, 2006). In their study on how organizational culture affects knowledge sharing, Al-Alawi, Al-Marzooqi, and Mohammed (2007) determine that organizational culture influences whether or not individuals within an organization share knowledge. They state that the current iteration of KM involves people and actions. "It aims at creating an environment where power equals sharing knowledge rather than keeping it" (Al-Alawi et al., 2007, p. 24).

Factors Influencing Knowledge Sharing

No matter the perspective from which one views knowledge sharing or the level at which it is shared, there are certain factors that can either facilitate or inhibit knowledge sharing. An understanding of the factors that influence knowledge sharing is essential to the study of how leaders facilitate knowledge sharing activities in their organizations. Several scholars have identified factors that influence knowledge sharing (Ipe, 2003; Sveiby & Simons, 2002). For example, Sveiby and Simons (2002) identified 50 factors from the literature that affect collaborative climate and trust to promote knowledge sharing. They group these factors into four areas: employee attitude, work group support, immediate supervisor, and organizational culture. Similarly, Lin, Lee, and Wang (2008) identified four dimensions of factors, subdivided into 16 important attributes, which influence knowledge sharing: corporate culture, employee motivation,

leadership, and information technology. With the exception of information technology, these dimensions are similar to the areas identified by Sveiby and Simons (2002). In both the Sveiby and Simons study and the Lin et al. study, developing a collaborative and trusting climate was paramount to effective knowledge sharing. Additionally, the nature of knowledge, as well as opportunities to share knowledge, are factors that influence knowledge sharing.

In studying knowledge sharing between individuals in an organization, Ipe (2003) found in addition to these factors, motivation and culture were major factors that influence knowledge sharing. This finding confirms similar findings by Sveiby and Simons (2002). These three studies highlight six major dimensions or factors that influence knowledge sharing: (1) employee attitude/motivation, (2) immediate supervisor/leadership, (3) organizational/corporate culture, (4) information technology, (5) the nature of knowledge, and (6) opportunities to share.

Employee attitude/motivation. An individual's motivation to share influences knowledge sharing. Ipe (2003) discusses employee motivation to share knowledge by classifying factors as internal or external. The individual power associated with certain knowledge and reciprocity, or the mutual exchange of knowledge, are internal factors that influence knowledge sharing among individuals. Reciprocity has been found to facilitate knowledge sharing, particularly in communities of practice (Bartol & Srivastava, 2002). The relationship with the recipient and rewards for sharing are external factors influencing individual knowledge sharing in an organization. Real and perceived rewards for sharing and penalties for not sharing may affect the knowledge sharing process (Ipe,

2003). Kim and Lee (2006) found that the establishment of reward systems positively influenced knowledge sharing capability.

Immediate supervisor/leadership. The immediate supervisor's beliefs about knowledge sharing, as well as the senior leader's support for knowledge sharing will influence how knowledge is shared. Srivistava, Bartol, and Locke (2006) explored the effect of empowering leadership on knowledge sharing, efficacy and performance in teams. The researchers found that empowering leadership was positively related to knowledge sharing and team efficacy and both of those were related to performance. While this factor has been explored more in depth as related to establishing an appropriate culture for knowledge sharing (Yang, 2007), it is clear that without managerial support, workers are less likely to share knowledge (Sveiby, 2007). Sveiby found that apathetic and hypocritical manager behaviors prevent knowledge sharing. In other words, it is what the managers or senior leaders *do not do* that is of consequence. Sveiby concludes that for knowledge sharing to happen, managers must actively encourage it.

Organizational/corporate culture. The culture of the organization can be a significant influence with respect to knowledge sharing, and in many cases is a major barrier to effective knowledge sharing (De Long & Fahy, 2000; Pan & Scarbrough, 1999). Liebowitz and Chen (2003) assert that a key element of KM is developing a knowledge sharing culture. Several studies have found direct relationship between supportive organizational culture and successful knowledge sharing (De Long & Fahey, 2000; Janz & Prasarnphanich, 2003). Conversely, a culture that encourages knowledge hoarding may inhibit knowledge sharing (Hackett, 2000).

Certain aspects of organizational culture can influence knowledge sharing (Ipe, 2003). For instance, culture shapes the assumptions about the value of certain types of knowledge in the organization, and it controls the levels at which knowledge resides (De Long & Fahey, 2000). Culture also determines to some extent how knowledge is distributed throughout the organization. Additionally, organizational culture can influence the context for social interaction, those relational channels for knowledge sharing. Further complicating matters are the subcultures within an organization (McDermott & Odell, 2001). Each subculture has the potential for a different set of norms and values, which may mean that across subcultures different types of knowledge are valued differently.

Information technology. The usability and accessibility of technology is a factor in how technology influences knowledge sharing. In fact, the use of Internet Communication Technology (ICT) has grown in popularity as a way to facilitate knowledge sharing in distributed organizational environments, such as multi-national companies. In a study of knowledge sharing in a virtual CoP, Ardichvili, Page, and Wentling (2003) found that the perceived uses and benefits of a system influenced the way in which individuals shared knowledge. Similarly, Kim and Lee (2006) found that information technology (IT) usage and user-friendly IT systems positively affect knowledge sharing capability.

The nature of knowledge. Within the category of the nature of knowledge, Ipe (2003) claims that the tacitness or explicitness of knowledge, as well as the value assigned to the knowledge influence how and to what extent it will be shared among individuals in an organization. Tacit knowledge, as explained in an earlier section, is not

easily transferred from one individual to another; whereas explicit knowledge is more easily codified and shared. Moreover, the tacit or explicit nature of knowledge in many cases dictates the ways in which knowledge can be shared, with tacit knowledge requiring more of a personalization approach than explicit knowledge would generally require. Brown and Duguid (2001) refer to the nature of knowledge as either "sticky" (von Hippel, 1994) or "leaky." The "stickiness" of knowledge often refers back to its tacit nature, while "leakiness" refers to the undesirable movement, or even loss, of knowledge across boundaries (Brown & Duguid, 2001). Finally, how context dependent the knowledge is may determine how easily it is shared (Ipe, 2003).

Opportunities to share. Whether or not there is ample opportunity to interact with other individuals may determine the extent to which knowledge can be shared. Opportunities to share can be either formal interactions (Bartol & Srivastava, 2002) such as training or work teams; or informal interactions, such as personal relationships or social networks. Although formal interactions are important in facilitating knowledge sharing, Ipe (2003) asserts that most knowledge sharing takes place through informal interactions. These "relational channels" (Pan & Scarbrough, 1999) facilitate the building of trust, which is critical for knowledge sharing (Ipe, 2003). While both formal and informal channels exist in every organization, the ways in which they are structured have implications for the opportunities to share knowledge.

Section Summary

It is not surprising that knowledge sharing has received such a high level of attention in the literature, given the importance placed on knowledge as a strategic resource. Further, because knowledge sharing is considered a core component of KM and

effective knowledge sharing is seen as critical to successful KM, it is vital to understand all facets of this phenomenon. Just as knowledge resides at multiple levels of the organization, so does knowledge sharing occur among individuals and groups in the organization. It does not necessarily occur easily, however. There are a number of factors that influence knowledge sharing: (1) employee attitude/motivation, (2) immediate supervisor/leadership, (3) work group support, organizational/corporate culture, (4) information technology, (5) the nature of knowledge, and (6) opportunities to share. These factors can either be facilitators or inhibitors. Barriers to knowledge sharing (see Riege, 2005 for a full review) must be overcome at both the individual and organizational level in order to realize the benefits that knowledge sharing can provide.

Leadership

Bass (1990) classifies definitions of leadership into numerous categories, and concludes that the definition of leadership should depend on the purposes to be served by the definition. Northouse (2004) synthesizes the ways leadership has been conceptualized and identifies four components central to the leadership phenomenon: (1) leadership is a process, (2) leadership involves influence, (3) leadership occurs within a group context, and (4) leadership involves goal attainment.

The literature on KM describes a new context in which modern leaders operate (Viitala, 2004). Therefore, research on leadership as it relates to knowledge processes is beginning to surface. This study focuses on how leaders facilitate knowledge sharing in an organization, specifically schools, and pays particular attention to the behaviors exhibited and strategies employed. Rather than review the entire body of work on leadership, this section reviews: (a) the literature related to effective school leadership,

(b) a recent concept termed *knowledge leadership*; (c) the role of the leader in KM, and (d) the research on leadership for knowledge sharing.

Effective School Leadership

The importance of leadership is well-documented in research and practice (Harris & Bennett, 2001). Fullan (2005), in his book *Leadership and Sustainability: System Thinkers in Action*, distinguishes between leaders and leadership and states that leadership is what is needed for sustainable reform. He defines sustainability as "the capacity of a system to engage in the complexity of continuous improvement consistent with the deep values of human purpose" (Fullan, 2005, preface). Northouse (2004) defines leadership as "a process whereby an individual influences a group of individuals to achieve a common goal" (p. 3). If the common goal is more effective schools and thereby a more effective school district, then what is the role of leadership in continuous improvement efforts?

Bernauer (2002) names effective leadership as one of five keys to unlocking the potential of school improvement, along with teachers at the center of improvement, shared outcomes, action research as staff development and continuous assessment. In reviewing the literature on leadership related to school improvement efforts, organizational renewal and school reform, several aspects emerge regarding effective leadership. Effective leaders engage in the following activities:

1. They empower teachers to lead and/or participate in decision-making processes (Harris, 2004; Johnston, 2001). Teachers are encouraged to take on leadership roles (Zepeda, 2003), or at least participate in the decision-making process. Those in formal leadership positions such as superintendent, principal, etc. recognize

and empower leaders at other levels of the organization. Often leadership is distributed (Spillane, 2006) throughout the school.

2. Effective leaders establish a vision for renewal that encompasses moral purpose and focuses on students (Fullan, 2001; Protheroe, 2005; Harris, 2004). Fullan (2001), states that moral purpose, defined as "making a positive difference in the lives of employees, customers and society as a whole" (p. 3), and sustained performance are mutually dependent. Leading with the moral purpose of improving the lives of staff, students and the community guiding the organization's vision will go far to enhance improvement efforts.
3. Effective leaders develop processes for and promote collaboration among staff (Harris, 2004; Protheroe, 2005). Establishing and nurturing relationships, promoting professional dialogue, and creating the structures, processes and spaces for collaboration to occur are characteristic of leaders who engage in continuous improvement. Leithwood, Harris, and Hopkins (2008) state that establishing the proper work conditions allows teachers to make the most of their motivations, commitments and capacities.
4. They facilitate productive conversations around improving practice (Mai, 2004; Protheroe, 2005). Effective leaders promote learning communities (Zepeda, 2003), and they model raising critical questions and prompt deeper questioning of underlying assumptions and basic beliefs that inform decision-making. This also includes helping teachers seek out and providing them access to proven, research-based instructional strategies.

5. Effective leaders promote a culture of informed experimentation, risk-taking and innovation (Mai, 2004; Protheroe, 2005; Fullan, 2001). These leaders set the expectation for collaboration and innovative problem-solving to generate new thinking. They gather data and use that data to encourage questions and reflection on current practice as well as developing new strategies.

Gutierrez, Simmons, Field, and Basile (2007) agree with Leithwood et al. (2004) that in order to be successful in high-accountability contexts and impact student learning, school leaders need to create and sustain competitive schools, empower others to make significant decisions, provide instructional guidance, and develop and implement school improvement plans.

As the senior leader in the school, principals play a significant role in leading KM and continuous improvement efforts (Gutierrez et al., 2007). Further, according to Gutierrez et al., principals should be considered knowledge managers who manage and use the intangible assets of the school to increase student learning. An important part of their role as the instructional leader of the building is helping teachers to improve their practice and increase their professional knowledge (Zepeda, 2007). Knowledge sharing is a primary way for teachers to increase professional knowledge and is a significant component of KM and vital to successful KM initiatives. However, at present there is no research that addresses how principals intentionally facilitate knowledge sharing among their teachers.

Knowledge Leadership

While it has been established that leadership is critical for knowledge sharing and KM, the concept of knowledge leadership is just beginning to emerge. In the following

sections I share how knowledge leadership is being defined and studied, as well as synthesize the literature on the leader's role in KM.

Perspectives on knowledge leadership. Skyrme (2000) may have been the first to use the term *knowledge leadership*. Viitala (2004) defines knowledge leadership as "a process whereby an individual supports other group members in learning processes needed to attain group or organizational goals" (p. 528). The term itself has been used in different ways. Politis (2001) coined the term "knowledge-enabled" leader. Through his study on various leadership styles, Politis concludes that leadership styles that involve human interaction and participative decision-making processes are positively associated with the skills that are essential for KM. Knowledge – enabled leaders, according to Politis, encourage communication, negotiation, and knowledge sharing, and promote interactive processes for knowledge acquisition.

Others separate the term knowledge leader from the concept of "leading through a knowledge lens" (Ribiere & Sitar, 2003, p. 44). For them, knowledge leadership refers to those in formal organizational roles that are responsible for knowledge and learning, such as Chief Knowledge Officer, knowledge analysts, knowledge managers, etc. Whereas, leading through a knowledge lens refers to "all the leaders who are working in a company, demanding them to change their approach in such a way as to lead their knowledge workers to learn and use knowledge, thereby achieving the knowledge goals of the company as a whole" (Ribiere & Sitar, p. 44).

Viitala (2004) developed a knowledge leadership model based on research answering the question "What should leaders actually do in their units if they want to support learning that contributes to the capability of the organization?" He states there

are four dimensions of knowledge leadership: orienteering of learning, creating a climate that supports learning, acting as a role model, and supporting individual and group level learning processes. From his research, Viitala defines knowledge leadership as

> leadership where the leader, together with his/her subordinates clarifies the direction of development, creates a climate which promotes learning, and supports learning processes at both individual and group level. The leader also inspires his/her subordinates toward continual personal development through his/her own example. (p. 539)

In other words, there are essential elements of leadership that are important if a leader desires to contribute to learning in the organization (Vitaala).

Lakshman (2007) recently introduced the concept of organizational knowledge leadership, a theory of the role of leaders in KM. Whereas almost all other research focused on leadership and KM has been focused on middle management, Lakshman uses a grounded theory approach to develop his theory about the executive leader's role in KM. Executive leaders' role in the managing of knowledge is displayed in three areas: development of various technological and sociocognitive networks within the organization; development of technological and sociocognitive networks that enable customer-focused knowledge sharing; and, personal participation in KM activities. Lakshman's contribution to the literature base is important as it highlight's the role of executive leadership in the management of knowledge, since KM is, or rather should be, an enterprise wide intervention accompanied by a specific strategy for implementation.

As Viitala (2004) states, most of the traits of effective knowledge leadership can be found in the existing leadership literature; therefore, knowledge leadership is not

necessarily a new and distinct form of leadership. Rather, knowledge leadership may be a way to think about the combination of effective leadership traits necessary to successfully implement KM and achieve effective knowledge sharing.

Leader's role in KM. Leadership has been identified as a critical factor influencing KM (Alazmi & Zairi, 2003; Holsapple & Joshi, 2000). In response, scholars have attempted to identify the type of leadership needed for KM. Transformational leadership characteristics have been linked to organizational learning and KM (Crawford, 2005; Mulford & Silins, 2003; Politis, 2001). Leadership styles that have been positively linked to knowledge acquisition and sharing include participative and self-management leadership (Politis, 2001) and empowering leadership (Srivastava, Bartol, & Locke, 2006). However, research on leadership styles and characteristics has not addressed the leader's role in KM.

Yet, the work on leadership styles does begin to lay the foundation to help us understand the role of the leader in KM. Berson, Nemanich, Waldman, Galvin, and Keller (2006) conducted a comprehensive review of the literature on leadership and organizational learning related to knowledge exploration, integration and exploitation at multiples levels including individual, dyad/group, and organizational. Berson et al. asserted that various models of leadership are relevant to understanding integration of learning. The authors state that

> …theoretical and empirical work…suggest that organizational learning at the integrating stage may be facilitated by leaders who help build the structural ties within a social network (both inside and outside the organization), thereby

> allowing themselves and followers to be conduits for information and learning. (p. 587)

Berson et al.'s (2006) review leads us to conclude that one of the roles of leaders in the management of knowledge is to develop and nurture the social structures of the organization to facilitate organizational learning and sharing of knowledge and information.

Singh's (2008) findings regarding leadership styles that enhance KM activities also highlight the supportive role that leaders play in KM activities. Through a quantitative study of an Indian software firm, he concluded that delegating leadership style has a significant, positive relationship with KM practices, and that directive leadership style is negatively associated with KM activities. Further, only the delegating leadership style was found to predict variance in both explicit and tacit forms of KM practices.

Politis (2001), whose work expands on that of Manz and Sims'(1987) research on self-leadership in self-managed work teams, calls leaders who exhibit self-management leadership behavior that facilitates knowledge acquisition and sharing the "knowledge-enabled leader. " He describes the knowledge-enabled leader as one whom

> …is capable of understanding the strategic relationship between knowledge acquisition and the business processes and functions; supporting and facilitating employees to acquire and share knowledge; leading the enterprise's effort to exploit knowledge; sponsoring and supporting ideas for further use in knowledge strategies for knowledge acquisition. (p. 362)

Therefore, a second role of leaders in KM is that of strategic development and implementation of knowledge acquisition and sharing practices.

While focused primarily on the context, or '*ba*', for knowledge creation and the knowledge creation process itself, Nonaka, Toyama and Konno (2000) discuss the role of top management in articulating an organizational knowledge vision which facilitates and "energizes" the knowledge creation process. While the researchers are clear that from their perspective knowledge cannot be "managed" in the traditional sense of the word, they explain that managers can provide certain conditions that will lead the organization to engage in the knowledge creation process. Nonaka et al. also highlight the importance of middle managers who are at the intersection of information flows in a company. They conceptualize leadership as being distributed in the knowledge creation process, as knowledge creation cannot be managed through traditional, hierarchical leadership processes. A third role of leaders in KM processes is that of articulating the strategic vision for KM. Nonaka et al. 's work also includes a fourth role for leaders of KM, which is management of and engagement in the process through distributed leadership.

In addition to Nonaka et al.'s (2000) work, Lakshman's (2007) theory of organizational knowledge leadership highlights the creation of social structures and directs some of the activities externally to the organization through customer-focused knowledge sharing. His role of participation in KM activities is similar to that of engaging in the process through distributed leadership.

The leader's role in KM can be summarized as follows:

- Creating and nurturing social structures (such as networks, teams and communities) in the school and district to facilitate knowledge sharing and organizational learning;
- Strategically developing and implementing knowledge acquisition and sharing practices;
- Articulating a strategic vision for KM; and,
- Engaging in the KM process through distributed leadership.

Wenger and Snyder's (2000) gardener metaphor is an appropriate way to characterize the role of the leader in KM. The authors liken the role of the leader to that of a gardener who must work with the plants, soil, and elements:

> You can, however, till the soil, pull out weeds, add water during dry spells, and ensure that your plants have the proper nutrients. And while you may welcome the wild flower that blooms without any cultivation, you may get even more satisfaction from those vegetables and flowers you started from seed. (p. 143)

Aligning resources and bringing people together are important leadership behaviors for managing knowledge processes (Becerra-Fernandez & Stevenson, 2001; Mulford & Silins, 2003; Wenger & Snyder, 2000.)

The Research on Leadership for Knowledge Sharing

With an increased focus on personalization strategies in KM over the past decade, the influence of leaders on knowledge sharing activities has become an important topic. There have been few empirical studies investigating leadership in connection with knowledge sharing, with most being studied in the context of knowledge intensive

organizations and through quantitative methods. Some studies that have been carried out have explored leadership styles in relation to knowledge sharing, while a few others have examined leadership roles in developing a knowledge sharing culture. Through these studies, certain leadership traits and models of leadership have been identified that facilitate knowledge sharing.

For instance, Yang (2007) found that certain leadership roles facilitate the sharing of knowledge through a study of how a collaborative organizational culture and certain leadership roles affect knowledge sharing in the tourism industry in Taiwan. Basing his work on the eight leadership roles identified by Cameron and Quinn (1999) and using quantitative methods, Yang (2007) determined that there was a positive relationship between the leadership roles of facilitator, mentor and innovator and knowledge sharing effectiveness. Conversely, there was a negative relationship between the monitor role and knowledge sharing. Yang also found that there was a positive relationship between a collaborative culture and the effectiveness of knowledge sharing. Supporting activities rather than directing them is likely to have a positive effect on knowledge sharing.

Srivastava, Bartol, and Locke's (2006) findings highlight the importance of the empowering leadership model. An empowering leader is one who exhibits supportive behaviors, participative decision-making behaviors, and coaching behaviors, all of which the authors suggest encourage knowledge sharing. These leadership behaviors have important implications for team-based organizations, in which it is important for some of the decision-making power to be shared with team members. The findings from this study indicate an empowering leader is an important facilitator of knowledge sharing.

In educational institutions, leadership for knowledge sharing is highlighted as a critical need. Fullan (2002) asserts that leaders should possess the ability to promote knowledge creation and sharing among organizational members, which he states is one of five critical areas for changing the culture of an organization, in his context, a school. Fullan believes that establishing knowledge sharing practices "is as much a route to creating collaborative cultures as it is a product of the latter" (p. 86). Further, effective leaders must make knowledge sharing a priority and establish and reinforce habits of knowledge exchange among organizational members. Naming knowledge sharing as a core value is a first step to the process, Fullan concludes.

Section Summary

This section reviewed four areas of the leadership literature: (a) the literature related to effective school leadership, (b) a recent concept termed *knowledge leadership*; (c) the role of the leader in KM, and (d) the research on leadership for knowledge sharing. While the importance of leadership is well-documented in research and practice (Harris, 2001), the discourse on leadership for knowledge sharing is just beginning to emerge. Leadership for knowledge sharing is highlighted as a critical need, particularly in schools.

Chapter Summary

This review of the literature addressed six areas of research related to the proposed study: (a) knowledge in organizations, (b) KM, (c) differentiation of KM, organizational learning, and learning organization; (d) the role of knowledge sharing in KM, (e) knowledge sharing, and (f) leadership. The literature on knowledge in organizations addresses the ways knowledge has been defined and viewed in

organizations, which is foundational to understanding how an organization manages knowledge. The literature on KM and knowledge sharing provides an understanding of the organizing frameworks or theories guiding KM efforts, and the critical role that knowledge sharing plays in an overall KM strategy. The literature on leadership specifically focuses on defining knowledge leadership, and addresses questions about the role of leaders in KM and particularly in knowledge sharing.

Although there is no consensus around the definition of knowledge, the way an organization defines and views knowledge is a significant factor in how the organization manages its knowledge. While KM taxonomies, theories, and models abound, a common factor across almost all of these is that knowledge sharing plays a vital role in KM activities, and is deserving of the attention it has received thus far in the literature. The factor that is essential to both successful KM and knowledge sharing efforts is leadership. Leadership for knowledge sharing is an area that has received little attention in the literature. While there is research that supports the role that leaders play in KM efforts, little is known about how leaders facilitate knowledge sharing. There is even less literature on how this occurs in the education sector, where increased mandates have highlighted the critical need for knowledge sharing.

CHAPTER 3

RESEARCH METHODOLOGY

This chapter describes the research methodology used to explore how school leaders facilitate knowledge sharing. The research was designed to answer the following questions:

- What are leaders' beliefs about knowledge sharing?
- What leader behaviors facilitate knowledge sharing?
- What strategies do leaders employ to facilitate knowledge sharing?
- What affects a leader's capacity to facilitate knowledge sharing?

This chapter is divided into several sections. The first section describes the design of the study, and why this particular design is appropriate to answer my research questions. The second section explains sample selection. The third and fourth sections describe data collection and analysis methods, respectively. The fifth section outlines validity and reliability as it pertains to my study. Finally, the sixth section shares my bias and assumptions as a researcher.

Design of the Study

Important to any research study is the determination of how one will go about examining the research problem in order to answer the research question. The research question itself is an important component of other methodological considerations such as the research paradigm, the research method, and the research context (Swanson, 2005) that are all bound in an iterative process that shapes, refines and defines the research

study. Researchers can use qualitative, quantitative, or a combination of the two research methodologies to study a research problem. However, how well understood a phenomenon is will likely influence the methodological choice—with well-understood phenomena being researched more through quantitative methods and less understood phenomena being researched more through qualitative methods (Merriam & Simpson, 2000). Because little is understood about how organizational leaders facilitate knowledge sharing in organizations, particularly schools, I used a qualitative approach in my research.

Epistemological and Theoretical Perspectives

Qualitative research is informed by numerous epistemological and theoretical perspectives. Merriam (1998) stated that the theoretical framework, or the orientation you bring to your study, provides the framework of your study. This study was grounded in constructionism, and was guided by interpretivism. From the constructionist view, meaning is not discovered, but constructed by individuals and groups as they interact with the world around them (Crotty, 1998). I believe that words, objects and symbols can and do hold different meanings for different people based on culture and interaction. Individuals construct their own meanings about situations and circumstances related to their work. As they share that knowledge with others, the recipients are also constructing their own personal meaning of what has been shared. Together, the "sharer" and "receiver" may construct new knowledge and meaning. Through a constructionist lens, I gained a better understanding of how leaders facilitate knowledge sharing in their schools. As I interviewed the participants in my study, I developed meanings based on interactions and interpretations, not on objective truth that was discovered (Crotty, 1998).

The theoretical perspective of interpretivism "attempts to explain human and social reality" (Crotty, 1998, pp. 66-67). Interpretivism was well-suited to this study since the focus of my research was to understand the reality of individual leaders as they facilitate knowledge sharing in their organizations. Crotty (1998) also stated that interpretivism "looks for culturally derived and historically situated interpretations of the social life-world" (p.67). Interpretivism was important in helping me to understand the role that contextual factors such as organizational culture, organizational structure, and policies, as well as the leader's own beliefs about knowledge sharing play in how leaders facilitate sharing of knowledge.

Key Characteristics of Qualitative Research

Creswell (1998) defined qualitative research as an inquiry process that explores a social or human problem. The researcher develops a complex, holistic picture by analyzing words, reporting detailed views of participants, and conducting the study in a natural setting. There are a number of key characteristics that effectively describe qualitative research. Merriam (1998), Creswell (2002), Patton (2002) and others have identified common characteristics of qualitative research, which are summarized and compared here with the characteristics of my study, further strengthening my choice to conduct a qualitative study:

1. *Interest in process* - Researchers are primarily interested in the process rather than outcomes or products (Merriam, 1998). The major strength of qualitative research is that it focuses on the processes that lead to outcomes, which are normally not identified in quantitative research (Maxwell, 2005). The focus of this study was not about the outcomes of an organization's KM strategy, but

about how leaders facilitated knowledge sharing processes. When we have a better understanding of the processes that lead to certain outcomes, there can be increased knowledge of *how* and *why* those outcomes resulted. Such studies can inform both the theory and practice of knowledge sharing.

2. *Focus on understanding* - Researchers are interested in meaning and how people interpret their experiences (Webb & Glesne, 1992; Merriam, 1998). Qualitative methods are used to explore and understand a complex human and/or social phenomenon (Creswell, 2002). KM, and in particular how leaders facilitate the most critical component of the KM cycle, knowledge sharing, is a complex and understudied phenomenon, the further study of which would benefit from qualitative methods.
3. *Use of researcher as instrument* - The researcher is the primary instrument for data collection and analysis, as information is mediated through this human instrument (Merriam, 1998; Merriam & Simpson, 2000). The researcher interacts with participants (Stake, 1995), and her or his personal experiences and insights are important to the inquiry and understanding of the phenomenon (Patton, 2002). Because the goal of this research study was to understand the process of how leaders facilitated knowledge sharing, the researcher, who was able to respond and adapt, was ideally suited for collecting and analyzing the data, and was able to consider the whole context of the problem (Merriam & Simpson, 2000).
4. *Field oriented* - Data collection usually involves fieldwork (Stake, 1995). The researcher goes to the setting, people, or site to observe behavior in its natural

setting (Merriam, 1998) and allows the topic to be explored in detail (Creswell, 1997) as the situation unfolds naturally (Patton, 2002). Hypothetically, it might be possible to understand how leaders facilitate knowledge sharing and other knowledge processes through historical document analysis that might not involve going to the specific site to collect data. However, in order to study how leaders are presently facilitating knowledge sharing, going into the field, conducting interviews and observing these leaders was required to gain a holistic picture of the phenomenon in its real-world setting.

5. *Richly descriptive*- The research reported is descriptive. The researcher describes what is seen, or heard (Merriam, 1998). The results of qualitative studies can inform researchers and readers about how a sample views an issue and how diverse their views are (Creswell, 2002). In a qualitative study, the inquiry often begins with a broad "how" or "what" question so initial forays into the topic describe what is going on (Creswell, 1997). The thick, rich description of how leaders facilitate knowledge sharing would not have been available without the use of qualitative techniques.
6. *Inductive* - The researcher uses an inductive process (Merriam, 1998). The thought process involves moving from the details to the general points, perspectives, generalizations, or themes. Qualitative studies clarify participants' experiences; the methods used involve developing codes, categories and themes inductively rather than imposing predetermined classifications on the data (Creswell, 1997). It is guided by analytical principles rather than rules (Patton, 2002). Because there was little study in my

area of interest, the induction of categories and themes was better suited to understanding the phenomenon, rather than imposing predetermined classifications on the data (Creswell, 1997). This allowed for the development of a deeper understanding of the phenomenon, rather than deciding whether it fit pre-determined criteria, of which few existed.

Research design and methods are dictated by the questions being raised, how the problem is shaped, and what end product is desired (Merriam, 1998). In my particular area of interest, the literature is clear that knowledge sharing and leadership are critical to the successful management of knowledge; however, exactly how leaders go about that process, what behaviors are exhibited, how their beliefs influence their strategies, and how they may be enabled or constrained by contextual factors was an understudied area. This was an important reason to use qualitative methods over quantitative ones, since qualitative research methods are well-suited to developing a better understanding of phenomena. Further, quantitative studies typically look to answer a question or seek out a relationship between a few, well-defined variables. In qualitative research, research questions center on phenomena or cases, and variables are defined differently than in quantitative studies (Stake, 1995). My study focused on a phenomena rather than on seeking a relationship between a few, well-defined variables.

Sample Selection

Purposeful sampling is the identification of sources that can provide the most relevant and useful information and is the primary technique used to identify research participants (Bogdan & Biklen, 1998; Merriam, 1998; Patton, 2002). Purposeful sampling (Patton, 2002), also called criterion-based sampling (LeCompte & Preissle, 1993),

requires that the researcher set standards or criteria for individuals to be included in the study, and then finds a sample that matches these criteria (Merriam, 1998). I used a reputational- case selection strategy (LeCompte & Preissle, 1993), in which I selected participants for my study on the recommendation of experts in the field of education. In determining the sample to use, the participants were identified as individuals that represented the population to be studied. They were also identified as cases I would learn the most from.

There are multiple types of leaders within a school and school district. I could have chosen to focus on both principals and assistant principals, or formal teacher leader positions within the school such as department chairs or instructional lead teachers. Similarly, I could have chosen those who hold leadership positions at the district level, such as directors of professional learning, curriculum directors, or the superintendent as the population for my study. I limited the population for my study to those in the position of principal, because I am interested in how those who hold the senior leader position in the school facilitate knowledge sharing processes. As the senior leader, principals are more likely to have a comprehensive view of the knowledge sharing activities taking place within the school and should be able to speak knowledgeably about those activities. I also limited my population to high school principals, since high schools are traditionally thought of as very siloed structures which would potentially make it more difficult for knowledge sharing to take place. Finally, I limited my population to principals of public high schools, as it is public schools that must educate the majority of the students in this country and have high accountability to do so.

The population for my study was all public high school principals in the state of Georgia, due to accessibility and the feasibility of conducting the study. Nominations were sought from the Georgia Department of Education, Georgia Association of Secondary School Principals, consultants in the area of school improvement, and evaluators of school improvement efforts, as these four groups of experts had first-hand knowledge of schools engaged in knowledge sharing activities. Since my knowledge of schools, their leaders, and their knowledge sharing inititatives was limited to a small number, tapping into these groups of experts allowed me to select the best participants possible from the larger pool. Individuals from these areas served as my key informants.

I asked my key informants to nominate current high school principals who met the following criteria for participation in my study. The first criteria was that the individual should be a principal of a school that displays a commitment to knowledge sharing activities. Knowledge sharing activities include opportunities for teachers to either formally or informally share/disseminate knowledge with one another, either virtually or face-to-face. Secondly, the potential participant must have held the principalship of the same school for at least three years. Typically there is a transition period when a new principal takes the leadership of a school. By using this criteria I was looking to select principals who were established in their role as principal of the school they are currently serving.

Conversations with my key informants resulted in fourteen potential participants. I sent a letter to each prospective participant, inviting them to take part in the study. Appendix A provides a sample of the letter that was sent. Ten nominees agreed to participate in the study. During the data collection process, I discovered that 2 of the 10

participants had only been at their respective schools for two years instead of three, as stated in my criteria. However, I decided to include the two principals in my sample because although they had only been at their schools for two years, they were clearly established in their leadership position and were able to speak extensively about the knowledge sharing activities occurring in their schools and how they facilitated those activities. Table 3 presents a summary of the participants in this study. The particpants are presented here and referred to by pseudonyms to protect their identity. Pseudonyms were used for the names of the principals' high schools as well.

Table 3

Participant Profiles

Name	Gender	School	School population	Years of Service	Highest Degree	Years in Admin.	Primary Career?
Bart	Male	Meadow High	1000-1500	23	Ed.D	12	Yes
Michael	Male	Bear Mtn. High	1000-1500	25	Ed.D.	8	Yes
Jake	Male	Live Oak High	>2500	22	Ed.D.	13	Yes
David	Male	Crossroads High	1000-1500	7	Ed.S.	4	No
Sophia	Female	Middleton High	<1000	32	Ed.D.	19	Yes
Link	Male	Linkston High	<1000	18	Ed.S.	15	Yes
Joseph	Male	West River High	1000-1500	33	Ed.D	13	Yes
Vince	Male	Sun Rise High	>2500	23	Ed.S.	18	Yes
Alex	Male	Creekside High	1000-1500	13	Ed.D.	8	Yes
Donald	Male	Eagleston High	2000-2500	25	Ed.S.	13	Yes

There were nine males and one female who were interviewed for this study. Given the lack of diversity in the population of high school principals, it is not surprising that there is only one female and one African American male represented among the participants. There was diversity in other ways, however. The participants represented10different school systems from seven different Regional Educational Service Agency (RESA) districts from around the state. Not only was there geographical diversity among the participants, but also there was diversity in terms of the size of school each one led. School populations ranged between 600 and 2900 students, which has a direct correlation to the size of the faculty of each school. Participants' experience in education ranged between seven and thirty-three years. Their administrative experience in schools ranged between four and nineteen years. Of the 10 participants, 4 held Specialist in Education (Ed.S.) degrees, while the other 6 held Doctorates in Education (Ed.D.). Participant profiles are included in the next chapter, to give the reader a more complete picture of each of these principals.

Both Merriam (1998) and Patton (2002) suggest that determining sample size is a matter of judgement. My goal was to learn the most I could from the most information-rich cases possible. In qualitative research, saturation is the point at which the data that is being collected is redundant with data previously collected (Glaser & Strauss, 1967). Merriam (1998), in reference to sample size, contends that "what is needed is an adequate number of participants, sites, or activities to answer the question posed at the beginning of the study (in the form of the purpose statement)" (p. 64). As I collected data, I remained cognizant of these two guiding principles with regard to sample size. After my seventh interview, I realized that I was beginning to hear repetition among the

participants' answers to my interview questions. By the tenth interview I determined through data analysis that I had enough data to answer my research questions, and decided that no further interviews were needed, thus, there was no need to seek out additional participants.

Data Collection

This study was a basic qualitative research study. In-depth interviews were utilized as the primary source of data collection, with document review being used as a method of triangulation. Each of these methods is described in this section.

deMarrais (2004) uses the term *qualitative interviews* as "an umbrella term for those methods in which researchers learn from participants through long, focused conversations" (p. 52). Similarly, Rubin and Rubin (2005) assert that qualitative interviews are "conversations in which the researcher gently guides a conversational partner in an extended discussion" (p. 4). An interview, more significantly, is an instrument of data collection, with the interviewer or researcher acting as the instrument. In qualitative research, interviewing is usually in the format of the individual, face-to-face verbal exchange; however, interviews can also encompass phone conversations, and electronic communications via the internet. Many researchers use interviews to provide the researcher information about the participant's experiences, opinions, feelings, and knowledge (Rubin & Rubin, 2005). Interviews typically range from a highly structured design to semi-structured to unstructured (Patton, 2002). Conducting an in-depth, qualitative interview study will allow me the opportunity to learn more about leaders' experiences and perceptions of how they have facilitated and managed knowledge sharing in their schools.

The primary mode of data collection was semi-structured interviews. Appendix B outlines the interview protocol. According to Patton (2002), the semi-structured interview technique is designed in such a way to obtain similar information from all respondents. While the research topic is predetermined, this type of interview technique allows for some degree of flexibility, opening the way for an informative in-depth conversational style of interview. These interviews are designed to allow for a more natural flow of conversation between the researcher and the respondent, thus allowing increased flexibility in both the questions asked and the responses given (Patton, 2002). Because the purpose of this study was to discover new information, and to gain insight and understanding into how leaders facilitate knowledge sharing, I needed to hear from those who actually engaged in the process, in order to learn what it was like from their perspective. Prior to the start of the interview, each participant was asked to sign a consent form, indicating they had been informed about the study and that they were willing to participate. See Appendix C for an example of the informed consent.

Prior to the interview, I reviewed the school and school system websites, as well as the continuous improvement plans that were available to me at the school and/or system level. Reviewing these web-based documents informed my understanding of organizational efforts and emphasis on knowledge sharing. All of the interviews were conducted face-to-face, in a place of the participant's choosing. All of the principals except one chose to be interviewed in his or her office. One principal chose to be interviewed in the "war room," which was a meeting room with disaggregated school data posted around the walls. The interviews lasted between 40 and 80 minutes. All interviews were audio taped with the consent of the participants. Audio taping allowed

me the ability to accurately capture quotes, remember the intonation and emphasis that the participant used when speaking, and corroborate my field notes after the interview. After each interview, I recorded my initial thoughts and reactions to the participant and our conversation. I downloaded the audio file, backed it up, and stored the drive in a safe place. Interviews were transcribed within one week of the interview actually taking place. Most were transcribed within two to three days of the actual interview.

Data Analysis

Qualitative data analysis is essentially "the process of making sense out of the data (Merriam, 1998, p. 178). This type of data analysis demands inductive reasoning to search for important meanings and patterns in what the researcher has heard and seen. Bogdan and Biklen (1992) define data analysis as " the process of systematically searching and arranging the interview transcripts, field notes, and other materials that you accumulate to increase your own understanding of them and to enable you to present what you have discovered to others" (p. 153). The process of qualitative data analysis is recursive, and involves the ability to sense patterns in the data collected as well as both inductive and deductive thinking in order to develop interpretations to generate meaning (Ruona, 2005). The core process of qualitative data analysis is constant comparison.

The constant comparative method (Glaser & Strauss, 1967) is the identification and comparison of units or sections of data. Patton (2002) asserts that the understanding of unique cases is deepened by comparative analysis. Strauss and Corbin (1998) suggest that the constant comparative method allows for the generation of the maximum number of descriptive categories and their properties directly from the data from each transcript. Although generally regarded as the foundation of grounded theory (Patton, 2002),

Merriam (1998) recognizes its value to those not seeking to build substantive theory. The constant comparative method allows a "continuous comparison of incidents, respondents' remarks, and so on, with each other" (Merriam, 1998, p. 178). In this study, data collection, analysis and interpretation occurred simultaneously, as the integration of these processes allowed the analysis to be shaped by the participants in a more fundamental way than if analysis were left to the end of data collection (Ezzy, 2002; Merriam, 1998). Interview data were analyzed using a rigorous data analysis process developed by Ruona (2005). This process is grounded in the constant comparative method (Charmaz, 2006) and employs a basic word-processing program, giving the researcher the ability to easily sort coded and categorized data in multiple ways.

Documents were analyzed using the constant comparative method as well, using the same coding scheme, and were compared to the data from the participant interviews. Although each principal was asked to submit documents that might help me have a deeper understanding of how they facilitate knowledge sharing at their school, only three principals provided documents for review. Due to the low submittal rate, documents are not considered a form of data collection. I will discuss more about the use of documents for data triangulation in the section on validity.

Step One: Preparing the Data

First, I prepared my data by putting it into a manageable form. Interviews were transcribed verbatim within one week after the interview. After receiving the transcription from the transcriptionist, I listened to the tapes and made edits to the transcripts as necessary to have my data as clean as possible. Each interview participant and their high school were given a pseudonym and code number and all identifying

information was removed from the transcript. A confidential file that links the pseudonyms and code numbers to the original names of participants was kept in a secure location. The transcript text was converted into a table with each meaningful segment of data in its own row. The format of the table was such that there was a separate column for codes, ID, question number, turn number, the actual interview text (data), and notes. Figure 2 shows the table format for analysis. By formatting the data in this manner, you can "organize your data, separate it into 'meaningful chunks,' merge data across participants, and sort in a variety of ways" (Ruona, 2005, p.251).

Code	ID	Q#	Turn	Interview Data	Notes

Figure 2. Table Format for Analysis

Step Two: Familiarization

The next step in the analysis process, familiarization, in actuality begins during the first step. During this step, I continued to immerse myself in the data, listening to the tapes, re-reading the data, and making notes about what I thought was going on in the data in the notes column of the data table. I also began to identify potentially important data that I used as I progressed in my analysis. During this step as I simultaneously listened to and read the data, I typed in the ID number of who was speaking, as well as the question number that was asked related to the response in that particular row of the table. I began to analyze the data by separating it into meaningful segments, adding and

removing rows as was necessary. The first two steps of the process were repeated for the first three interviews before moving on to the next step.

Step Three: Coding

Coding involves a process of constantly moving back and forth between the data, re-categorizing and recoding as the data are compared. This is the third step in qualitative data analysis. In the constant comparative method, the researcher identifies initial codes and themes in the first few interviews, and then uses those codes for the subsequent interviews. However, with each new interview, new codes and themes may surface. The new coding scheme is then applied to the previous and subsequent interviews, hence the recursive nature of the process. Once I completed steps one and two for the first three interviews, I compiled a preliminary list of themes and codes that emerged from the interviews, assigning four- to five-digit code numbers to each category. I used that preliminary coding scheme to code the first three interviews, entering the appropriate code number in the Code column. Steps one, two, and three were repeated on all interviews prior to moving on to step four. As I continued to code the data from the remaining interviews, I discovered how truly an iterative process the constant comparative method is. As I moved through the data, I adjusted my coding scheme several times as new insights developed. Each time I made an adjustment; I went back to previous interviews and recoded the appropriate data segments. Appendix D presents the final coding scheme used to analyze the data.

Step Four: Generating Meaning

In this step, the qualitative researcher moves fully into interpretation of the data. Ruona (2005) asserts that qualitative data analysis is an art. Once all the data has been

coded and categorized, the researcher must go beyond the codes and categories to offer his or her own interpretation of what is going on (Wolcott, 1994). All the data at this point was merged into a master document that facilitated a group-level analysis of the data. By making a master table of the coded data, I was able to sort the data thematically to reflect on what themes were emerging across participants. As I reflected on the themes I identified, I continued to gain new insights which necessitated further editing of my coding scheme and recoding data. The sorting feature was valuable and allowed me to "think with my data" (Ruona, 2005) to interpret and generate meaning.

Validity and Reliability

Validity and reliability are major issues of concern to any research project. Although both validity and reliability are terms normally associated with quantitative research, qualitative researchers are also concerned with both constructs.

Validity

The concept of validity is concerned with whether a researcher has successfully measured what the research or study claims to measure (Merriam, 1998). Validity is a two-fold construct: internal and external validity. Internal validity, or credibility, is defined as the extent to which observations and descriptions are authentic representations of some reality (Merriam). The validity of this study was addressed primarily through member checks, peer review, accounting for researcher bias, and data triangulation (Creswell, 1998; Merriam, 1998).

First, I incorporated member checks, which involved sharing with the participants a copy of their transcribed interview and tentative interpretations, and asking each of them to comment on the accuracy and plausibility of the emerging themes. I received

responses from 6 of the 10 principals. All those who responded indicated they agreed with my emerging themes and offered no substantive feedback.

A second method I used to enhance the trustworthiness of my data was peer review. This involved sharing my findings with my major professor and colleagues as they emerged to ensure that I remained open to alternative meanings. During data analysis I also had a colleague familiar with my work code three interviews to check my coding scheme. This process brought to light a different interpretation of several statements made by principals, which in turn led to the recoding of a portion of the data.

Third, I accounted for any researcher bias by examining my assumptions and biases as they relate to this study through a subjectivity statement. Peshkin (1991) affirms the importance of examining researcher subjectivity when he states, "if researchers are aware of the personal qualities that have been activated during their research, they then can at least disclose to their readers where self and subject became joined" (p. 286). A subjectivity statement provides the researcher a way to surface the biases and assumptions they have about the research topic. Periodically throughout the research process, I referred back to the subjectivity statement I wrote, checking my interpretations of the data against the assumptions and biases I made explicit in that statement.

Finally, data triangulation was used to confirm emerging findings. McCullough (2004) states documents not only are primary sources of valuable data, but also can enhance the validity of a study through triangulation of data. There are multiple distinctions of document types: primary, secondary, solicited, unsolicited, paper-based, virtual, archival records, books, newspapers, periodicals, works of fiction, official data and proceedings, reports, diaries, letters, and autobiographies (McCullough). For this

study, I focused on solicited, paper-based or virtual documents which I hoped would provide insight into the leader's beliefs about knowledge sharing and leader actions to facilitate knowledge sharing. I also reviewed documents that contained further information about the strategies being utilized within the school/district and organizational factors present which may impact the leader's ability to facilitate knowledge sharing. Documents that were provided included school improvement plans, action plans, meeting minutes, and school brochures. Three principals provided documents for review, the review of which corroborated the data collected in interviews. However, due to the low document submittal rate, this is not considered a strong source of data triangulation.

External validity refers to the degree to which some representations can be legitimately compared across groups, or in other words, the degree to which the findings are generalizable to the larger population. Qualitative researchers view generalizability from a different perspective, as those researchers select purposeful samples in order to deeply understand a phenomenon (Merriam, 1998). From this view, the readers make the transfer of the results to their own situation. In order for this transfer to be valid, "the researcher has an obligation to provide enough detailed description of the study's context to enable readers to compare the 'fit' with their situations" (Merriam, 1998, p. 211). In-depth interviews, which were used in this research, can provide this rich and thick data that is required to enhance user generalizability. In addition, my commitment to tell the story of these participants' experiences in facilitating knowledge sharing necessitated my providing a detailed description of those experiences. The writing skills I have honed

over the years allowed me to take the thick, rich data provided in the interviews to clearly and accurately describe the experiences of these leaders.

Reliability

Reliability refers to the extent to which a particular measurement process produces the same results whenever and wherever it is conducted (Wolcott, 1995). Reliability can be problematic for the researcher, particularly the qualitative researcher, because, as Merriam (1998) posits, "If the researcher is the primary instrument for data collection and analysis, how do we know the researcher is a valid and reliable instrument? (p. 202). In other words, if the data are filtered through the researcher's biases, assumptions, knowledge, and worldview, it is unrealistic to expect different researchers to draw exactly the same conclusions (Merriam, 1998).

However, just as there are ways to ensure validity in a study, there are also ways to ensure reliability in qualitative research. Merriam contends that one way to ensure reliability is through the careful documentation of the entire research process, sometimes called an audit trail. The purpose of the audit trail is to enable others to understand and if desired to reconstruct the research process (Denzin & Lincoln, 2000). I kept a research log, which included accounts of the steps in my research process, as well as my reflections and insights on the process, in order to provide my audience with as much information as possible about my methods and collection procedures.

Researcher Bias and Assumptions

My prior experience as a teacher at the secondary level and current experience as an administrator has led me to form a set of assumptions about the way knowledge

sharing occurs, and about how leaders may or may not facilitate the activity. My assumptions are:

1. Organizational leaders have the ability to facilitate or inhibit knowledge sharing among faculty in a number of ways, through both their actions and their attitudes.
2. Leaders' beliefs about knowledge sharing and its relative importance in the overall strategy of the organization influences the strategies they employ and the behaviors they display in facilitating knowledge sharing.
3. There are factors beyond the control of the leader that affect the leaders' capacity to facilitate knowledge sharing.

In qualitative research, it is important to make explicit the researcher's subjectivity, bias and assumptions, as these will certainly surface during the course of the research (Peshkin, 1991). Appendix E contains my complete subjectivity statement related to this research study.

Chapter Summary

This chapter has reviewed the merits of qualitative research as well as the qualitative design for the study of how school leaders facilitate knowledge sharing in their organizations. Purposeful sampling based on a reputational case selection strategy was used to select participants for the study. Interviews and document analysis were used as the primary sources of data collection. The constant comparative method of analysis was used to analyze and to interpret the data. Issues of validity, reliability, and researcher bias were presented as they pertain to the research topic.

CHAPTER 4

FINDINGS

The purpose of this study was to understand how school leaders facilitate knowledge sharing. The research was designed to address the following questions:

- What are leaders' beliefs about knowledge sharing?
- What leader behaviors facilitate knowledge sharing?
- What strategies do leaders employ to facilitate knowledge sharing?
- What affects a leader's capacity to facilitate knowledge sharing?

The design of the study was qualitative, using interviews as the primary method of data collection. I interviewed 10 high school principals for this study. Each interview was transcribed verbatim. Data were analyzed using a process grounded in the constant comparative method (Charmaz, 2006). Ruona's (2005) model of qualitative analysis using Microsoft Word was used to code and to sort the data to derive themes. In all, 197 single-spaced pages were generated through the transcription process for analysis.

This chapter is divided into two sections. The first section presents a description of each of the 10 research participants. The second section presents themes from the data collected during the study.

The Participants

Ten high school principals from the state of Georgia were interviewed for this study. The principals were purposely sampled using a reputational- case selection strategy (LeCompte & Preissle, 1993). Nominees were selected for participation based on

two criteria: (a) principal of a high school that displays a commitment to knowledge sharing activities; (b) principal with at least two years' experience at their current school.

Principal Profiles

In the previous chapter, I presented a table that summarized the key characteristics of the participants of this study. Given the purpose of this study, it is important to acknowledge the participants and provide a more complete picture of each. Each of the 10 participants is described in fuller detail in the sections that follow.

Bart

Bart is the principal of Meadow High School, which is the single largest employer in the county in which it is located. He has been in education for 23 years, the last six of which has been spent as principal of Meadow. Bart was hired as principal of Meadow in large part because of the knowledge and expertise he possessed on smaller learning communities. During his tenure at Meadow, the school has implemented several smaller learning community initiatives for students, and has seen an increase in graduation rates over the past six years. He has been formally recognized for his accomplishments as a school leader, and was nominated by multiple individuals to participate in this study. Bart's easygoing and engaging manner was evident as he stopped to chat with a student and two staff members on our way to his office where the interview was conducted.

Michael

Michael has been the principal of Bear Mountain High School for five years. He began as an assistant principal of the school, and became principal when the previous principal retired. Michael has been an educator for the past 25 years, and never wanted to

do anything else. His belief that each teacher holds valuable knowledge, and that each one sharing his/her knowledge is critical to student learning drives much of what he does as a principal. As a result, Michael not only ensures that his teachers have opportunities to share with each other, but also to share with teachers from other schools in the district.

I met with Michael very early on a Monday morning before the school day even began. Arriving at 7:15 a.m. is the norm for Michael, and the absence of most of the office personnel made for a quiet environment in which to conduct the interview.

Jake

Jake is the principal of Live Oak High School, a beautiful school set amongst a tranquil grove of oak trees dripping with spanish moss. Jake began his career in education 22 years ago, and has spent the last thirteen years as an administrator at various levels. For the past nine years, Jake has worked at Live Oak, first as an Assistant Principal in charge of the Freshman Academy, and then as the principal. Upon meeting Jake, I was struck by his quiet, calm demeanor. He is a soft spoken individual, but displays a direct, straightforward communication style. While his answers were to the point, his quiet voice filled with passion as he related stories about how his teachers shared their knowledge with one another and the strategies they have in place to provide them with opportunities and time to share. I interviewed Jake in his office, which was decorated with memorabilia from the college he attended.

David

Education is a second career for David, who had a 20-year career in the military prior to becoming a social studies teacher and then school administrator. I knew David prior to interviewing him for this research study because we used to live in the same

town, so the interview took a conversational tone almost immediately. David is an engaging individual, and like Jake, has a clear, direct, communication style. David has the fewest years of experience in education of all the participants in the study; however, he is quite knowledgeable on the topic of knowledge sharing from his previous career. At Crossroads High, where he has served as principal for the last two years, David relies on his prior learning in the military about knowledge sharing and communication to help his teachers share more effectively with one another.

Sophia

Sophia clearly has a passion for educating children, which is evidenced by her long and fruitful 32-year career. For the past 13 years she has been principal at Middleton High School, a small high school located in a rural area of the state. She radiates energy and enthusiasm wherever she goes. I had the opportunity to visit Sophia at her school twice, since our first interview had to be rescheduled due to an emergency. On both occasions, I was aware of the number of individuals who came into the office hoping to speak with her, and she never turned anyone away. If she couldn't see them right away, she made an appointment for them. It was clear from the requests I overheard that staff, students, and parents value Sophia's input and expertise, as she made each individual feel important by taking the time to listen to them. Sophia stated that she believes knowledge must be shared through both formal and informal avenues, and that leader must model knowledge sharing for his/her staff. I had the opportunity to interview Sophia in her office, which is decorated with memorabilia from her long and successful career.

Link

Link is the principal of Linkston High School, a tiny school of approximately 600 in a rural, poverty-stricken area of the state. He has been in education for eighteen years, fifteen of which has been as an administrator. When Link became principal of Linkston, he was the school's sixth principal in eight years and teacher turnover was a huge issue. Link has just completed his sixth year at Linkston. He attributes his relatively long tenure and lower teacher turnover to his ability to build relationships and increase levels of trust among the faculty. Link holds a specialist degree and is working toward his doctorate. He believes knowledge sharing is critical to both organizational success and to effective social change. I interviewed Link in the "war room," which is a meeting room with disaggregated test data posted on all of the walls. There was a "Response to Intervention Pyramid" poster (a system used to determine the appropriate level of intervention needed to help students learn) on an easel in the corner. Link shared that teachers meet in this room often to share, plan, and strategize ways to help students learn more effectively.

Joseph

Joseph's career in education has spanned 33 years, spending the last thirteen years as an administrator at West River High School. Joseph's jovial persona makes him instantly likeable. Upon first meeting Joseph, I felt I had known him for years as he has the ability to put people instantly at ease. Joseph's excitement about his school, the students, and most importantly, what his teachers are doing in their classrooms as a result of sharing knowledge, is infectious. Before we began the interview, he invited me to take a tour of the school with him afterwards and visit several classrooms. I interviewed

Joseph in his office at the beginning of the school day. Afterwards I toured several classrooms with him.

Vince

Vince has been the principal of Sun Rise High School for six years. Prior to taking the position at Sun Rise, he spent twelve years in school administration in another state. I was excited to meet Vince and interview him, as he was nominated for the study by five different individuals. I was not disappointed. My first impression of Vince was that he is a humble man, who prefers to talk about his teachers and students more than he likes to talk about himself. Vince believes that knowledge sharing is particularly critical in large schools such as his. He has over 275 individuals on his staff, so while knowledge sharing is critical, it is also a challenge. That is why he focuses on developing a culture in which knowledge sharing is the norm. I met Vince in his office on a very stormy afternoon.

Alex

Alex has spent 8 of his 13 years in education as an administrator. He is in his second year as principal of Creekside High School, which is his alma mater. He carries a sense of pride that he is now serving the school where he was educated, and gratitude to the teachers who educated him and that he now supervises. I immediately felt a rapport with Alex when we met for the interview. He is the type of person who displays a genuine interest in others and seems to build relationships easily. This element of his personality serves him well as he works with his teachers to build relationships to facilitate informal knowledge sharing. I interviewed Alex in his office early one morning before school began.

Donald

Donald has spent 25 years as an educator, 13 of which have been in various administrative positions. He is finishing his fourth year as principal at Eagleston High. Early in his teaching career, Donald left the profession and worked in retail management and as a small business entrepreneur for 10 years. When he sold his business and returned to education, he brought with him the knowledge and experience gained from his years in the private sector. He uses that knowledge and expertise in his role as principal of Eagleston to create an environment where knowledge sharing is the norm and leadership is shared. Prior to my interview with Donald, he invited me to sit in and observe his administrative team during their weekly meeting. He clearly created a supportive climate for his fellow administrators, and provided opportunities for them to problem solve two situations. After the meeting, we met in Donald's office.

Themes of the Study

This section is divided into four parts to answer the research questions that guided the study. The first part examines leaders' beliefs about knowledge sharing. The second part focuses on leader behaviors that facilitate knowledge sharing. The third part presents strategies that leaders employ to facilitate knowledge sharing. The fourth part examines the influences on a leader's capacity to facilitate knowledge sharing. In total, the study resulted in fifteen themes identified during data analysis.

The focus of this section is on reporting the themes and the highly related subthemes that emerged. The themes are discussed here as they relate to the research questions. My participants spoke with great passion and concern regarding the topics we discussed. My goal as I report these findings is to place a heavy emphasis on allowing the

reader to hear the voices of the participants of the study through excerpted quotes from the interview transcripts. This study yielded extremely rich data with many of the participants sharing similar thoughts on the various topics. I have chosen to use representative quotes from participants, rather than provide quotes from every participant on each theme. In cases where participants shared slightly different perspectives on a topic, several quotes from a variety of participants are used to enhance the understanding of the theme or subtheme.

I will use a formatting technique used by Ruona (1999). Excerpts from actual interviews are separated from the text of this chapter. They are bulleted by a double-quote (“) and italicized. For example:

" *This is the format I will use when a quote is excerpted directly from the text of a participant’s interview. It is indented, bulleted by a double-quote mark, and italicized.*

A few lengthy quotes have been separated into multiple paragraphs; however, the new paragraphs within one participant’s quote do not have a double-quote bullet in front of them. That symbol is only used to represent a new quote by another participant.

Table 4 provides an overview of the themes that emerged during data analysis. Ryan and Bernard (2003) assert that themes are derived through both inductive and a priori approaches. In identifying themes, I adapted the work of Ryan and Bernard and looked for repetition of ideas, indigenous typologies or categories, and similarities and differences between thoughts and ideas presented by the participants. Using these approaches, I looked within each transcript as well as across participants to identify

themes. The data yielded four categories of themes that are associated with the research questions:

1. Leader's beliefs about knowledge sharing are related to process of knowledge sharing, learning and knowledge sharing, and importance of knowledge sharing.
2. Principals shared four major ways that they believe they facilitate knowledge sharing through personal behaviors:
    a. They lead by example.
    b. They set expectations for knowledge sharing.
    c. They empower teachers to share knowledge.
    d. They attract and select individuals that are willing to share with others.
3. Principals use four types of strategies, depending on their specific organizational needs, to facilitate knowledge sharing. They employ strategies related to structure, time, opportunity, and motivation.
4. There are multiple influences that affect a leader's capacity to facilitate knowledge sharing, including factors related to (a) the leader, (b) the teachers, (c) the organization, and (d) the external stakeholders.

Each of these themes will be discussed in the pages that follow.

Table 4

Research Foci and Themes

Research Focus	Themes	Subthemes
Leader beliefs about knowledge sharing	Knowledge sharing processes	▪ Relationships facilitate knowledge sharing ▪ knowledge sharing must be both formal and informal ▪ Leaders must facilitate knowledge sharing ▪ Knowledge must be shared across structures
	Relationship between learning and knowledge sharing	▪ Learning and knowledge sharing are highly connected ▪ We must be lifelong learners
	Importance of knowledge sharing	▪ Knowledge sharing is important to improve teacher practice ▪ Knowledge sharing is important to improve student learning ▪ Knowledge sharing is important for organizational success.
Ways leaders facilitate knowledge sharing through behaviors	Leading by example	▪ Reads and shares new learning with teachers ▪ Participates in formal knowledge sharing activities ▪ Builds relationships ▪ Initiates informal conversations with teachers ▪ Listens to others
	Setting expectations for knowledge sharing	▪ Provides a purpose for sharing ▪ Holds teachers accountable for sharing
	Empowering teachers to share knowledge	▪ Values teachers as important contributors Provides support to teachers ▪ Provides autonomy
	Recruiting and selecting individuals willing to share	

Research Focus	Themes	Subthemes
Strategies to facilitate knowledge sharing	Structural strategies	▪ Shared leadership structure ▪ Cross-content professional learning structures ▪ Course team structures ▪ Organizational restructuring
	Opportunity strategies	▪ Physically locating teachers together ▪ Observing and debriefing with colleagues ▪ Mentoring ▪ Book studies ▪ Having access to technology ▪ Networking with others outside the school or system ▪ Establishing common gathering spaces ▪ Establishing meeting schedules
	Time strategies	▪ Scheduled time for meetings ▪ Common planning ▪ Scheduled time for professional learning ▪ Common lunch
	Motivation strategies	
Influences on leader capacity	Leader factors	▪ Principal's own learning about knowledge sharing ▪ Principal's ability to recognize the need for knowledge sharing
	Teacher factors	▪ Teacher mindset ▪ Fear of taking risks ▪ Relationships
	Organizational factors	▪ Organizational culture ▪ Time ▪ Physical structure
	External factors	▪ District support for knowledge sharing ▪ External mandates

Leader's Beliefs about Knowledge Sharing

This section discusses the themes based on the first research question. Leaders shared their beliefs about knowledge sharing related to three areas: (a) beliefs about knowledge sharing processes, (b) beliefs about learning and knowledge sharing, and (c) beliefs about the importance of knowledge sharing.

Beliefs about Knowledge Sharing Processes

The first theme of this category related to leaders' beliefs about knowledge sharing is that leaders believe certain things to be true about knowledge sharing processes. The idea that relationships facilitate knowledge sharing processes is a strong subtheme in this category. This subtheme will be discussed along with two other subthemes in this category; knowledge sharing must be both formal and informal, and knowledge must be shared across structures.

Relationships facilitate knowledge sharing. All 10 principals believed that positive relationships among organizational members were foundational to successful knowledge sharing processes. The participants shared how one of the challenges to effective knowledge sharing is that strong, professional relationships take time to develop. One principal acknowledged that relationships take time to develop and build the trust necessary for knowledge sharing to take place:

> " *I think that everything is based on relationships and relationships are based on time and trust. There's not a shortcut for that. You've got to be able to build that with time, and you've got to be able to spend consistent time with the people in your organization and they've got to spend that consistent time*

> *with each other for them to be able to have the trust that really gets the ball rolling.* (Bart)

When the time is taken to develop relationships with colleagues, knowledge is shared more effectively. Another principal stated,

> " *I think we do a better job of passing it [knowledge] throughout the building because of relationships and the rapport that we've established over time in this building with the adults.* (Vince)

Clearly, these principals believed that strong relationships and high levels of trust are foundational to effective knowledge sharing.

Knowledge sharing must be both formal and informal. Another core belief about knowledge sharing processes that these principals hold is that knowledge sharing must occur through both formal and informal channels, with an emphasis on the informal. Five principals stated that informal sharing is just as important, if not more important, than formal sharing. One principal explained that in the beginning of his tenure as principal, they had to implement formal strategies to facilitate knowledge sharing. Now, it has become a norm for their school. Another principal related how the school environment and teacher mindsets have changed over the past five or six years, to the point where informal knowledge sharing is the norm:

> " *We don't have to structure a setting for them to do that [knowledge sharing] anymore. Much of it is informal. We can go now at lunch and in any number of places, teacher workrooms around the campus, we could go in there and it would be going on right now, in an informal setting. Whereas before in a*

department meeting there were one or two people dominating the conversation, there wasn't anything going on. (Vince)

A second principal shared examples of how she sees informal knowledge sharing occurring in her building:

" *…you would see teachers grabbing moments while they are supervising the change of classes and that sort of thing, that's the time when our math department, especially, get together and they'll stand there and discuss some summary they just did, or a standard, and "how did this go?" because they have common assessments now.* (Sophia)

Another principal shared the importance of informal knowledge sharing because it may be less threatening than in a formal setting, since

" *the flow of the information is more relaxed. They probably can talk about school probably three hours at Applebee's better than they can do it here. (Link)*

Knowledge must be shared across structures. The third belief related to knowledge sharing processes is that knowledge must be shared across structures, whether that is social structures within the organization or with others outside the organization. Six principals believed that knowledge needed to be shared not only across structures within the school, but across organizational boundaries as well. Related to sharing across structures within the school, principals had the following examples to share:

" *One of the things that we found very valuable this year is each of our departments; they share with the rest of the school about what they're doing*

in their department. And it's been really valuable because otherwise most teachers may not know what everybody else is doing. (Bart)

- *But everything else…we do is across curriculum. Because, I'm trying to break up the – 'well, we're science.' I think, through that, they've found they have a lot to offer, across the board, to other people.* (Michael)
- *We started, from the very beginning, erasing those artificial lines drawn around, especially in high school, by departments. Academics, CTAE, athletics, all that stuff.* (Sophia)

Principals acknowledged that good teaching practices cut across disciplines, so it makes sense to share across content areas.

Additionally, principals felt strongly that their teachers needed to share not only with other teachers in the school, but also with teachers from other schools. This is sometimes facilitated internally by the principal, as in the situation this principal shares:

- *I…let them go talk to some teachers that have done it in other schools. Let them come here. Let the teachers tell them. Again, not me. Let them tell them from their perspective. What did you encounter? What would you do differently if you could go back? What has worked? What worked well?* (Vince)

In other cases, the sharing is facilitated by an outside entity, as was the case at one principal's school by virtue of being a part of the Professional Association of Georgia Educators (PAGE) Redesign Initiative, a program to help schools implement school reform:

- *We started a PAGE initiative. We signed up with PAGE, and it's allowed us – we've sent several groups, and I know we sent a group out of our 9th grade academy and they're going to meet with other schools…and they bring back those ideas.* (Jake)

Four other principals shared the belief that it is important for teachers to network and share with others outside the school to bring in new ideas to improve professional practice and improve student learning. Some of the ways this sharing occurs is through vertical teaming between high school and middle school or elementary school teachers; professional learning conferences, and school visitations.

The leader must facilitate knowledge sharing. Finally, principals were steady in their beliefs about the role leadership plays in facilitating knowledge sharing processes. Eight principals acknowledged that the leader plays a major role in facilitating knowledge sharing by

- *till[ing] the ground a bit* (Link)

to provide an environment conducive to knowledge sharing, serving as a resource for teachers, and providing time, space, and opportunities for teachers to share.

Just as important, according to the participants, was the role that teacher leaders played in facilitating knowledge sharing. Two of the principals believed that teacher leaders are the best leaders for knowledge sharing. According to one of them, one of the first things a principal needs to do to facilitate knowledge sharing processes is

- *to recognize, acknowledge and develop teachers as leaders across the curriculum.* (Michael)

Beliefs about Learning and Knowledge Sharing

Another theme that related to principals' beliefs centered on the relationship between learning and knowledge sharing. Two subthemes are evident in this theme: (a) learning and knowledge sharing are highly connected, and (b) we must be lifelong learners. Data related to those subthemes are shared below.

Learning and knowledge sharing are highly connected. The belief that learning and knowledge sharing are highly connected was predominant among the principals. When asked what knowledge sharing looks like at his school, one principal shared that

> " *on our best days, we're learning from each other about different things that we wouldn't have thought to have talked to each other about.* (Bart)

Another principal viewed his role being that of an adult educator, and had this to say when asked about his role in facilitating knowledge sharing:

> " *It's not a matter of educating kids for me. It's about educating adults…That's the nature of the position. That's what we're supposed to be doing. You're not supposed to administrate. You're supposed to educate people. That's what I try to do everyday.* (Joseph)

Another principal also commented on the relationship between learning and knowledge sharing:

> " *We've got to be willing to learn some new tricks, if you will, some new tools to put in my toolkit, my repertoire. I've got to be willing to do that. And I've got to be willing to ask you. We've got to be willing to share. That's probably the biggest thing is getting past that, is being willing to learn and let somebody learn from you.* (Vince)

We must be lifelong learners. Central to the idea of the learning – knowledge sharing connection is the belief of these principals that we must be lifelong learners. Principals not only expressed that it was important for teachers to see the leader as a lifelong learner, but also as one principal stated,

> " *I think it's important for all of our teachers, as well, to be life-long learners.* (David)

Three principals talked specifically about the abundance of information available, and the need to stay current on the new discoveries that are being made in education on what seems to be a daily basis. Another principal made the point that we should all be "lead learners:"

> " *…there's a lot of research that talks about the principal being the lead learner and the instructional leader. Well, we've all got to be. I cannot be the keeper of knowledge, if you will. We've all got to be that.* (Vince)

The majority of principals believed that being a lifelong learner in part was a motivating factor to share knowledge with others. One principal best summed up the belief about the connection between lifelong learning and knowledge sharing:

> " *If you develop that mindset, there is a lot of natural sharing that will take place. If you seek knowledge, and you want to attain that knowledge, and once you get it, you can't keep it, you're going to have to give it to someone else, whether that's in a formal presentation or informal conversation. Somehow or another, you will want to share that knowledge.* (Link)

The Importance of Knowledge Sharing

The importance of knowledge sharing was a major theme identified in the data. The principals gave myriad reasons why they believed knowledge sharing was important for their organization; however, there were two major subthemes in the data: improving teacher practice and improving student learning.

Knowledge sharing is important to improve teacher practice. First, 7 out of 10 principals stated they believed knowledge sharing was important to improve teacher practice. Principals understand that there is valuable knowledge embedded in teachers which needs to be shared among the organization if they are to improve practice and impact student learning. One principal related this belief as he talked about seeing the need for knowledge sharing among his staff, by saying,

> " *We had this big old building full of knowledge, but, there was no sharing and there was no strength in numbers.* (Michael)

Another principal also believed strongly that there was valuable knowledge embedded in the teachers in his building, because his teachers have diverse backgrounds:

> " *We're diverse; we're military; we've got people from all parts of the country; people that have taught in other countries, who've traveled and lived across the world. So the ideas that they have or have been exposed to, I mean, that's an asset to our school, and we should be open to all ideas.* (Jake)

The knowledge that individual teachers hold can be used to improve practice across the organization, but only if it is shared with others.

Part of improving practice is related to building a common knowledge base, the principals shared. One principal stated,

> " *I realized if we are going to have dialogue, meaningful dialogue, about knowledge of instruction and curriculum and assessment and instructional delivery, then we had to have some common base knowledge.* (Sophia)

Bart asserted that sharing knowledge leads to common organizational knowledge which makes it easier to work together to improve. He shared that

> " *it's been the more that everybody here knows about the whole program the better we are, because we can support and appreciate each other*. (Bart)

One of the common threads among principals related to improving teacher practice is the idea that knowledge sharing causes teachers to be more reflective in examining their own practice. Sometimes this is an individual process. This principal stated that as a result of knowledge sharing, his teachers are more self-reflective:

> " *Maybe it's not always the kid. Maybe it's my presentation of myself. Maybe it's how I present the lesson. Maybe I need to change that. Maybe I need to look at a different way of trying to reach this particular kid. Maybe I need to differentiate some of the things that I do that I have power over to change the circumstances of my classroom to support student learning.* (Link)

However, examining practice does not only happen individually, but collectively as another principal shared:

> " *They sit down and they lay out their work and they go, 'this is a lousy assessment.' Or 'this is a bad question or this is a good rubric.' Or, 'this is how I'm really able to diagnose how the student is performing.' That's hard, slow, step-by-step work.* (Bart)

Collective examination of teaching practices is a powerful example of the importance of knowledge sharing, according to these principals.

Knowledge sharing is important to improve student learning. Related to the first reason why knowledge sharing is important is the second reason: to improve student learning. Nine principals shared that improving student learning is an important reason for teachers to share knowledge. One principal pointed out that

> " *the better we are at that [knowledge sharing], the more successful our students will be.* (Bart)

Principals shared, in fact, that improving student learning was, for some of them, the driving force behind finding ways for teachers to share with one another. A principal shared this:

> " *We were not being successful in any area because we weren't going out and finding new and innovative things. We were locked into teaching the way we'd been taught. And it's a different world.* (Michael)

While another principal agreed that knowledge sharing is important for improving both teacher practice and student learning, she placed more emphasis on the importance for student learning and talked about the two reasons as a continuum of sorts:

> " *So they talk about student learning and they're not talking about just so much their practice. Early on in their development of their base of knowledge, it was about their practice all the time: "Well, how did you do this?" "How did you do that?" What I'm hearing more and more now is 'What did the students do?' as a result of what* [the teachers] *were doing. And, I think that's a lot*

> *deeper level conversation. When it gets to student learning, that's what it should be about, not what the teacher did.* (Sophia)

Other principals also placed importance on knowledge sharing to improve student learning, making comments about the importance of making content relevant and engaging for students, and producing more high school graduates as a result of improved student learning.

Knowledge sharing is important for organizational success. While not stated explicitly by most principals as a reason why knowledge sharing is important, half of the principals indirectly related it to organizational success. One principal attributed the overall success of the school in making Adequate Yearly Progress (AYP), as well as the respect that they have earned from other schools for their innovative programs to the way they share knowledge. He stated,

> " *We've been successful as a school. And, in great part, it's not just what we've done or our results, but it's been the way we've done it.* (Bart)

These principals realized that society tends to judge the organizational success of high schools on test data and graduation rates. However, these principals also judged the success of their organization by the processes they implemented.

Ways Leaders Facilitate Knowledge Sharing through Behaviors

This section presents the themes related to the second research question. Principals perceive they facilitate knowledge sharing through (a) leading by example, (b) providing structure and support for teachers to share knowledge, and (c) attracting and selecting individuals that are willing to share knowledge with others.

Leading by example

Principals shared numerous ways they believed they facilitated knowledge sharing by leading by example. The most cited ways of leading by example were reading and sharing new learning with faculty, participating in formal knowledge sharing activities, building relationships with teachers, initiating informal conversations, and listening to others.

Reading and sharing new learning with teachers. Alex, Michael, Vince, and Sophia all talked about the need to read professional literature to stay current on trends, and to share that information with their teachers.

- *I think the first thing you have to do as a leader is you have to – I'll use a church term – you have to be in the word. You have to read. You have to know what's going on in your profession. You have to know…what kind of studies are going on, what the results are…* (Alex)
- *I read constantly. They're forever giving me a hard time about reading constantly…So, they'll come to me and say, "Have you read so-and-so?" and I'll say, "Yeah," and then I'll talk to them about it.* (Michael)

Vince and Sophia both mentioned that they regularly read and share information with their teachers, and highlighted how doing so can initiate good discussions with teachers about curriculum and other issues.

Participating in formal knowledge sharing activities. Another way that principals cited as a way they model knowledge sharing is by participating in formal knowledge sharing activities, such as department meetings, professional learning communities, book

studies, etc. Eight of the principals were participants in the formal knowledge sharing activities in their school. Some of these principals were active participants:

> " *I participate in every structured activity for the knowledge sharing. We are very adamant about our professional learning communities in this school.* (Link)

Another principal was also an active participant in many of their formalized knowledge sharing activities, stating that it was not only what a leader should do, but that is helps him personally:

> " *I participate in all of those things that we talked about earlier. That's important. …I think it's important to truly be a well-rounded individual in a leadership position.* (David)

Other principals felt that their presence was important, but that if they participated actively too often it stifled the teachers' voices. One principal explained that while sometimes he wants the teachers to see him actively involved and as a part of the sharing, he believes that it can lead to teachers sharing what they think he wants to hear:

> " *Sometimes they will want to say what I want them to say if I'm facilitating. And even though I try not to share my feelings and thoughts, they're still grasping for what they think I want to hear.* (Michael)

These principals made the point that they want their teachers to present differing points of view so that all sides of an issue can be explored and the best solution can be reached.

Builds relationships. As relationships were important in principals' beliefs about knowledge sharing processes, it is not surprising that principals model relationship building with their teachers. Seven of the principals talked extensively about how they

build relationships with their teachers to facilitate knowledge sharing. For some like Vince, it was doing little things like making sure he could put a name with the face of each of the 275 staff members within the first month of his arrival, because as he stated,

> " *I thought that was important for me to be able to call them by name.*

Now, they have a staff composite made during pre-planning each year, so that staff members can use it as a tool to familiarize themselves with other staff members. For others, such as this principal, it was showing his staff he cared about them. He explained,

> " *I came into an environment here where people were – I won't go into a lot of detail – people were beat down. I just loved them. They know I care about them. And they know I care about the kids.* (Alex)

Other principals offered examples of getting to know teachers in social settings, or making sure that they recognize the hard work and efforts of staff members.

Initiates informal conversations with teachers. Part of building relationships is having informal conversations with teachers. Principals offered this as another example of how they model knowledge sharing. Half of the principals talked about the ways that they model informal knowledge sharing with their teachers. Some examples are included here.

> " *I think more gets done in the one-on-one conversations I have with teachers. This time of morning I'm in the building usually – we don't release the kids from the cafeteria till 8:05. I'm in the classrooms saying, "Hey, how are things going? You trying this? How's it working? How's A/B going for you?" …But a lot of times I get more done at the lunch table than I do anywhere else. We go to lunch by areas of the building and a lot of times, well all the*

time, my entire language arts department is on lunch at the same time, and I'll pull up a chair with my eight ladies from the language arts department and we'll just talk. I'll say, "What do you think about these things?" Or, "What do you think we want to see as a result if we try these different initiatives?" They get to pick my brain, but in turn, I get to pick theirs. (Alex)

- *I also will informally have lunch with the staff members. In some cases we'll just walk around the track and talk, informally, about the things that will help us in the process of becoming a school of academic excellence.* (Link)
- *Well, I think they see I'm an idea person. It's rare for me to go a day without seeding an idea with somebody. That's common knowledge about the school. There are those who seek to be seeded…I think it's being available to have informal interaction.* (Bart)

Principals also mentioned the importance of being visible in the building so that the likelihood of informal conversations taking place would increase.

Listens to others. Finally, principals asserted that listening to others, "having an open door policy" as many of them put it, was an important way to model knowledge sharing. One principal believed that his willingness to listen to his faculty has aided in their successful knowledge sharing efforts:

- *I think that probably was a big variable: the fact that I would be willing to listen to them. They would help me mold and shape the process of how to get it out to everyone else. I think that's been the biggest positive variable for that process. Once we reached that point that afforded us the opportunity to set aside specific amount of time, ritual.* (Link)

Another principal stated that his willingness to listen to teachers helps them to have more confidence in sharing their ideas:

> " *They know I'm willing to listen. It gives them a lot of freedom, a lot of confidence to have ideas. I've worked for principals… you might as well not have an idea because if it wasn't his idea, we weren't going to do it. I really go to the table completely open minded.* (Alex)

Willingness to listen to others also builds trust among the parties involved. Sophia shared an example of how she participated in a dialogue with her teachers on the merits of teaching leveled classes, such as College Prep English and Tech Prep English. Through the dialogue and her ability to model listening skills with her faculty, they were able to make some needed changes. The key to all this, however, was the trust that was built through the leader's willingness to listen and dialogue with the teachers.

Setting Expectations for Knowledge Sharing

Nine principals mentioned at least one way in which they set expectations for knowledge sharing. There were two subthemes in this category: providing a purpose for sharing and holding teachers accountable for sharing.

Provides a purpose for sharing. Seven principals indicated that they set expectations for knowledge sharing by providing a purpose for the sharing. This may occur through framing a problem, setting a goal, or confronting them with the data on their students, as both Sophia and Vince shared. Another principal believed providing purpose was just as important as providing a structure for knowledge sharing:

> " *Just getting people together isn't enough. You've gotta get people together and give them a purpose. It's alright, maybe, if they find a greater purpose,*

but if you get them together with no purpose then you're not going to get a lot of results. Give them structure; give them purpose. (Bart)

Holds teachers accountable for sharing. Another way that principals set expectations for knowledge sharing is by holding teacher accountable for the sharing that takes place. This is the idea of "inspecting what you expect." Two principals shared that they hold teachers accountable for sharing, and offered examples. One principal recounted a situation related to accountability:

" *I realized…those times when you expect teachers to have that dialogue, that there had to be expectations of an outcome, and usually a product, and not a checklist. Something that couldn't be so time-consuming that they were spending all their time just producing the product, because the process was what was important. But they had to see: we have to get this work done, have this conversation and to be able to come to this outcome that's going to be inspected at the end and be turned into someone – and not evaluate or judge, but to give feedback on.* (Sophia)

Another principal shared that he holds teachers accountable for sharing knowledge in small groups by asking the small groups to share with the whole faculty:

" *We don't have full group staff meetings all the time. What we do ask our folks to do is share. When you've come to a consensus on what we're going to do to make this better, when we get in our large group meeting, we're going to ask each group to share with the staff and answer questions that the staff may have concerning what we're talking about.* (Alex)

By sharing with the whole faculty, the small group is being held accountable for the sharing they have done, as well as continuing the knowledge sharing process by sharing with the rest of the organization.

Empowering Teachers to Share Knowledge

Principals empower teachers to share knowledge by valuing teachers as important contributors of knowledge, providing support to teachers, and by giving them the freedom and autonomy to share. Empowering teachers to share was one of the strongest themes identified in the data. All 10 principals contributed examples of how they empower teachers through one of the previous mentioned methods.

Values teachers as important contributors of knowledge. Most frequently, principals talked about how they value teachers as important contributors of knowledge. One principal stated that by valuing the contributions of the teachers, they see themselves as part of the process. He shared,

> " *We really honestly take input and mold our decisions based on what they give us. I've always been a believer don't ask people what they think about it if you're not going to use it.* (Alex)

Provides support to teachers to share knowledge. Other principals recounted numerous ways they provide support to teachers to help them be willing and able to share with their colleagues. Some of those ways included providing frameworks to facilitate sharing, providing substitutes for teachers to be able to conduct peer observations and have dialogue, utilizing an instructional coach to share best practices, and sharing classroom data with teachers. One principal shared a story about how she helped her science teachers be able to share:

" *And science teachers…they could not talk…They'd say, "We don't know what to do," or "I don't want to take on that role"…So we had to develop a protocol for them to conduct an actual departmental meeting, so that everyone had a role and everyone knew what the outcome of this dialogue was supposed to be. It had to be that artificial for a while until they could do it without it.* (Sophia)

Provides autonomy to teachers. Other principals talked about the need to provide autonomy for the teachers so they feel they have the freedom to share. For some, it was accomplished by

" *creating a structure in which they're not just looking for me to be the one sharing the information.* (Bart)

Another principal offered the following example of how he provides that autonomy to his teachers:

" *We've said, "Listen; here's a list of things that we're trying to accomplish. We want your feedback on these things. Go. And, come." And sometimes we participate in those group meetings and sometimes we don't. We want them to openly share with one another and not feel threatened in any way.* (Alex)

Oftentimes, providing teachers with autonomy means letting others facilitate the sharing. One principal asserted that most knowledge sharing in his school is facilitated by the teachers, because

" *they will share more if they are empowered to do so by giving them the autonomy they deserve.* (Donald)

Another principal related a similar story by describing the autonomy she provides to those on the school improvement team:

> " *When they present it to the faculty, it's a group of them that have created this instead of me trying to create or just a small school improvement team creating more work to put on a teacher's plate…There's more buying in into the action step.* (Sophia)

By allowing teachers to take control of the process, there is more buy-in because they are the ones who have developed the plan.

Attracting and selecting teachers with a willingness to share

Six principals connected their school's successful knowledge sharing practices to their hiring practices. One principal stated,

> " *We've deliberately hired teachers who are more apt to collaborate.* (Bart)

Another principal said he selects teachers who will fit into their knowledge sharing environment:

> " *I know that I've told no to some folks that are probably great teachers. But I am a big picture kind of guy and I am putting together the pieces of a puzzle. I cannot have a good teacher thrown into an environment where they may not be a good fit for our environment*. (Alex)

One principal shared what he looked for in a teacher, and laid out his criteria

> " *somebody whose personality is first of all that they like kids, and second of all will be trainable; and third of all will be honest with me about what works and what doesn't.* (Joseph)

Link currently has a high retention rate among his staff (92%), but because of an aged faculty, he sees hiring as an opportunity to bring in fresh talent that can learn from his veteran teachers before they retire. He shared:

> " *We do have a lot of people that retire because we do have an aged staff. Right now that's part of the change process, bringing in young, new, and exciting, high potential individuals to be trained by older staff before they leave me in two to three years.* (Link)

Another principal mentioned that it has become easier to attract teachers for positions at his school because of the way they work together. He shared that

> " *through relationships and we know each other, we have been able to attract people from surrounding school districts that know what we're doing and what we're about and where we're going.* (Vince)

The data also held evidence that principals sometimes make other personnel decisions that ultimately create the right mix of individuals so that knowledge flows freer. Two of the principals both recounted stories of high turnover rates in their first few years at their schools, due in large part because they were coming in with a new philosophy about how teachers should work together. For one principal, the 40% turnover rate was due primarily to teachers choosing to leave. For another principal, it was different. In his first two years he had to initiate some personnel changes so that the organization could move forward. He stated that some teachers retired, some transferred, and he had to have a couple of hearings; but, once the changes were made "the silent majority" spoke:

> ″ *It was just like they'd blossomed. It was like the adults in this building, I mean it was literally like [snaps fingers] somebody flipped a switch. It was amazing*

> *to me, the way they treated each other. And that was when those adult relationships… it was more of the personnel changes …that freed them up to share that knowledge among themselves. But before that it hadn't been happening. It hadn't been happening prior to that. That was a significant event in the adult culture in this building.* (Vince)

Strategies to Facilitate Knowledge Sharing

When asked about the strategies they used to facilitate knowledge sharing, the principals talked extensively and shared numerous examples of strategies they used to facilitate both formal knowledge sharing and informal knowledge sharing. There are four themes related to strategies: (a) structures, (b) time, (c) opportunities, and (d) motivation.

Strategies Related to Structure

In general, principals used structural strategies to facilitate formal knowledge sharing. There were four subthemes within this theme: (a) shared leadership structure, (b) cross-content professional learning structures, (c) course team structures, and (d) organizational restructuring.

Shared leadership structure. Using a shared leadership structure is a primary strategy that principals say facilitates knowledge sharing. All 10 principals in the study employed a shared leadership structure at their school; however, the exact make-up of the structure varied from school to school. For most principals, the leadership structure of the school extends beyond the administrative team to include department chairs, and, in several cases, representation from guidance, special program directors, and instructional coaches. They meet on a regular basis, usually weekly, and for some, as in David's case, the meeting is open to anyone who would like to attend. The intent of the shared

leadership structure, according to the principals, is to share knowledge and decision making with the staff. Here are some examples of what principals had to say about the purpose of using a shared leadership structure:

- *All of these folks meet together to plan, and I should also say that constant collaboration fits into our shared governance and shared decision making and shared thinking that we do at the school.* (Bart)
- *I'm working with people; nobody's working for me. Nobody's working under me. We're working together, and inside all of our circles are different tasks that are our responsibility to see that they are done so that everything can stay smooth, focused, deliberate and effective and efficient.* (Sophia)
- *Instead of the leadership being so vertical, allow it to spread abroad, to spread out and be horizontal.* (Link)

Shared decision making was an important component of the shared leadership structure. One principal stated,

- *Ideas don't just come from the top down or the bottom up. They come from lots of different places and we try to take time to build consensus and develop them.* (Bart)

Shared decision making was an element that principals said created opportunities for knowledge to be shared because it involved actively participating in the process, which is more than just taking a vote. Another principal offered this explanation of why shared decision making is important at his school:

- *I can make mistakes. I'm grown. Ideas that I thought might be effective, they can bring up areas I didn't think of, which I think that is just an asset, to have*

> *your faculty that talented, that you need to use…So that's really the method that I – I really believe in listening to all sides and all opinions before we make the final decision.* (Jake)

Yet another principal gave an example to illustrate how shared decision making was enacted in her school:

> " *As we had study groups to study the different reforms, they had to report to the rest of us how that reform model related to the rest of what we had in place. Then we chose. I think going through those processes takes them, you know "well, I think this" and "I think that" – well, it really doesn't matter what I think if it's not based on something. We make decisions that are grounded in, I think, a good decision making model: going to the knowledge, going to the facts, going to the data and the research to guide those things.* (Sophia)

Another important component of the shared leadership structure that most principals talked about was the school improvement, or continuous improvement, team. In instances where principals identified a school improvement team as a way that knowledge is shared, the team was often part of, or extension of, a larger leadership team. This principal shared an example of how sharing occurs through his school improvement committee:

> " *We have 12 focus groups that run through the steering committee. Each one of those focus groups has about 20 teachers. There could be a group of teachers on policy, ones on curriculum, professional development, 9th grade transition, post-secondary transition, so…They focus on those particular areas. Those*

> *committees meet once a month also. That gives them an opportunity to share with each other in their specific area…If it's a policy here at the school that they want to see implemented or want to see changed, they collaborate with each other, they do the research. A lot of times they'll come to me with ideas.* (Jake)

Using a shared leadership structure that was representative of all areas of the school, sharing decision making, and incorporating school improvement team members into the leadership team are important ways that principals provide an organizational structure for knowledge sharing.

Cross-content professional learning structures. Principals also identified cross-content professional learning structures, sometimes referred to as professional learning communities, or professional learning teams, as a strategy for sharing knowledge across departmental boundaries in the school. Typically these structures met on a regular basis, either during planning periods or before school during a time dedicated to the activity. Five principals shared examples of how cross-content professional learning structures were used to facilitate knowledge sharing. The following quotes are representative of the comments that principals made:

- *We take on different issues. We help design classes. We actually, last time, we were designing a math lesson for Math I and II. We broke down Math I and II in our design team. That's language arts people; that's other people. It's made up of all different areas of the school.* (Michael)
- *We do it during planning period. It's not a department; it's cross-curriculum. So if your planning period is first period, you come together. Each of the lead*

peers was given a group project to develop, and everyone picked a different one. (David)

- *We've been doing this for a year now, or is it a year and a half? Teachers have begun to talk to each other and to share ideas with each other and to understand that you don't have to plan with an English teacher just because you're an English teacher, that there are some things that are cross-curricular. It's wonderful to watch the light bulb come on over their head when they discover that you can do the same lesson in French that somebody did in English.* (Joseph)
- *What we have this year is we made smaller learning communities out of everyone that was on planning together on either A day or B day.* (Alex)

In some cases, these structures are used occasionally to deliver professional learning, such as technology trainings or instructional strategies, based on teacher need. In all cases, principals indicated that a cross-content strategy was needed to help overcome the insular nature of teachers and the departmentalization that is inherent in high schools.

Course team structures. Although cross-content structures were a popular strategy that principals identified, three principals mentioned course team structures, a strategy that allows teachers of the same subject to collaborate and share knowledge with each other. One principal said that course team structures allow teachers to

- *develop common lesson plans among themselves. They can choose some different activities, but they're all working on the same standard.* (Sophia)

During course team meetings teachers can look at student data based on their assessments. Another principal stated,

" *They meet weekly, working on benchmarks. And, obviously, they're analyzing results. It gives them a chance to research and collaborate with each other.* (Jake)

Organizational restructuring. One final strategy that principals identified related to structure was organizational restructuring. While facilitating knowledge sharing was not the primary reason for organizational restructuring, principals shared that new organizational structure such as Career Academies and Freshman Academies, which are smaller learning communities for students, provide new opportunities for teachers to share. In such situations, teachers often are either housed together; share the same students, or both. One principal shared what Career Academies look like at his school when teachers share with one another within an academy:

" *The career academies, as far as taking concepts - like with Shakespeare. You take the Shakespeare that you'd have in a language arts class and try and build the interdisciplinary units within the academies. So, you have teachers working together to help students learn the concepts. You know, that would be…That would be a difficult concept for a lot of students to learn. But if you spread it across each content area, it's more likely that they will learn that concept.* (Jake)

Another principal shared a similar situation with the Freshman Academy at his school:

" *They can plan, review the success of the students in the 9th grade academy, where the problems are, what are some things that we can do to improve the level of interventions to make the 9th graders successful. We realize here in our organization that if we do not get our 9th graders to the 10th grade, boy,*

> *we got trouble on our hands. The 9th grade academy teachers really work hard in that capacity to really help our kids to be successful.* (Link)

The common element for organizational structures is that the structure is implemented based on a student learning need, but because the teachers all teach the same students, the structure provides opportunity for those teachers to share about the needs of the students they teach. This idea will be discussed further in the next section.

Strategies Related to Opportunity to Share

There were several strategies that principals used to provide opportunities for teachers to share with one another. Those strategies include (a) physically locating teachers together; (b) observing and debriefing with colleagues; (c) mentoring; (d) book studies; (e) having access to technology; (f) networking with others outside the school or system; (g) establishing common gathering spaces; and (h) establishing meeting schedules.

Physically locating teachers together. When asked what they do to facilitate informal knowledge sharing, three of the principals stated that they looked at who they need to be sharing and then physically locate teachers near each other. This principal indicated that locating Career Academies together had increased opportunity for teachers to share:

> " *Because of career academies…it's given them an opportunity to share more than they have in the past.* (Jake)

Another principal shared his philosophy on why he purposefully locates teachers:

> " *I think the more that they talk with each other and just see with each other. Typically, if you're a teacher in a school, you spend most of your time with the*

> *teachers whose rooms are near your room, and you spend time with people who are teaching the same thing you teach because you've got something in common there, and who have the same planning period that you have.*
>
> *We try to think about those things meaningfully. We'll move rooms. We don't let people cement their stuff into the walls. We'll move them around for a meaningful purpose because that does matter: who they end up with. For example, we don't have a 10th grade academy, but most of our 10th grade teachers are all near each other, intentionally. It gives them that moment of serendipity to be able to pop in on each other.* (Bart)

Observing and debriefing with colleagues. Providing opportunities for teachers to observe colleagues as they teach and then debriefing is another strategy that principals used to facilitate knowledge sharing. Sometimes this occurred through a demonstration classroom or model classroom, other times it occurred through informal peer observation. Principals provided instances where they directed a teacher to a classroom to watch a specific teacher, as evidenced in the following quotes:

- *The role of administration in that is to…to direct people to the right rooms to watch people.... and then to have an opportunity to have conversation when it's over.* (Bart)
- *If it's a teacher that we've suggested they go to see someone do something, an instructional coach, an administrator, a department chair, or someone may go with that teacher so that then those two people can have dialogue and guide what they're seeing and then reflect with them afterward what you saw. The demonstration teacher, then, also gets feedback on their performance as well*

> *as the person who's seeing it reflects and is guided through a certain reflection to push it to a deeper level instead of just go in and see it and really the person sitting there watching the bulletin boards and how she listed the class rules. You have to help focus on what the purpose is.* (Sophia)

> *" I took two teachers the week before spring break and they shadowed a student during the day. …They kept a record of what happened in those classes and what it felt like to be a student in those four classes on that day, and some things they saw that they liked and some things they didn't like, and we're going to talk about that this week.* (Joseph)

Mentoring. Providing mentors to new teachers or teachers new to the school was another strategy identified by principals. Providing a mentor for new teachers gives them *"a go to"* person in the building. One participant stated that mentoring was

> *" …not just a program, but somebody that can help show them the way. You can't feel intimidated by letting me come in your room and you come in my room. I don't care what the subject is.* (Vince)

The same principal explained that the mentoring process happens over time:

> *" Not just being a one day exercise, that has really helped them. We pair them with somebody within their department, usually across the hall or next door, that they can go to. Their planning periods aren't always the same, but we even try to make that happen when we can. Just somebody they can go to when you got a question.* (Vince)

Three of the principals who talked about mentoring specifically assigned new teachers each to a particular teacher. One principal shared his rationale for the way he assigns mentors:

> " *I assign them specifically. That's one of the things I do. Because our new people have to have somebody strong, confident, or they're vested in the community. They know the people in the community. They know the students pretty much, their brother or sister – all of it. I do match them with our best teachers. Our new to our best teachers. The good thing about it? They say, 'Hey, I love doing it. Who do you want me to help?'* (Link)

Another principal took a group mentoring approach which involved his design team:

> ″ *Our design team, our entire team takes our new teachers. We don't assign them a person.* (Michael)

While mentoring programs serve a variety of purposes, one principal related how he perceived that the mentoring program at his school facilitated knowledge sharing:

> " *There are 9 or 10 mentor teachers here who've been teaching for more than five years and make mentoring an active part of their weekly routine. I assign new teachers a mentor teacher. Some mentor teachers have two or three new teachers. It's nice to have somebody they can go to other than their department chair. It's another face, a friendly face. When things get hard and they are depressed, and this didn't work, and so-and-so failed, and this parent yelled at them, you gotta have somebody to go to. And that helps a lot, too.* (Joseph)

Book studies. Another strategy identified by half the principals was book studies. Principals varied on whether the book studies were a required part of professional learning or whether they were voluntary, or whether they were whole staff or in small groups. Most believed, though, that book studies were a way to provide opportunities for informal knowledge sharing to occur:

- *Book studies…allow them to reflect upon their own teaching. …But when you do those book studies, it opens up the door for further communication with each other to say, "Well, I do it this way," and "I do it that way." Everyone, from the secretaries, to our parapros, to the teachers, do a book study. And I tell them I don't care how long it takes. It's one book a year. Just sit down; you pick it, and we'll go…the administrators have just started their second book study. It's* Ignorance is No Defense*. It's about laws for kids. It's a great book, but it also allows for us to get together and really share ideas and what we're doing, and what we need to fix, etc.* (David)
- *I always gave them a book to read, a leisure book, something positive, motivational, inspirational …But then we started looking at things like* Effective Instructional Practices, Classroom Instruction That Works*. Good, sound, solid, research-based information that we required of them. We would do one in the fall and then we would make it optional in the spring. Now we've gotten to the point where our folks, and it's not 100% of our staff but most of our staff, is so ingrained in that and now they're kind of hooked on it, it doesn't have to be mandatory anymore. It goes on. We buy the books. We*

provide that. I made the choices the first couple of years. After that, I let the leadership team. (Vince)

Access to technology. Providing access to technology, such as email and shared folders on a server are ways that principals use technology as a strategy for facilitating knowledge sharing. Technology was only mentioned by three principals, which was surprising to me given the abundance of technology presently available. One principal uses the school website to share opportunities with teachers. Through this page he can let them know about field trip opportunities, professional learning opportunities, or funding opportunities among other things:

" *On the front page of our web site, we have put together a bulletin board, and it's called Opportunities.…As principal, I don't go a day without getting some sort of opportunity for somebody that crosses my desk. …when I put it on the opportunity page, then it's open for anybody … field trips, opportunities for them to go and study, workshops. I throw something up there about RTI, and three people I probably wouldn't have thought were interested emailed me back and go, "count me in." Being able to present that sort of information is important.* (Bart)

Another principal shared how his teachers use technology such as email and message boards:

" *They communicate with each other on their focus teams and departments by email and also we have the blackboard website that's set up, with the minutes of the meetings, the steering committee, every time they meet the minutes are sent out to the whole faculty so they know what's taken place with the steering*

> *committee. And we have the school improvement data, we have a shell that's created that they can log onto and that helps with communication and collaboration in the faculty.* (Jake)

Using a shared folder on the school's server was another use of technology to facilitate knowledge sharing:

> " *We use what we call a shared folder on our server. Any information that we want to share with the staff, formally or informally, we put it on our shared folder under school improvement items. Or, we'll have a folder, say we want everybody to take some time out to go to the differentiated folder and look at some of the new research about differentiation, differentiated instruction; or, if we want to focus on formative assessment, or we want to focus on self-efficacy, we put those items – quick reads.* (Link)

Networking opportunities with others outside the school or district. Principals explained that it was valuable for teachers to network with others outside the school or district to bring in fresh ideas. This was a strong subtheme, with six of the principals discussing this strategy extensively. Principals discussed the reasons why they felt networking opportunities were important for teachers:

> " *One of the things I'm real comfortable with and we do here is share with other people at other schools. In big part the reason behind that is that it's the right thing to do, but beyond that in education we must all hang together or we'll all certainly hang separately.* (Bart)
>
> " *…when we were part of the GLISI* [Georgia Leadership Institute for School Improvement], *that was a great opportunity to provide an outlet for those that*

attended to branch out and say, "Well, so-and-so is doing it this way." I do think that as the demands for accountability, [which] the level continues to go up, that we have to branch out and try to talk to others. We have a tendency to say, "How is so-and-so doing this?" Or, "Go contact such-and-such school and find out what they're doing." That networking provides for opportunities [to share]. (David)

Principals offered specific examples of different types of networking activities:

- *We have folks come here all the time and our folks go. We'll send them by the carload or two car loads. I think that's as beneficial as anything. What's our identified problem? Who's somebody that's doing it well? We'll go send them. You go sit down and talk to them a day.* (Vince)
- *We want them to go and see other teachers doing that particular standard, sharing information. I will bring this out: we partner with the Georgia department of education in a lot of ways.* (Link)
- *Well, we started a PAGE initiative… and it's allowed us – we've sent several groups, and I know we sent a group out of our 9th grade academy…so that gives them a chance to meet with other schools. And they bring back those ideas. And, we hosted an AP workshop. A lot of our teachers presented, so there's AP teachers from all over the state, so it gives them an opportunity to share. That was great because it was here.* (Jake)

Providing common gathering spaces. While not a common subtheme, two principals mentioned that providing common gathering spaces was a strategy they used to facilitate informal knowledge sharing. One principal mentioned the "war room," a term

two principals used to refer to a room where all of their school data was posted on the walls, and there was space available for teachers to meet:

> " *Now, you've probably not been down to our war room, but our war room is all about data. It's everywhere on the walls. Everyone knows that if they need to know what our graduation rate was last year that they can go there. If they need to know what our SAT* [Scholastic Aptitude Test] *scores are, you go there. During our meetings that we hold, it's there on the walls. It's a central location that anyone can go to.* (David)

Another principal also mentioned the war room as a place where teachers could gather to talk, but he also identified the teachers' lounge as a place where informal knowledge sharing could occur:

> " *We have a teacher's lounge, and this is another location [the war room], where we're at now, where teachers can come in and have their meetings or they just come down here and say "Hey, I'll meet you down in the war room and we can just kind of relax and have a good time."* (Link)

Strategies Related to Time

A third theme related to the types of strategies these principals use to facilitate knowledge sharing is time related strategies. Time strategies are closely related to opportunity strategies; in that setting aside time creates an opportunity for sharing. The strategies are grouped according to time or opportunity based on the context in which the principal discussed the strategy. The strategies related to time that principals identified fall into four categories: (a) scheduled time for meetings, (b) common planning, (c) scheduled time for professional learning, and (d) common lunch. Principals also talked

about the importance of using time related strategies, as evidenced in the following quotes:

- *Your schedule reflects what you value as a school just as your outlook and your checkbook determine what your priorities are as an individual.* (Bart)
- *Having that committed time that's going to be set aside to have that opportunity to share professionally with each other…I do think you have to have a formal time for that to happen.* (Link)

Scheduled time for meetings. Providing a scheduled time for sharing knowledge through a variety of groups was a strong subtheme among the principals. One principal explained how they have built teacher collaboration into their school day schedule:

- *We build in teacher collaboration into our schedule. On Thursdays, students have a "late-in" and our teachers come in early, so from 7:30-8:45 we have a sharing time, a collaboration time that's built for teachers.* (Bart)

Two principals shared how they set aside a specific day of the week for meetings of different types, which allows for the opportunity for sharing:

- *We have four after school meetings that occur. We have departmental meetings, faculty meetings, the career academy meetings, and then the school improvement focus teams. And then those are usually- Tuesday is our meeting day.* (Jake)
- *Every Thursday they know we're going to have our focused school improvement meeting, automatically. They know they are going to have their departmental meetings to talk about what kids are being successful. What can we do to help our gifted kids? What can we do to help our ESOL* [English

Speakers of Other Languages] *kids? What can we do to help our special needs kids? Things of that nature. So we really talk about every single kid.* (Link)

Scheduling collaborative planning after school was another way that one principal shared to set aside time for knowledge sharing:

> " *The other part of it is that the 10th through 12th grade, we'll set up a collaborative planning day. Unfortunately, it happens after school, but that's the only time that you can have everybody come together.* (David)

Sometimes the amount of time available before, during, or after school isn't enough time to really get into the important conversations. One principal shared her strategy for dealing with that challenge:

> " *A few times we've had a full day meeting, but we will have a retreat in May where we'll go away from school….But, we'll really look at data, pull out data from the closing of the school year and just get that fresh start and focus for the new year and that sort of thing...* (Sophia)

Providing common planning. Providing common planning for teachers was a popular strategy among principals, as they indicated it has the potential to facilitate both formal and informal knowledge sharing. Five principals used common planning as a strategy for Freshman Academy teachers. The following quote exemplifies what principals felt was a benefit of common planning for Freshman Academy:

> " *In the ninth grade academy, every teacher there has common planning, which is great. They have set days where math department teachers meet. They have set days where clusters meet. They have set days where they all meet. And,*

> *that process, although it eats up your planning, provides a conduit for you to make sure that you're all taking care of the same type issues.* (David)

One of these principals used common planning as a strategy for tenth grade teachers as well. He stated that common planning gives teachers an additional time to share:

> " *Now...many of our grade levels, for example, all of our 9th grade teachers, we have a freshmen academy, all of those teachers have common planning, and so our, we, have an extra time in addition to that when people can work together…*[and] *all the 10th grade teachers have common planning.* (Bart)

Another principal indicated that he used common planning time for course teams:

> " *We got common planning for teachers in the content areas. …They meet weekly, working on benchmarks. And, obviously, they're analyzing results. It gives them a chance to research and collaborate with each other during their common planning time.* (Jake)

Scheduling time for professional learning. Principals also identified scheduled time for professional learning as a time related strategy that facilitates knowledge sharing. Four principals offered ways that they use professional learning time as a strategy for knowledge sharing. By setting aside time before, during, or after the school day, or utilizing built-in professional learning or teacher work days, principals were able to provide time for knowledge sharing to occur. One principal described how, on staff development days, he dedicates a portion of that time to a World Café activity, which allows teachers to share on a variety of topics:

> " *Every time we have a half day, an early release day, we'll World Café, and we'll have four or five basic questions that we have surveyed the staff on.*

> *Things that they want to know. Or school issues, academic issues that they want to discuss and how to improve those. Then we'll World Café it and we'll send that information out and discuss it.*
>
> *It's very open. I'm walking table-to-table, but I don't say a word. I don't try to go listen to what somebody's saying bad or good. I just move around and give them a great opportunity to move around and share. And they do a really great job with it, of sharing* [knowledge]. (Michael)

Another principal mentioned

> " *We have our own in-house staff development here that we do every Thursday.*

However, he also saw the need to give teachers additional time based on circumstances:

> " *I'm giving our ninth grade English and ninth grade math people a day sometime in the next couple of weeks. I want them to spend a day together. …I want them on the same page. I want some common assessments. I want some idea about where these kids are besides the CRCT* [Criterion Reference Competency Test]. …*And where we want to take them during the course of the year. How do you determine who's going to be in the support class and who's not? Because we cannot continue to offer support to 95% of our math kids.* (Joseph)

Providing common lunch time. Three principals shared that providing common lunch for groups of teachers was an important way to encourage informal knowledge sharing. This is a strategy that is closely related to both time and opportunity. Principals talked about common lunch as a strategy to facilitate knowledge sharing by assigning specific groups of teachers to the same lunch.

- *We give them a shared, common lunch time so if they want to go in their work room and have lunch together, by departments, they can do that.* (Michael)

However, it is important to note that one principal mentioned that teachers may use their lunch time to informally share with other teachers who happen to have the same lunch time; in other words, the common lunch wasn't planned, but sharing occurs just the same.

- *…like with our Engineering Academy, those teachers have their own section in two wings that all those teachers are housed in, and they have the same lunch. So, they eat lunch together.* (Jake)

Strategies related to motivation to share. When asked about rewards for sharing knowledge, principals talked about both extrinsic rewards for knowledge sharing, and the intrinsic motivation that they perceive teachers to have to share knowledge. Related to extrinsic rewards, the principals shared the following numerous examples:

- *The hook here is that if you participate in 14 of the 16 sessions in a semester, you get two PLUs* [Professional Learning Units] *without ever leaving the building*. (Joseph)
- *Our PLTs* [Professional Learning Teams], *I forgot to tell you that they meet 18 to 24 times a year, and they get two staff development credits. PLUs. They get those. We write those for them, and they get that.* (Michael)
- *Once, we had a grant and the demonstration teachers were paid, I think, $500, which is not that much, but we paid them $500, and we gave it to them at Christmas, so it was all at one time, for them to be willing to be a demonstration teacher when asked.* (Sophia)

- *Well, we do teacher of the month, now. And we do get input from the department heads. We specifically look at different categories to score the teacher on and one of the categories is information sharing within the department and across the school. We also look at partnerships. How do you partner with other teachers in the school? Whether that's in a co-taught situation or you're doing a research study together or a project together, or whether you're just supporting a particular standard that's being covered in another class.* (Link)
- *And Shared Suffering, or Teachers as Leaders, or whatever you want to call it, but giving them an opportunity to lead more.* (Michael)

Two principals also spoke about the intrinsic motivation to share knowledge that they perceive among their teachers:

- *We don't have that money anymore so now it's what they think of as a professional expectation. It's more intrinsic. When it really becomes intrinsic, you can't pay the value of that, which is really great.* (Sophia)
- *I think they see themselves as part of the process. That we're not shoving anything down their throats.* (Alex)

Helping teachers develop an intrinsic motivation to share was important to these principals.

Influences on Leader Capacity

Throughout the interviews, principals either directly or indirectly discussed factors that had the potential to influence their ability to facilitate knowledge sharing.

Four themes were identified in this category: (a) leader factors, (b) teacher factors, (c) organizational factors, and (d) external factors.

Leader Factors

Factors related to the leader themselves influenced the importance placed on knowledge sharing in the organization. Two subthemes were identified within this theme: the principal's own learning about knowledge sharing and related sources of learning, and the principal's ability to recognize the need for knowledge sharing.

Principal's own learning about knowledge sharing. Six principals stated that their learning about knowledge sharing had been informal and through experience. When asked about how they came to learn about knowledge sharing, the principals had this to say:

- *…much of my learning has come from knowing that all levels of school teaches a lot of different things about how to become better at whatever level we are.* (Bart)
- *Probably just through experience. This is my 18th year as a high school principal and you know just through the years, picking up and learning from other schools.* (Vince)

Some of the sources of learning about knowledge sharing are identified in the quotes below. Two principals mentioned elementary and middle schools as a source of learning about knowledge sharing:

- *We can learn a lot from elementary from the way that those teachers collaborate and the way that they really mine into specific minutiae that really help them focus on students in an individual, specific cognitive level.* (Bart)

- *I think what's helped our teachers a lot to get to the point is doing so much more with the elementary and middle [schools]…* (Michael)

Another principal mentioned research as a source of learning about knowledge sharing:

- *I think research is pretty much out there, throwing it at you, saying, "You really need to look at this." And, we looked at. I think there are some good, positive things that come from it. It goes back to – probably one of the most essential parts of it is that you just have to have open communication in order to be successful. Everybody has room to change and room to learn.* (David)

The work by Phil Schlechty, which provides an organizing framework to help teachers begin to share knowledge with each other regarding teaching and student learning, was another source of learning for principals:

- *I read some field selected material from* Working on the Work, *which is all about collaboration, and all about sharing, and all about teachers as leaders. So, I had picked up a book,* Shaking up the Schoolhouse, *and read that. And that kind of intrigued me…*(Michael)
- *Like Phil Schlechty, there's not, I've been around long enough that just because something is the latest and greatest fad, I'm not really interested in jumping on board, but Phil Schlechty has been around for a long time and it's all research based. That's more what we're interested in.* (Vince)

Only one principal stated that he had learned about knowledge sharing through formal means:

- *Actually,* [I learned] *through professional development and personal aspiration to obtain a higher degree. In my higher degree program, that has*

been the focus: How do you disseminate knowledge, effective knowledge throughout the organization that you are a part of for student achievement? (Link)

Collectively, the comments made by these principals illustrate how they increased their knowledge about the importance of knowledge sharing.

Recognizing the need for knowledge sharing interventions. The second subtheme related to the leader's capacity to facilitate knowledge sharing is recognizing the need for knowledge sharing interventions. When asked about what prompted the need for the knowledge sharing strategies they identified, principals stated the following:

- *Because we had so much to share, but nobody was sharing. When I looked at what we needed to do to improve, I think I saw that and that was important.* (Michael)
- *So, one of the surveys – we're a High Schools That Work* [a reform initiative] *high school and in one of the surveys that we complete every year, the faculty said that one of their biggest concerns was the lack of collaboration with teachers in other content areas. We have about 200 teachers on the faculty here, so a lot of people don't even know each other.* (Jake)

Another principal stated that the need for knowledge sharing interventions came about because she realized they needed a common knowledge base:

- *I really was very fortunate because I learned that lesson early in my career. When we first opened this high school, we had closed other high schools and brought the faculty and staff to the consolidated high school here together. We opened with 4 x 4 block schedule, which was all brand new. …Certainly that*

> *takes a lot of different teacher preparation to plan and teach for 90 minute periods. In trying to prepare teachers for that, primarily the summer before the school was to open, I realized, 'Oh my gosh, our base of knowledge just about instruction, curriculum, assessment, student learning, just our whole practice, was very low.'* (Sophia)

Teacher Factors

Teacher factors, and primarily teacher mindset, were identified as a major influence on a principal's capacity to facilitate knowledge sharing. There are three subthemes related to the theme of teacher factors that affect a leader's capacity to facilitate knowledge sharing: (a) teacher mindset, (b) fear of taking risks, and (c) relationships.

Teacher mindset. Teacher mindset, or their beliefs about education, teaching practices, or student learning, can either enhance a principal's ability to facilitate knowledge sharing or be a barrier to the process. One principal shared the mindset of teachers who are "on the bandwagon" for knowledge sharing:

> " *There are five pretty strong personalities, teacher personalities, on the design team. And, they have trouble understanding why I don't make people do something. Because I don't have that power. But they don't understand. They want people, by George, to tow the line. Let's all get on this bandwagon.* (Joseph)

However, most principals shared that teacher mindset is often a barrier to knowledge sharing:

- *I think there's still a group, and it's a small group and the number is diminishing every year, is there's still an attitude of – it's not apathy, but it borders on being apathy. It's almost a belief…that these kids can't learn what we need them to learn.* (Vince)
- *I think a barrier for me is how set teachers get in their ways. I truly believe, and my wife is a graduation coach now, but she taught for 13 years and there's a comfort zone that they get in that I don't understand. I only taught 5 years, so I never got in that comfort zone. But I think a lot of teachers get in that comfort zone and that is a huge barrier…*(Alex)
- *We had a very experienced staff that were good teachers…by the seat of their pants because they had done it for a long time and they'd done it well. But they didn't know what they knew and they certainly didn't know what they didn't know. To change the whole paradigm of the sage on the stage and to prepare for 90 minute teaching and to talk about engaging all learners, differentiation, and some of those things, I realized people just looked at me with blank stares. They wanted to be effective teachers, but they really thought what they'd done for 15, 20, 25 years was going to carry them through the rest of their career.* (Sophia)

Six principals shared that resistance to change is a major barrier that they face in attempting to get their teachers to share and discuss their teaching practices and their students' learning. Some representative quotes of this theme include the following:

- *You've got some that don't want to share. That's been one of those Ah-ha! moments for me and something that I've shared with a lot of different people*

that I have a lot of respect for and go to for guidance, is what about the ones who've been around for a while, or maybe not been around for a while, who don't want to get on board? You know, they do a great job of being here every day, doing their duties, going in their class, doing their thing. But what do you do? (Michael)

- *The bad part for schools, or any organization really, not just schools, but we think about it more because that's where we live, is that there is a certain degree of cynicism in the change that comes around. When you have a bad implementation of anything, it can cause future implementations of good things to suffer.* (Bart)
- *But the adults: we are a little bit more skeptical; we're a little bit more hesitant, especially when you want me to get out of my comfort zone. "I've been doing this. I'm ok." And the other thing - I should have said this - that was going on in this building was that folks were very complacent. What I mean by that is when you looked at the overall scores for the class, for the school, SAT, graduation tests, end of course tests – on the surface, they looked real good. We were outperforming everybody around us, everybody in our RESA. We were above the state average, not by much, but on the surface they looked good. A lot of people were going, "What? Why are you trying to turn this – upset the applecart we got going here. We're fine."* (Vince)

From outright resistance, to cynicism, to skepticism and complacency; all were mentioned as reasons why teachers were resistant to change. However, three principals also talked about the need to overcome teachers' resistance to change and get them to buy

into knowledge sharing. One principal shared the need to involve teachers in the actual development of the strategies:

> " *I think you have to start with your school improvement team, your steering committee. Let them develop the strategies. Make sure it's them. Let them. Because they're the ones that's gotta do it, and if you don't let them develop it, believe in it, buy into it, then it's not going to be successful.* (Jake)

Another principal believed that getting teacher buy-in affects their ability to facilitate knowledge sharing in a positive way:

> " *And then you get buy-in from your main players in your staff, they're going to pull everybody else in that's in their circle. Everybody's going to be on the same page. Everybody's going to see the same prize and the finish line. Everybody's going to see the same steps on how to get there. But, again, it takes time, and you must be patient. You must be patient.* (Link)

Finally, one principal stated once they began to see an increase in student learning as a result of what they were sharing, the teacher buy-in increased:

> " *Then the next year we made [AYP] again, and the scores went up again, not just all five graduation tests - the graduation rates, attendance, drop-outs went down. Discipline. So, I mean, we began to have some hard data to look at as well. I think that really helped us get over the hump, so to speak. And the buy-in at that point was like a tidal wave. I couldn't have stopped it. It's kind of snowballed since then, but I really think that was a pivotal point. We came off the Needs Improvement list and it just started growing.* (Vince)

Fear of taking risks. Teacher fear of taking risks was identified as another factor that influenced a leader's capacity to facilitate knowledge sharing. One principal stated that teachers may fear being ridiculed for their ideas:

> " *I think the same challenges that anyone else would have of, no matter what it is, of "you should know the answer to that." "What do you mean, you're doing that?" In just the concern or fear of ridicule for a bad idea or a bad thought. I think that's a barrier.* (David)

Another fear that principal's acknowledged was that teachers may worry what others will do with the knowledge that is shared, as is evidenced in this quote:

> " *You don't want anybody to know information because you don't want them to know bad information about what you're doing. … And, what are they going to do with this information? And, if I share with someone, is that a good thing? If I tell everybody everything I'm doing.* (Bart)

While fear of taking risks was acknowledged by the next principal, what is demonstrated in the following quote is how he tries to alleviate the fear of taking risks in his teachers, which hopefully translates into reducing the fear of sharing knowledge:

> " *I tell our folks all of the time that if you can convince me that if something is sound, and it's effective, and it's good for kids, I'm willing to try it. We're not afraid to fail. I mean, we work hard, again, at trying to foster that atmosphere of our teachers being risk takers, but risk takers when there's something to be gained from it for our kids. Not just to roll the dice kind of thing. I tell them that the worst case scenario is that if it doesn't work, we can always go back to the way we've been doing it, and we haven't lost anything. But if you come*

> *onto something and it is good for kids and it's effective then let's share that down the hall.* (Vince)

Relationships. Relationships, and their importance to knowledge sharing processes, are talked about in several different themes, and are also a subtheme related to teacher factors that influence a leader's capacity to facilitate knowledge sharing. Principals shared that teacher relationships, with other teachers as well as with the principal, and the level of trust present in those relationships are a factor in how easily knowledge sharing is facilitated. One principal related teacher relationships to the flow of knowledge in the building, stating,

> " *…once you have the relationships, I think the information, and communication, and knowledge flow freer.* (Sophia)

Another principal shared how he believed that personal relationships were the key to effective knowledge sharing and changing teachers' mindsets:

> " *Knowledge sharing is what we're going to do to make those things better. That can be difficult with teachers who are too comfortable. It really can. But I think the only way to break through that barrier is with quality personal relationships with the staff.* (Alex)

Providing opportunities to build relationships was a primary way that principals worked to make teacher relationships an enhancer, and not a barrier, to their ability to facilitate knowledge sharing:

> " *We do a lot of things. We do a lot of fun things here that put people together in safe and harmless situations so that we get to know each other, and get to like each other, and trust each other.* (Bart)

Another principal also acknowledged the importance of providing opportunities to build relationships among teachers in social settings:

> " *About three years ago we started it, and it's worked well. It is that four times a year we have a social right after school. They come up with a theme and we just pay for it. We do ice cream sundaes one time. They did sub sandwiches or pizzas one time. They did homemade desserts. It doesn't matter to me what the theme, but the whole agenda is we don't have an agenda in the sense of we're not going to conduct business. The whole idea is you've got to go to somebody on this staff you don't know, introduce yourself and spend a few minutes getting to know them. That's the impetus for the social.* (Vince)

In reflecting on what a principal needs to do to be able to effectively facilitate knowledge sharing, one principal said,

> " *Not only should he establish a trust from the staff for him, but he must also trust, or she must also trust the staff and their capacity to bring about change or help that process.* (Link)

Another principal talked about the importance of being transparent in order to build that trust that is so important:

> " *I said, they think we're up here making some kind of major decisions without including them so teachers need to know right after a school improvement meeting exactly what was discussed, what the agenda is. One of the teachers chose, and said she could do it really quickly, put together some minutes and emailed them out to everyone so teachers realized we're not sitting up here talking about, should we have two lunches or three lunches, and how the*

> *buses line up and who's going to have lunch duty and who is not and all that kind of stuff. That it was much deeper than that.*
>
> *And some department chairs were not, we had to do some surveys to find out because nobody wanted to tell on their department chair, but some department chairs did not go back and redeliver in the spirit that it was done in school improvement. And the way that they acted in school improvement, that they agreed, or – so we had to do some surveys to uncover some real feelings, and it became a trust issue that we – me – do care and do want to extend this arm of power and control and autonomy and efficacy and all that down to, across the entire school.* (Sophia)

Organizational Factors

A third theme related to the question of what affects a leader's capacity to facilitate knowledge sharing is organizational factors. There were three major subthemes within this theme: (1) organizational culture, (2) time, and (3) physical structure.

Organizational culture. Admittedly, culture can be one of the most difficult organizational aspects to change (Schein, 2004). The principals who participated in this study acknowledged that culture was a factor that had either a positive or negative influence on the leader's ability to facilitate knowledge sharing in the organization. Principals shared that when knowledge sharing is not a cultural norm, a change has to occur in order to create the environment where it can take place and is expected to happen. One principal shared the results of a three year process of change:

> " *Jim Collins in* Good to Great, *which was one of the first books we did, talks about confronting the brutal facts. And folks, here they are. This is us. These are our kids. These are our numbers and we got to deal with this.*
>
> *That is what helped us really start making significant strides. And that's when our teachers really went to work, not just helping kids who were middle of the road or the kids who were high-flyers. That's when the culture or attitude of this building changed to say, "Maybe we do need to give him a chance," or, "Maybe we do need to spend a little bit more time with her." …We flourished after that.* (Vince)

Another principal agreed that changing the culture of the school is necessary when no value has been placed on knowledge sharing:

> " *Here in our organization, the process for sharing knowledge, sharing failures as well as successes has really taken root because whenever you go through, for us, the change process to get the environment in a position where it can support that kind of professional learning you have to till the ground a little bit.* (Link)

The same principal also acknowledged that the change process is slow, stating that it took about three years for his staff to begin to share knowledge regularly with one another.

Two principals specifically spoke of the importance of having an organizational culture that is more collective than individual:

> " *That is …what we want everyday with our students and our teachers is that people who have different things to say and people who have different thoughts, they manage to come together because of the way we organize*

ourselves. And that they share those things and that together we become better than we would have been apart. That whole concept, to me, is at its roots. (Bart)

- *We are collectively smarter than we are individually. Collectively we have made this commitment* [to knowledge sharing] *and I will protect that.* (Sophia)

The same principal indicated that what her staff valued as a collective was more important that what one individual might believe:

- *I believe in a lot of autonomy, and teachers are the content specialists and all that, but nobody has the right – and if any new teacher or veteran teacher that's still here thinks that their philosophy, any different from that what we've said collectively, is going to survive here is terribly, terribly wrong – they do not have the right to come here and think, "No, that's crazy. I'm not going to do that; I'm going to do so and so. I'm going to lead a coup and everybody else is going to be doing that." You'd best go on down the road if that's your plan.* (Sophia)

Although two principals expressed their opinions on the value of a collective culture, most principals, including Bart and Sophia, discussed the culture of isolation that is dominant in high schools. In general, principals indicated that this culture is a major barrier to their ability to facilitate knowledge sharing. Most of what the principals had to say on the topic was related to the identification of a problematic culture. The following quotes provide examples of the principals' comments on the isolated nature of high schools:

- *…if I can back up a little bit and talk about how schools, high schools in particular, 9-12 institutions traditionally have operated, and this is not just my perspective, but just the common canon on 9-12 education from most of our history, in particular the years following World War II and leading up into maybe the 80s and 90s, depending on where you were, high school teachers were much more isolated than their colleagues in middle schools and elementary schools and much of that was the design of how those schools operated structurally within the schools themselves and also just by the scope of the work for individual teachers.*

  There's a lot of good about high school, as well, because those teachers do become experts in a particular topic. But that, in and of itself, pushes people to become CEOs of their own organizations: the chief executive officer of Room 209. (Bart)
- *Teachers are, by nature, insular people. They tend to get in their little room, build their little cocoon, close the door, and not come out, except maybe to stand in the halls during class changes.* (Joseph)
- *And I think it's natural in high school to be an isolationist. You know, "I'm a specialist. Give me my book and let me get in my room and leave me alone."* (Michael)

Given this dominant theme in high school culture, principals see the culture of isolation as a barrier to knowledge sharing, but also a reason for sharing knowledge. One principal declared,

> " *If we work in a vacuum where you're just in your four walls, which I think there's a lot of teachers that want to be left in their four walls, they'll teach the same way year after year after year. That's not always beneficial. I think by sharing that information that we talked about earlier in this conversation, I think that each of them develops professionally.* (David)

Time. When asked about the barriers to knowledge sharing that they and the teachers face, 5 of the 10 principals identified time. The amount of time available for knowledge sharing activities was another important organizational factor that affected a leader's capacity to facilitate knowledge sharing. Sometimes the involvement of teachers in sponsoring extracurricular activities makes it difficult for teachers to get together after the school day:

> " *But we are really struggling with extracurriculars that everybody has on them, we're finding it difficult for our grade levels to meet together because we get out at 3:20. By the time the kids get out of the building, it's 3:30, 3:35, and we get off at 4:00. A lot of them at 3:30, they're headed out to coach this or that and it's difficult. And we want coaches in our academic areas. I think it's awesome. …But it does make it very difficult for folks to get together. So, we're going to tweak our system next year to make it where our groups can get together.* (Alex)

Another principal agreed, by saying,

> " *I think that's* [time] *always going to be a factor. By the end of the day, people work so hard that it's hard to sit down and have a really meaningful,*

intellectual conversation and your brain is just burned. So, time is, of course, the major problem. (Sophia)

Yet another principal stated he has tried to overcome the time barrier by having cross-content meetings during planning periods:

- *Time. Obviously, that's one, and we've tried, through the PLTs,…without making them feel forced, is put them in those situations where it happens. I think time.* (Michael)

Finally, one principal saw time as a factor in implementing knowledge sharing strategies:

- *Time. It takes time. Nothing happens overnight.* (Joseph)

Physical structure. The third subtheme in organizational factors is physical structure. The size of the campus and configuration of buildings were both mentioned as potential barriers to facilitating knowledge sharing. One principal talked about how they have a beautiful campus, but the configuration of buildings is a hindrance to facilitating knowledge sharing among some groups of teachers:

- *Well, I suppose that some of the things that are challenges that work against us a little bit – is one, this is a beautiful facility. It's much like a college campus. It's a beautiful facility. But, there are classrooms that, I could walk to my house about as quickly as I could walk to that classroom. …My cosmetology teacher may have really a lot to share with my psychology teacher, but they got to mean to get together because they are a long way from each other. That's something that's a challenge for us.* (Bart)

Another principal mentioned that a barrier

> " *… is the size of the school. That's why we went to the smaller learning communities.* (Jake)

Jake explains in another part of the interview how they are physically reorganizing by Career Academy, which will mirror the organizational restructuring they have done. By doing so, the teachers who share students will be near one another which the principal hopes will facilitate knowledge sharing.

Another principal identified the size of the school as a barrier to building relationships, and shared an example of how he has tried to overcome that barrier:

> " *This* [idea for teacher socials] *came out of our faculty advisory council. They said, "You know, we don't even know if you teach-" We're on about 70 acres and we've got over five hundred thousand square foot under roof. They said, "I don't even know-" and we hire between 20 and 22 teachers every year, so, "I don't even know Ms. So-and-so or Mr. So-and-so that teaches on the other end of the E wing, and I'm in J wing;" just different buildings. And so they came up with the idea, and I was a little bit hesitant but I went along with it. About three years ago we started it, and it's worked well.* (Vince)

When combined, these examples of physical structure as a barrier create a picture of how difficult it may be in some schools, just by virtue of the way the school is laid out, to facilitate both formal and informal knowledge sharing. However, we also see two examples from Jake and Vince of how they were able to address this type of barrier.

External Factors

Finally, principals shared factors outside their school that influence their ability to facilitate knowledge sharing. Within the theme of external factors, there are two subthemes: support for knowledge sharing and external mandates.

Support for knowledge sharing. One factor that is external to the school and has the potential to either positively or negatively influence a principal's ability to facilitate knowledge sharing is whether or not there is support for knowledge sharing at the district level. One principal spoke about how much easier it was to implement knowledge sharing strategies with district support:

> " *And, of course, having the central office and the superintendent and the board members on board with it, keeping them in the loop about the process and how it's all going and what new ideas and things you are getting ready to attempt to do and to offer them an opportunity to have input on the process. Because, see, your board members know the community, probably in ways you don't. The superintendent is in a different information arena than the leader at the school. If you can tap into all of that, those different arenas of information, that's going to help you with the process much quicker.* (Link)

The same principal also acknowledged that aligning school vision with the district's vision helped create support externally:

> " *Also, aligning the vision of the school with the vision of the district. That's – a lot of times I don't know how many people really talk about that, but you have to make sure your visions are aligned with each other. That's important*

because the success of the board is dependent upon the success of the school. And the school's success is dependent on the buy-in of the board. (Link)

Another principal mentioned the importance of having a supportive superintendent, particularly when trying to develop creative solutions to problems:

> *" Another example is we have a superintendent that thinks outside of the box. Our previous superintendent was adamant that we all be the same. Our new superintendent is not. We have been on block schedule for 13 years. Last year we had conversations with our superintendent. We aren't really pleased with the way a lot of our test scores are going. My theory is if you continue to do what you're doing you're going to get the same results. I think the schedule has an impact on those results. I was told the only thing I couldn't do is go away from 90 minute blocks because our community supports that.* (Alex)

External mandates. External mandates also can either positively or negatively influence a principal's ability to facilitate knowledge sharing. One principal described a situation where he ended up backing off some of his initiatives because the district was requiring so much of the teachers:

> *" I know the, you know, a lot of times, I feel the initiatives that have come down on us to implement, you just constantly have to. … You're asking them to step back, you know, leave them alone. We've got enough on our plate. As long as our test scores are moving in the right direction and we're improving, stop piling it on. It's a fine line between continuing to improve, school improvement, and becoming overwhelmed. I mean, it's a balance.*

> *Like, first semester, just because of the initiatives that had come from the central office, we could become overwhelmed, so I backed off on some of mine right in the middle of it. So that's the biggest challenge.* (Jake)

Another external mandate from the district level that worked against the knowledge sharing initiatives that the school was trying to implement was shared by this principal:

> " *It's hard because of some of the inane rules that we have in our system about recruiting and that sort of stuff. High school people are not encouraged to talk to middle school teachers at all. …. I invite people here everyday. You want to see what we do? Come on. We're open. What we do is what we do: good, bad, or ugly. If you've got a suggestion, let me know. But it's not encouraged at the district level, and that's unfortunate. Now we have a new superintendent and maybe that will change. I hope so. But that's an issue.* (Joseph)

However, one principal found that a district mandate, prompted by involvement with an external organization, had a positive influence on his ability to facilitate knowledge sharing:

> " *We, actually it was a spinoff from the GLISI project. The central office and the superintendent asked us to create a war room. Now, we had the data already compiled, so it was just a matter of, "OK, this will be the war room and we're gonna blow it up and make it big so teachers and administrative staff, the central office staff, can come in and we can really talk about what we're deficient at, what's a legitimate and research-based strategic plan to bring about improvement.* (David)

Often it is only the factors internal to the organization that one might consider influences on the ability to facilitate knowledge sharing. Clearly, through the examples that the principals provide, external factors have the ability to positively or negatively influence a leader's ability to facilitate knowledge sharing as well.

Chapter Summary

This chapter presented the major findings of this study. The chapter began by providing an overview of the 10 research participants. The profiles of the 10 principals who participated in this study were presented in random order. Next, fifteen themes and numerous highly related subthemes were shared as they related to the four research questions.

The first research question dealt with leader beliefs about knowledge sharing. The data collected from the principals in this study revealed that principals' beliefs about knowledge sharing are related to (a) processes of knowledge sharing, (b) learning and knowledge sharing, and (c) importance of knowledge sharing. The second research question was related to leader behaviors that facilitate knowledge sharing. Principals in this study shared four major ways they believed they facilitated knowledge sharing through personal behaviors: (a) leading by example, (b) setting expectations for knowledge sharing, (c) empowering teachers to share knowledge, and (d) attracting and selecting individuals willing to share knowledge. The third research question dealt with the strategies that principals use to facilitate knowledge sharing. There were four types of strategies that principals used to facilitate knowledge sharing: (a) structure, (b) time, (c) opportunity, and (d) motivation. Finally, the fourth research question explored the influences that affect a leader's capacity to facilitate knowledge sharing. The data

collected from interviews revealed factors related to (a) the leader, (b) the teachers, (c) the organization, and (d) the external stakeholders. Representative quotes were shared for each of the themes and subthemes to substantiate the findings.

CHAPTER 5

SUMMARY, CONCLUSIONS, AND IMPLICATIONS

Effective knowledge sharing and leadership are two of the most cited factors for successful knowledge management. The purpose of this study was to explore how high school principals facilitate knowledge sharing among their faculty members. The research was designed to answer the following questions:

- What are leaders' beliefs about knowledge sharing?
- What leader behaviors facilitate knowledge sharing?
- What strategies do leaders employ to facilitate knowledge sharing?
- What affects a leader's capacity to facilitate knowledge sharing?

This chapter presents a summary of the study, a discussion of the conclusions drawn from the data analysis, implications for research, theory, and practice, and recommendations for future research.

Summary of the Study

A basic interpretive qualitative research design was selected for this study because it allowed for deeper understanding of how these high school principals facilitated knowledge sharing among their staffs. Semi-structured interviews were used to collect the data. Ten high school principals from around the state of Georgia were interviewed for this study. There were nine male participants and one female participant who represented high schools ranging in size from 600 to 2900 students and which represented eight different Regional Educational Service Agencies. The interviews were

conducted in locations chosen by the participants, and lasted between 41 minutes and 80 minutes. All interviews were conducted by the researcher and transcribed by a hired transcriptionist within one week of when the interview was held. Data was analyzed using Ruona's (2005) four-stage model of data analysis, which is grounded in the constant comparative method. Using this method for data preparation, familiarization, coding, and generating meaning resulted in a rigorous and comprehensive analysis of the data.

Four research foci were identified from the data to address the research questions: (a) leader beliefs about knowledge sharing, (b) ways leaders facilitate knowledge sharing through behaviors, (c) strategies to facilitate knowledge sharing, and (d) influences on leader capacity. First, principals' beliefs about knowledge sharing are concerned with the processes of knowledge sharing, the connection between learning and knowledge sharing, and the importance of knowledge sharing. Second, principals shared four major ways that they believe they facilitate knowledge sharing through personal behaviors: (a) they lead by example, (b) they set expectations for knowledge sharing, (c) they empower teachers to share knowledge, and (d) they attract and select individuals that are willing to share with others. Third, principals use four types of strategies, depending on their specific organizational needs, to facilitate knowledge sharing. They employ strategies related to structure, time, opportunity, and motivation. Finally, there are multiple influences that affect a leader's capacity to facilitate knowledge sharing, including factors related to (a) the leader, (b) the teachers, (c) the organization, and (d) the external stakeholders.

Conclusions and Discussion

This section presents a discussion about the major conclusions drawn from this study. The results of the study suggest three conclusions. Each of these will be discussed in relation to the relevant literature.

Conclusion 1: Principals consider developing relationships critical for knowledge sharing.

The first conclusion of this study is that developing relationships is critical for knowledge sharing. The findings suggest that this belief about the importance of relationships influenced principals' behaviors and the strategies they used to facilitate knowledge sharing. Principals discussed the importance of developing relationships for effective knowledge sharing processes, and gave detailed accounts of how they model relationship building for their teachers. Additionally, the principals shared strategies they employ to facilitate relationship building among their teachers and with individuals in other organizations.

Teacher – teacher relationships. These findings support insights in current literature on knowledge sharing with respect to relationships. Cabrera and Cabrera (2005) maintain that social capital, the interpersonal relationships that exist between individuals, is necessary to facilitate knowledge sharing. The structural and cognitive dimensions of social capital determine the opportunities available for individuals to share knowledge, while the relational dimension influences the motivation of individuals to share with one another (Cabrera & Cabrera). Other scholars assert the critical importance of relationships for providing opportunities and motivation to share (Bartol & Srivastava, 2002; Ipe, 2003). In fact, Pan and Scarborough (1999) specifically mention the

importance of relational channels for the development of trust, which is critical for knowledge sharing. In this study, principals stressed the importance of relationships among the faculty that would both provide opportunities for teachers to share, as well strengthen their motivation to share. These principals believed that strong relationships and high levels of trust facilitated knowledge sharing among their teachers.

Principal – teacher relationships. Modeling relationship building was highlighted by the principals as a way to facilitate knowledge sharing. Acting as a role model is one of Vitaala's (2004) four dimensions of knowledge leadership. Vitaala acknowledges that the perspective of the leader being a role model has not been emphasized in the literature. The lack of emphasis in the literature is also true with respect to the leader modeling the building of relationships conducive to knowledge sharing; however, principals in this study pointedly stated the importance of modeling relationship building with their teachers for this purpose. Alex made this point:

> *And when they tell you how things are going, they want you to really care about what they say. They want you to know about their kids and they want you to know about what's going on in their lives. …To me that's modeling – it's not necessarily knowledge sharing but it's building the relationships that are necessary to share knowledge.*

Because principals believed in the importance of relationships for knowledge sharing processes, they modeled building appropriate relationships for knowledge sharing with their teachers.

Teacher – individuals in other organizations relationships. In addition to modeling relationship building, principals also employed strategies to help teachers build

relationships with individuals from other schools and organizations for the purpose of sharing knowledge. Principals enumerated strategies they used to help facilitate the development of relationships between their teachers and teachers from other schools as well as outside organizations. Such strategies included inviting faculty members at other schools to visit the participant principal's school, conduct observations and have conversations with teachers; taking groups of teachers to visit other schools and have conversations with their faculty members; or, having a school-wide affiliation with external organizations such as the Professional Association of Georgia Educator's (PAGE) High School Redesign Initiative, Georgia Leadership Institute for School Improvement (GLISI), or the Schlechty Center. Principals noted that building relationships with others outside the faculty facilitated knowledge sharing and brought in fresh ideas. This is further evidence to support the idea that developing relationships is critical for knowledge sharing.

Lakshman (2007) highlights how senior executives in the business sector encourage employees to network and share information with both internal and external customers. The development and use of these sociocognitive networks is similar to the type of external relationships that the principals in this study discussed to facilitate knowledge sharing. Both types of relationships are seeking to share information or knowledge that will lead to improved results for the organization. As Lakshman noted, KM across organizational boundaries has not been discussed in the literature until recently. Most of the discussion in the education literature centers on collaboration between teachers within a school, not necessarily across schools or school districts. How

school principals facilitate relationships that foster knowledge sharing across external school boundaries has not been fully explored.

Conclusion 2: Principals implement strategies related to structure, time and opportunities depending on the current level and type of knowledge sharing taking place.

The second conclusion of this study is related to the strategies principals employ and the behaviors they exhibit to facilitate knowledge sharing. Based on the evidence from the data analysis, there seems to be a connection between the type of strategy used or behavior exhibited and the level or type of knowledge sharing taking place among the faculty. Principals tended to implement strategies related to structure and time to help teachers get comfortable and get into the practice of sharing. They implement strategies related to opportunities to create a space for informal sharing to occur.

When principals observed that their teachers did not have the skills necessary to share knowledge with each other, or were uncomfortable sharing with each other, they implemented strategies that provided structures for knowledge sharing activities to take place, as well as provided time for formal knowledge sharing activities. Sophia mentioned that there were instances early on when she needed to provide knowledge sharing protocols for departments to increase their comfort level around sharing and to teach them how to share knowledge related to instructional practice and student learning. Cross-content professional learning structures, course teams, and providing organizing frameworks were commonly mentioned strategies that principals used to provide structure for knowledge sharing. These structures are formalized and are implemented specifically to put teachers in a position to share knowledge with one another.

Principals also set expectations for knowledge sharing and empowered teachers to share knowledge. By setting expectations for knowledge sharing, principals provided a purpose for the sharing and held teachers accountable for sharing. Setting expectations helps teachers to focus on the kind of knowledge that needed to be shared, and the reasons that knowledge needs to be shared. Just as important, setting expectations for knowledge sharing communicates the importance of the activity as well as emphasizes the priority that the principal places on knowledge sharing. Principals empowered teachers to share knowledge by providing support to teachers, building confidence in their knowledge sharing capabilities, and valuing them as individual contributors of knowledge. By empowering teachers with the confidence and skills to share with each other, principals were striving to help teachers feel comfortable both with the process of sharing and with their own knowledge sharing skills.

The literature on leadership for knowledge sharing highlights the effectiveness of using an empowering leadership model for knowledge sharing (Srivastava, Bartol, & Locke, 2006). Both the use of a shared leadership structure as well as specific principal behaviors related to the empowerment of teachers (building confidence in teachers' knowledge sharing capabilities as well as providing support to help them increase their skills to share knowledge) are important aspects of empowering leadership and were used by these principals to facilitate knowledge sharing in their schools. Additionally, both the school improvement literature and school leadership literature suggest that empowering teachers by including them in participative decision-making process (Harris, 2004) and encouraging them to take on leadership roles (Zepeda, 2003) enhance school improvement efforts. Further, promoting collaboration among staff by establishing

professional learning structures within the school and setting the expectation for sharing, collaboration, and informed risk-taking (Fullan, 2001; Mai, 2004) help to unlock the potential of school improvement efforts. In this study, principals implemented these types of strategies and exhibited empowering behaviors to promote knowledge sharing among their teachers.

One of the most significant observations related to this conclusion is that there seemed to be a pattern in which knowledge sharing strategies were implemented. Principals implemented strategies that facilitated formal knowledge sharing to help teachers get comfortable with knowledge sharing processes and to help them learn how to share with one another. When relationships existed that would provide motivation for knowledge sharing to occur, principals implemented strategies that would provide opportunities for informal sharing to occur. Recognizing that most knowledge sharing and learning occurs informally (Cross, 2007) principals alluded to the idea of needing the formal strategies in the beginning to create the conditions that would facilitate informal sharing among the teachers. Vince shared the following idea related to the movement from needing strategies for formal sharing to creating opportunities for informal sharing:

> *We don't have to structure a setting for them to do that anymore. Much of it is informal. We can go now at lunch and in any number of places, teacher workrooms around the campus, we could go in there and it would be going on right now, in an informal setting.*

Principals did not suggest that there was ever a time when strategies to facilitate formal knowledge sharing were not needed. What they did seem to suggest, however, is that as teachers became more familiar with knowledge sharing processes, more confident in their

ability to share knowledge with their colleagues, and more motivated to share through relationships they developed, there was a greater need to implement strategies that made it possible for more informal knowledge sharing to occur.

One potential explanation for this movement is that as capacity to share knowledge is increased and barriers to knowledge sharing are decreased, there is a greater likelihood of knowledge sharing becoming institutionalized and a part of the organizational culture. The institutionalization of knowledge sharing was addressed indirectly by several of the principals in the study. They referred to knowledge sharing as

" *the way we do business here*. (Bart)

As knowledge sharing becomes institutionalized, there is less reliance on formal knowledge sharing strategies, although these strategies are still used and formal knowledge sharing still occurs. The focus of the principal's efforts to facilitate knowledge sharing shifts and there is an increased emphasis on creating the opportunities and "space" for informal knowledge sharing to occur.

Conclusion 3: Knowledge sharing both requires change and stimulates change.

The third conclusion of this study is based on the findings related to what affects a leader's capacity to facilitate knowledge sharing, as well as the potential changes stimulated by knowledge sharing. When knowledge sharing has not been the norm in an organization, sometimes changes need to be made and barriers need to be addressed in order for knowledge sharing to occur freely and frequently. However, the findings of this study indicate that knowledge sharing can also be an intervention that stimulates change, particularly with respect to teacher practice and student learning. Furthermore, it is worthy to note that there is a symbiotic relationship between organizational culture and

knowledge sharing. That is, that positive change in organizational culture can *facilitate* knowledge sharing and knowledge sharing can *stimulate* positive changes in organizational culture. The changes required for knowledge sharing and the changes stimulated by knowledge sharing will be discussed in the following subsections. Organizational culture will be discussed separately, due to the highly interconnected nature of the relationship between organizational culture and knowledge sharing.

Changes required for knowledge sharing. One of the changes that were required to facilitate knowledge sharing was related to personnel. Principals emphasized the importance of selecting individuals that were both skilled educators and possessed a willingness to share knowledge and collaborate with other teachers. At some schools there were current faculty members who stifled knowledge sharing among the staff, according to these principals. In those cases, personnel changes were made that created an environment more conducive to knowledge sharing.

Hargreaves (2005) mentions the change opportunity presenting itself currently in education as baby boomers retire and younger, change-inclined teachers are hired. The findings of this study indicate that principals are taking advantage of this demographic shift with respect to hiring teachers who are more inclined to share knowledge. Nevertheless, selection and retention of personnel as a way to facilitate knowledge sharing has not been discussed extensively in the literature. Both Lin et al. (2008) and Sveiby and Simons (2002) assert that developing a collaborative and trusting climate is critical to effective knowledge sharing. Several of the principals in this study were clear in their beliefs that their selection and retention practices made a difference in the both the climate of the building and the way knowledge sharing occurred.

Another factor that negatively impacted knowledge sharing and required change facilitation was teacher mindset. These principals observed both apathy and complacency among some of their teachers and recognized that change in the teachers' mindset was required if knowledge sharing initiatives were ever going to be effective. This was especially true in schools that had historically experienced success in terms of student achievement. They had been "good enough" for such a long period of time that it was difficult for teachers to see the need to be great. Sophia shared that in the beginning they had teachers who truly thought that the way they had taught for the past 15-20 years was going to be sufficient for the rest of their careers. The principals in this study realized that the ways we have educated children previously are not sufficient to meet the needs of learners in the 21st century. These principals repeatedly stated that sharing knowledge is necessary to improve teacher practice and student learning and that achieving this goal requires a change in teacher mindset.

Resistance to change was a barrier to changing the mindset of teachers. Reasons for resistance to change included: (a) complacency, (b) stubbornness, and (c) cynicism as a result of poor implementation of a previous change initiative. These reasons were acknowledged both by the principals in this study and in the literature (Hargreaves, 2005). Hargreaves suggests that teachers who are in the later career stage tend to be more resistant to change for the reasons previously listed. The principals in this study did not specifically identify early or later career teachers as being the most resistant to change; however, two principals, Sophia and Michael, did suggest that some of their veteran teachers were the ones they had a more difficult time getting to buy-in to the idea of sharing knowledge with their colleagues. Other possible reasons for resistance to

change are associated with whether a person is an early or late adopter (Rogers, 2003) and the concerns that a person raises with regard to the change (Hall & Hord, 1987). Getting buy-in from teachers, particularly those who hold informal leadership positions within the school, is important for any change initiative including knowledge sharing initiatives. Link referred to these informal leaders as the *movers and shakers* in the building. The findings of this study show that principals worked to alleviate teacher resistance to change by building relationships and getting buy-in for knowledge sharing initiatives, particularly with the informal teacher leaders in the school.

Knowledge sharing stimulates change. The findings of this study also suggest that knowledge sharing was an important stimulus for change, particularly with respect to improving teacher practice and impacting student learning. The ultimate goal for all principals was to impact student learning, and knowledge sharing became the stimulus for change that was needed to improve teacher practice, which in turn impacted student learning. Principals acknowledged that the valuable knowledge embedded in teachers must be shared in order to improve both instructional practice and student learning. As a result, principals used multiple strategies to facilitate knowledge sharing related to structures, time, and opportunity. The creation of job-embedded professional learning structures was a primary strategy principals used to facilitate knowledge sharing to improve teacher practice. These structures provided a vehicle for teachers to regularly meet to dialog about their practice and learn from one another. Teachers did not discuss their practice in isolation; rather, instructional practice was examined in relation to data on student learning.

These findings suggest that principals seemed to rely on both the personalization (Arumburu & Sáenz, 2007; Hansen, 1999) and community (Osterlund & Carlisle, 2004; von Krogh, 2002; Wenger, McDermott, & Snyder, 2002) perspectives on knowledge to guide their approach to knowledge sharing. One of the main objectives of principals was developing a common knowledge base among the teachers. Communal learning strategies such as professional learning communities, a strategy used by many of the principals, provide opportunities for teachers to share and critically reflect on their practice collaboratively (Stoll et al., 2006). Through such activities, teachers learn together and develop the common knowledge that Dixon (1999) describes as a product of organizational learning. Knowledge sharing stimulated a change in teacher practice, both through the shared understanding that was created and the learning that occurred as a result of knowledge sharing. Because teachers shared not only about their actual teaching practices, but about student learning as a direct result of those practices, they were able to learn from each other and adjust their practice to better meet students' learning needs.

Knowledge sharing and organizational culture are highly connected. The principals who participated in this study named organizational culture as a major factor affecting their capacity to facilitate knowledge sharing. The findings of this study suggest that successful knowledge sharing initiatives require a culture shift—from one of isolation to one of collaboration. As was pointed out by these principals, the culture of isolation is prevalent in high schools. In order for the kind of knowledge sharing desired to improve teacher practice and student learning to occur, the culture of isolation had to be shifted to one where collaboration and knowledge sharing were cultural norms. Both Delong and Fahy (2000) and Pan and Scarborough (1999) maintain that organizational

culture can be a significant influence on knowledge sharing activities. A culture in which teachers isolate themselves and/or hoard knowledge can be a major barrier to knowledge sharing. As one principal pointed out,

> " *…we had so much to share, but no body was sharing. When I looked at what we needed to do to improve, I think I saw that and that was important.* (Michael)

Recognizing the need to break the culture of isolation in the school was the first step for principals in building a knowledge sharing culture.

As a knowledge sharing culture develops and relationships among teachers are strengthened, there may be a greater likelihood for organizational learning to occur. The idea that organizational learning increases an organization's ability to change through the implementation of new ideas has been acknowledged and discussed in the business sector for years (Senge, 1990). An organizational learning perspective on change in education assumes the enactment of collective, regular processes where teachers review and critique new ideas so that all teachers can use the new knowledge (Louis, 2006). These principals shared ways they provided opportunities and contexts for teachers to engage in the aforementioned types of processes to share knowledge, which may also have increased organizational learning.

Although some changes needed to occur in order for effective knowledge sharing to take place, the use of knowledge sharing as an intervention also stimulated a change in the culture of many schools. The evidence from this study reveals that principals attribute, at least in part, the creation of a more collaborative culture to the

implementation of knowledge sharing strategies. Referring to knowledge sharing as a stimulus for change, Joseph stated,

> " *It's a way that can change the fundamental way teachers look at education and at teaching.*

Using a combination of structural, time, opportunity, and motivational strategies for knowledge sharing, as well as leading by example, principals created the environment that facilitated knowledge sharing. The more teachers shared with each other, the more comfortable they felt in doing so, which precipitated the evolution from an isolated culture to a collaborative culture in these schools.

The effect of organizational culture on knowledge sharing has been studied and discussed extensively. Whether or not the organizational culture is supportive (DeLong & Fahy, 2000; Janz & Prasarnphanich, 2003) or encourages knowledge hoarding (Hackett, 2000) determines how successful knowledge sharing initiatives will be. Additionally, an aspect of organizational culture such as what knowledge is valued and where knowledge resides can influence the effectiveness of knowledge sharing processes (DeLong & Fahy, 2000; Ipe, 2003). Yet, the findings of this study suggest that knowledge sharing can have an effect on organizational culture also, which is an idea that has been mentioned in the literature as possible (Fullan, 2001), but has not been empirically tested. As they were interviewed, principals acknowledged both the idea of organizational culture as a potential barrier to knowledge sharing, and the use of knowledge sharing interventions to stimulate change. Creating a knowledge sharing culture requires making knowledge sharing a norm, which cannot be accomplished without implementing strategies that facilitate knowledge sharing.

Implications for Theory, Research, and Practice

This qualitative study on how school leaders facilitate knowledge sharing adds to the understanding of leader beliefs about knowledge sharing, the leader behaviors and strategies employed to facilitate knowledge sharing, and factors that affect a leader's capacity to facilitate knowledge sharing in a school organization. Findings from this study bring to light several implications for research, theory, and practice in the areas of leadership, knowledge sharing and KM, and human resource development.

Implications for Theory and Research

There are several implications for theory and research. First, this study addresses the gap in the theory base on leadership for knowledge sharing by revealing how leader beliefs about the importance of relationships for knowledge sharing shape the choice of strategy they employ and the behaviors they exhibit to facilitate knowledge sharing. Most studies in the existing literature have focused on leadership style rather than leadership behaviors (Leithwood, Jantzi & Steinbach, 1999; Politis, 2001; Silins, Mulford, & Zarins, 2002; Srivastava, Bartol, & Locke, 2006). Lakshman (2007) is the notable exception. None have examined how leader beliefs inform their choice of strategy or influence the leader's behaviors in facilitating knowledge sharing. In this study, principals continually emphasized the importance of relationships for knowledge sharing processes, and detailed the ways that they modeled relationship building for their teachers. Their belief in the importance of relationships prompted principals to employ strategies that would help teachers develop the relationships and trust necessary for effective knowledge sharing. Through this study of how leaders facilitate knowledge sharing, we are able to

better understand what leader behaviors are needed for effective knowledge sharing and KM, as well as organizational learning.

Second, this study deepens our understanding of leadership for knowledge sharing and adds to knowledge sharing theory by bringing to light the connection between the type of strategy used or leader behavior exhibited and the level or type of knowledge sharing taking place among the faculty. Principals selected strategies and exhibited behaviors to facilitate knowledge sharing based on their diagnosis of teachers' needs related to teacher capacity and willingness to share knowledge. While strategies for formal knowledge sharing were never abandoned, the reliance on those strategies decreased and more strategies to facilitate informal sharing were employed as teacher capacity for knowledge sharing increased. As capacity to share knowledge increased and barriers to knowledge sharing decreased, principals observed there was a greater likelihood of knowledge sharing becoming institutionalized and a part of the organizational culture. This is a new contribution to the literature on knowledge sharing and leadership.

Third, this study adds to the theory on organizational culture, organizational learning, and knowledge sharing, by contributing an understanding of how organizational culture affects the leader's capacity to facilitate knowledge sharing, and suggesting that knowledge sharing stimulates organizational culture change through organizational learning. Janz and Prasarnphanich (2003) assert that organizational culture is a significant contributor to effective KM, of which knowledge sharing is a critical component. This study suggests that there is a mutually beneficial relationship that can potentially exist

between knowledge sharing and organizational culture, with each one enhancing the other.

Louis (2006) suggests that organizational learning is the key to school change, and further asserts that organizational learning requires a shared, social construction of knowledge common to all members of the organization. The findings of this study indicate the importance of a knowledge sharing culture. As a knowledge sharing culture develops, the potential for organizational learning may increase as knowledge sharing increases among organizational members. The findings of this study also illuminate the culture of isolation prevalent in high schools as an identified barrier to knowledge sharing which affects the leader's capacity to facilitate knowledge sharing, as well as teachers' ability and willingness to share knowledge. Finding ways to eliminate such barriers to knowledge sharing may also enhance organizational learning.

Fourth, this research contributes to the fledgling literature on KM theory in schools as well as school leadership theory. With increased accountability measures and heightened standards for staff and students, organizational learning, development, and change will be a major focus for school districts over the next few years (Mai, 2004). This study increases our understanding of knowledge sharing as a stimulus for school improvement and change, as well as how job-embedded professional learning structures are an important strategy for knowledge sharing to improve teacher practice and student learning. This knowledge may assist school leaders in being better prepared to contribute to and improve organizational learning, as well as become better managers of the organization's knowledge assets.

Implications for Practice

This study makes several practical contributions to both leadership for knowledge sharing and the field of human resources and organizational development (HROD). First, while this research does not claim to provide a recipe for leaders to follow in order to effectively facilitate knowledge sharing, it does provide a deep analysis of how leaders diagnose the needs of their teachers, capitalize on opportunity, and address the barriers present to facilitate knowledge sharing in a profession where isolation has long been the cultural norm for high schools. This analysis may help both newly appointed as well as veteran school leaders determine the best course of action to facilitate effective knowledge sharing in their own school. The evidence from this study shows that there is no one right way to facilitate knowledge sharing. As it should be with any organizational development initiative, appropriate interventions should be determined based on the needs of the organization. In this case, leaders should determine appropriate knowledge sharing strategies based on the current and desired organizational culture and the knowledge sharing capacity of teachers.

Additionally, in these principals' schools knowledge sharing seems to be occurring widely, but may not be labeled as such. In these cases the lexicon appears to be trailing the practice. Another potential explanation is that the education sector may be developing its own terms to label this phenomenon. In either case, this study provided preliminary insight into how knowledge sharing occurs in schools, and provided more lexicon for labeling this phenomenon in school organizations.

Second, principals stated that much of their own learning about knowledge sharing has been through informal means. Only one of the principals in the study

mentioned that he learned about knowledge sharing through a formal education program, in which he is currently enrolled. His experience may indicate that concepts such as KM and knowledge sharing are beginning to be introduced into leader preparation programs, which is excellent news for aspiring leaders. However, the more experienced school leaders in the study had not had any coursework that included topics on KM and knowledge sharing. Ongoing professional learning for school leaders should include these topics, due to the continued focus on organizational learning, development, and change, of which Mai (2004) speaks.

Further, this study highlights the important role the principal as *knowledge leader* plays in facilitating knowledge sharing. While this is a relatively new role for leaders, it is nonetheless a critical one. Principals are the primary HROD person at the school level. This study highlights the important role that principals play in a school organization's development through the diagnosis and selection of interventions to facilitate knowledge sharing. Leadership preparation programs at the college level and leadership development programs at the system and state level should explore ways to integrate the concept of knowledge leadership into their programs. And, school districts should consciously consider how they can develop and support principals to serve as knowledge leaders in their schools.

Third, scholars and practitioners alike have suggested that the integration of KM with other primary functions of HROD professionals (training, performance improvement, and organizational development) should be of central concern to the field (Ardichvili, 2002; Toracco, 1999). This study may help human resource developers within organizations, and specifically within school systems, better understand ways they

can assist leaders in facilitating knowledge sharing activities. While human resource management (HRM) is well established in school systems, the HROD function is only beginning to emerge. Principals have primarily carried out the HROD role at the school level, while professional learning directors coordinated training at the system level. With the creation of the role of school improvement coordinators at both the school and system levels in some locations, there is an additional individual responsible for organizational development. These individuals, along with professional learning personnel, must work together in more innovative and strategic ways to assist the principal in diagnosing knowledge sharing needs among teachers and selecting appropriate strategies to address those needs. Further, in difficult economic times, one of the first budget items to be reduced or eliminated is professional learning. The findings of this study may help professional learning coordinators to move from traditional and more costly staff development models toward more job-embedded professional learning and facilitation of learning communities among organization members, which are more cost effective and more advantageous for the school's faculty and staff (Louis, 2006; Roberts & Pruitt, 2008).

Fourth, this study examined how leaders facilitate knowledge sharing within the context of schools. The information yielded from this study may be used to enhance leadership preparation and development programs in local school systems as well as institutions of higher education. Enhancing these programs can be accomplished by emphasizing the importance of developing a knowledge sharing culture, the power of knowledge sharing to stimulate change, and the importance of determining the current knowledge sharing capacity of the organization to identify appropriate strategies.

Limitations of the Study

In qualitative research, the concept of user generalizability refers to the idea that generalizability is determined by consumers of the research, not by the researchers themselves (Merriam & Simpson, 2000). To this point, qualitative research is not designed for broad generalizability, and these findings are not intended for that purpose. Rather, these findings provide a deep understanding of how these principals, recognized by their peers and other experts as exemplars, facilitate knowledge sharing. Consumers of this research will consider their own unique situations and determine the generalizability of this research for their context.

Patton (2002) asserts that "validity, meaningful, and insights generated from qualitative inquiry have more to do with the information richness of the cases selected…than with sample size" (p. 245). I included only principals with a reputation for being an excellent facilitator of knowledge sharing, as I considered these to be the cases from which I could learn the most. The insights gained from this study have prompted recommendations for future research, some of which address population and sample size.

Recommendations for Future Research

The findings of this study suggest several recommendations for future research. First, this was an exploratory study to understand how school leaders facilitated knowledge sharing. The sample for the study was small since I was looking for principals who had a reputation for excellence in facilitating knowledge sharing among teachers. Additional research is needed to determine if the findings of the study are true in other cases as well, and should be conducted with a larger sample of the high school principal population. Further, only principals from the state of Georgia were included in

the study. Future studies might include high school principals from across the nation to determine if the findings of this study hold true at the national level. Further, similar studies should be conducted in with leaders of other types of organizations across the business and public sectors to determine if the findings are true for those leaders as well.

Second, this study only included the perspectives of principals on how they facilitated knowledge sharing in their schools. Future studies should undertake a closer examination of the perspectives of the entire faculty and should compare the perspectives of teachers as well as other administrative staff to those of the principal to get a more well-rounded view of how principals facilitate knowledge. While this study provided a thorough analysis of how the senior leader in the high school facilitates knowledge sharing, there are other leaders in the organization as well. The roles assistant principals, teacher leaders such as department chairs and instructional coaches, informal leaders play in facilitating knowledge sharing warrants further investigation.

Third, Vitaala (2004) acknowledges that the perspective of the leader as a role model has not been emphasized in the literature. This is also true with respect to how the leader models the building of relationships that facilitate knowledge sharing. Further studies should be conducted to determine the extent that modeling behaviors facilitates knowledge sharing among teachers. Additionally, the idea of *knowledge leadership* is relatively new. As all organizations become more knowledge intensive, we need knowledge leaders who are intentional in their design and implementation of interventions and support systems for knowledge sharing and KM. Further studies should explore the role of knowledge leader to examine the development of the *knowledge leader* role in organizations.

Fourth, the findings of this study indicate further research on knowledge sharing processes is needed and the extent to which the institutionalization of these processes is leader dependent. The analysis from this study suggests that there may be a pattern in which knowledge sharing strategies are implemented. Further research of this phenomenon, perhaps as an in-depth case study, may yield insight into how knowledge sharing becomes institutionalized. Additional studies might also investigate the extent to which knowledge sharing continues after a leadership change. Furthermore, the findings from this study suggest that principals place importance on sharing knowledge across external school boundaries, an idea that has not been discussed extensively in the extant literature. Because principals recognized this type of knowledge sharing as important for innovation, how that mode of knowledge sharing is facilitated should be explored further.

Fifth, these principals held strong beliefs about the connection between learning and knowledge sharing, and about the importance of knowledge sharing to improve teacher practice and student learning. Dixon (1999) and others stress the potential for organizational learning to affect systemic change and organizational improvement. Given these principals' beliefs about knowledge sharing and learning, further studies should look at the extent to which the institutionalization of knowledge sharing contributes to organizational learning in schools and results in effective school improvement.

Finally, the findings of this study suggest that principals believe knowledge sharing makes a difference for both teacher practice and improved student learning. Providing evidence of this belief was beyond the scope of this study, however this finding certainly points to the need to research this assumption more in future studies. These principals went to great lengths to facilitate knowledge sharing and develop a

knowledge sharing culture, as evidenced by their recruitment and selection practices and the array of strategies they employed. Future studies should investigate through both qualitative and quantitative methods the extent to which knowledge sharing processes impact both teacher retention and student learning.

Chapter Summary

This chapter presented a summary of the research study, discussion of the conclusions, implications for research, theory, and practice, and recommendations for future research. Through semi-structured interviews, 10 principals considered exemplary in facilitating knowledge sharing offered their perspectives on their beliefs about knowledge sharing, the behaviors they displayed, the strategies they employed, and the factors that affect their capacity to facilitate knowledge sharing. Data was analyzed using the Ruona's (2005) Four Stage Model of data analysis based on the constant comparative method. Fifteen themes and numerous highly related subthemes were identified in the data.

The findings resulted in three conclusions: (1) principals considered the development of relationships critical to knowledge sharing, (2) principals implement strategies related to structure, time and opportunities depending on the current level and type of knowledge sharing taking place, and (3) knowledge sharing both requires change and stimulates change. Principals' beliefs about relationships and the importance of knowledge sharing guided their behaviors as well as their selection of strategies to facilitate knowledge sharing. In determining how best to facilitate knowledge sharing, principals diagnosed the needs of their teachers and of the organization in order to implement strategies that would increase teacher capacity for knowledge sharing. Finally,

changes were required in order for effective knowledge sharing to take place; however, knowledge sharing was also a stimulus for change, influencing organizational culture, improving teacher practice, and impacting student learning.

Principals in this study not only believed in the power of knowledge sharing to change their school culture in addition to achieving their organizational goals, but also they believed knowledge sharing has the potential to fundamentally change the way educators view teaching and learning. The key to unlocking this potential begins with an understanding of the relationship among organizational culture, knowledge sharing, and change. From there, principals can determine the best course of action, modeling appropriate behaviors and implementing the strategies that will develop the capacity of the teachers in the organization to share knowledge effectively.

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APPENDICES

APPENDIX A

INVITATION TO PARTICIPATE

Dear_____,

My name is Selena Blankenship and I am a doctoral student at the University of Georgia, as well as a fellow school administrator. You are being invited to participate in a research study titled "How Leaders Facilitate Knowledge Sharing" which I am conducting under the supervision of Dr. Wendy E. A. Ruona, Associate Professor in the University of Georgia's Department of Lifelong Education, Administration, and Policy, Adult Education Program. For the purposes of this study, knowledge sharing is described as an act of providing one's knowledge to others, as well as receiving knowledge from others. Knowledge sharing may occur through learning by observation, asking advice, sharing ideas, and other formal and informal activities. You have been recommended for participation in this study because your colleagues in the field of education have recognized your expertise in and commitment to facilitating knowledge sharing among your faculty.

For this project I will be conducting semi-structured interviews and document review to examine how school leaders facilitate knowledge sharing among their faculty, which is not an easy task. I will ask you questions about your beliefs about knowledge sharing, the leader behaviors and strategies employed to facilitate knowledge sharing, and factors that affect a leader's capacity to facilitate knowledge sharing in a school organization. There are no right or wrong answers, and your answers will be kept completely confidential. This means that names or specific affiliations will not be included in any report or publication of the study findings. Only pseudonyms of the participants will be used in the report or publication of the study findings.

For this project, you will be asked to participate in one semi-structured interview. Once the data has been transcribed and analyzed, you will be asked to review a summary of your interview to verify that the researchers understood your intended meaning. The researcher(s) may ask you to voluntarily provide documents for review that may aid us in our understanding of how leaders facilitate the knowledge sharing process, or that validate the factors that may support or inhibit the leader's ability to facilitate those processes.

You are free to withdraw your participation at any time should you become uncomfortable with it. If you have any questions or concerns, feel free to contact me at [redacted]. I hope you will enjoy this opportunity to share your experiences and viewpoints with us. Thank you very much for your help.

Sincerely,

Selena Blankenship
Doctoral Student, Adult Education

APPENDIX B

INTERVIEW PROTOCOL

Introduce myself to the principal and thank him/her for their willingness to participate in the study. Ask permission to audiotape the interview. Let them know that at any time I will stop the tape if they wish. Begin the interview by telling them that I am going to ask them some questions about their experience (demographic questions), and then I am going to ask them some questions about their experiences related to knowledge sharing in their school. Ask if they have any questions before we begin.

Demographic Questions

1. How many years have you been in education?
    a. In leadership?
    b. At this school?
    c. Have you always worked in education?

2. What is your degree?

3. How have you learned about/ become involved in KM and KS?

General Questions

4. Tell me about how knowledge sharing occurs here at your school.

5. What are the things you have put in place to help your faculty share knowledge with each other?
    a. What prompted the need for specific strategies?
    b. How did you decide that these were the particular strategies that needed to be put in place?
    c. How are they working for you?

6. In what ways are teachers rewarded, if at all, to share knowledge with each other? (Ribiere & Sitar, 2003)

7. You and I know that most knowledge is shared informally. Yet, even that can be nurtured and/or facilitated. In what ways are networking, relationship-building, or other things facilitated that might result in knowledge sharing?

8. Tell me about the leadership is structured at the school.

   a. How are decisions made? (Singh, 2008)

9. Tell me about your philosophy on knowledge sharing among your staff.
   a. How is knowledge sharing best facilitated in your opinion?
   b. To what extent should leaders "manage" the process?

10. What are some "core" beliefs that you hold which are likely key foundations for you as you work on initiatives and strategies we've discussed so far during this interview?

11. How, if at all, do you model knowledge sharing (Ribiere & Sitar, 2003; Viitala, 2004) for your faculty?
   a. What other behaviors do you personally engage in to facilitate knowledge sharing?

12. Tell me about a time when you felt like you were being successful at facilitating knowledge sharing.

13. Tell me about a time when you were not able to be successful in facilitating KS.

14. What would your teachers tell me about knowledge sharing at this school?
   a. (Ask for documents or data)

15. What challenges does your staff face in sharing knowledge?
   a. Probe related to the following factors at the individual, process and organization levels:
      i. Mission/Goals
      ii. System Design
      iii. Capacity
      iv. Motivation
      v. Expertise

16. If a principal from another school who was ready to begin working on facilitating KS called you looking to benchmark or for advice, what three things would you tell him are critical "keys to success" to foster/facilitate KS in schools?

17. Is there anything that I haven't asked about related to knowledge sharing that you would like to share with me?

APPENDIX C

INFORMED CONSENT

How Leaders Facilitate Knowledge Sharing

I, _____, agree to participate in a research study titled "How Leaders Facilitate Knowledge Sharing" conducted by Selena S. Blankenship, a doctoral student in the University of Georgia's Adult Education Program [redacted] under the direction of Dr. Wendy E. A. Ruona, Associate Professor in the University of Georgia's Department of Lifelong Education, Administration, and Policy, Adult Education Program [redacted]. I understand that my participation is voluntary. I can refuse to participate or stop taking part without giving any reason, and without penalty or loss of benefits to which I am other wise entitled. I can ask to have all of the information about me returned to me, removed from the research records, or destroyed.

Purpose of the Study: The purpose of this study is to explore how school leaders facilitate knowledge sharing. Through this study, the researcher(s) hope to gain a better understanding of how knowledge sharing is facilitated and the role that leaders play in this endeavor. By gaining this understanding, the researchers hope to add to the body of knowledge on leadership for knowledge sharing and knowledge management. Specifically this study will answer the following questions: What are leaders' beliefs about knowledge sharing? What strategies do leaders employ to facilitate knowledge sharing? What leader behaviors facilitate knowledge sharing? What affects a leader's capacity to facilitate knowledge sharing?

Procedures: If I choose to participate, I will be asked to do the following things:

- Meet with interviewer, to openly and honestly answer questions about my experiences with facilitating knowledge sharing. This interview will take approximately 1-2 hours of my time and will most likely be completed February 1 – April 1, 2009. This will be in-person with one or more of the researchers.
- Voluntarily provide documents for analysis that are related to the facilitation of the knowledge sharing process.
- Review a summary of my interview to verify that the investigators understood my intended meaning. This interview will take approximately 1-2 hours of your time during late April – late May, 2009. This can be handled virtually via phone.

Discomfort/ Stresses: The discomforts or stresses that may be faced during this study are minimal. Potential psychological discomfort may occur as the questions probe into the work environment and what may be currently inhibiting knowledge sharing. This discomfort will be minimized by a guarantee of confidentiality and a safe interview environment.

Risks: No Risks are expected.

Benefits to me: As a participant, I will benefit by gaining a better understanding of what I have experienced as I have attempted to facilitate knowledge sharing among the faculty. This could better allow me to understand these processes in order to better facilitate the knowledge sharing that occurs in the future.

Benefits to the larger community: This research will provide findings for schools and other

organizations who desire to improve knowledge sharing processes within the organization. The findings will allow leaders and HRD professionals to use the information to better facilitate knowledge management processes within an organization. The researchers hope that exploring and sharing my experience will help the larger field of HRD understand these things better and inform the field as to what further research and theory is needed to enhance HRD's capacity to be strategic organizational partners.

Confidentiality: No individually-identifiable information about me, or provided by me during the research, will be shared with others without my written permission. My name and the name of my organization will not be used on documents related to the research. Only criteria for the selection of participants will be published and it will not be made clear who participated and who did not.

Interviews will be tape-recorded. Tapes will be transcribed by the researcher(s) and/or a hired transcriptionist, and will be kept for a period of two years beyond the completion of the study, at which time the tapes will be destroyed.

A code number will identify each piece of data resulting from the interviews. Names or specific affiliations will not be included in any report or publication of the study findings. Quotes used in any report of the findings will not be attributed to the participant by name or in any other way that would lead to identification of the participant or the organization.

I understand that the researchers will answer any further questions about this research, now or during the course of the project (Selena Blankenship at [redacted] or [redacted] or Dr. Ruona at [redacted] or [redacted].

I understand that I am agreeing by my signature on this form to take part in this research project and understand that I will receive a signed copy of this consent form for my records.

_____	_____	_____
Name of Participant	Signature	Date

_____	_____	_____
Name of Researcher	Signature	Date

Telephone: _____ Email: _____

Please sign both copies, keep one and return one to the researcher.

Additional questions or problems regarding your rights as a research participant should be addressed to The Chairperson, Institutional Review Board, University of Georgia, 612 Boyd Graduate Studies Research Center, Athens, Georgia 30602-7411; Telephone (706) 542-3199; E-Mail Address IRB@uga.edu

APPENDIX D

FINAL CODING STRUCTURE AND EMERGING THEMES

Q1. Leaders Beliefs about Knowledge Sharing

11000 Beliefs about Knowledge Sharing Processes
11100 The leader must facilitate KS
11110 Role of the principal
11120 Importance of teacher leaders
11200 KS must be both formal and informal
11300 Relationships facilitate KS
11310 Relationships within the school
11320 Relationships across schools
11400 Knowledge must be shared across structures

12000 Beliefs about Learning and KS
12100 Learning and KS should be highly connected
12200 We must be lifelong learners

26000 Beliefs about the importance of KS
26100 We want to improve teacher practice
26110 There is valuable knowledge embedded in teachers
26120 We develop a common knowledge base
26200 KS is important for organizational success
26210 We are all in this together
26300 It's all about improving student learning
26310 We share a commitment to our vision and goals

Q2. Leader Behaviors that Facilitate Knowledge Sharing

14000 Leads by example
14100 Reads and shares new learning with faculty
14200 Uses technology to facilitate sharing
14300 Participates in formal KS activities
14400 Builds relationships
14500 Initiates informal conversations
14600 Listens to others

15000 Sets expectations for KS
15100 Sets expectations
15200 Holds teachers accountable for sharing knowledge
15300 Provides a purpose for sharing

16000 Empower others to share
16100 Provides support for teachers
16200 Uses strategies to build confidence in others
16300 Values individuals as important contributors

20000 Attracts and Selects individuals with a KS mindset
20100 Makes personnel changes in order to facilitate KS

Q3. Strategies leaders employ to facilitate KS
17000 Strategies related to structures for sharing
17100 Shared leadership structure
17110 Shared decision making
17120 School improvement team
17200 Cross-content professional learning structures
17300 Course teams
17400 Organizational structures
17500 Organizing frameworks

18000 Strategies related to time
18100 Scheduled times for meetings
18200 Providing common planning
18400 Scheduled time for professional learning
18500 Common lunch

19000 Strategies related to opportunity to share
19100 Observing and debriefing with colleagues
19300 Mentoring
19400 Physically locating teachers together for KS purposes
19500 Book studies
19600 Access to technology
19700 Networking with others outside the school or system
19800 Common gathering spaces

21000 Strategies related to motivation to share
21100 Providing extrinsic rewards for participating in KS activities

Q4. Influences on a leader's capacity to facilitate KS
22000 Organizational Factors
22210 Culture of Isolation
22200 School culture
22210 Complex nature of schools
22400 Time
22500 Physical Structure

23000 External Factors
23100 Support for KS
23200 External mandates

24000 Teacher factors
24100 Mindset of teachers
24110 Resistance to change
24120 Teacher buy-in
24300 Fear of taking risks
24400 Relationships
24410 Level of trust

25000 Leader Awareness of KS
25100 Principal's own learning about KS
25110 Sources of learning about KS
25200 Recognizing need for KS interventions

APPENDIX E

RESEARCHER SUBJECTIVITY

I have worked in education for 17 years. I have worked in both middle school and high school settings, primarily as a classroom teacher. As a middle school teacher, I worked on a team with three other educators. We met regularly to discuss student progress, share ideas and instructional strategies, and yes, sometimes to "vent" about a particular situation. We built a network of support and trust during these meetings that served us well as we worked together. We also learned much from one another. The interactions in which we participated were expected by the administration of the school. When I moved to the high school, the teaching situation was different. Teachers really only had the opportunity to talk to each other at lunch time, and even then, the time was limited. Certainly no one wanted to talk about school issues during lunch. If information was shared between teachers, generally it happened because the two teachers were close friends outside of the school setting. There were no expectations set forth by administrators for teachers to share with each other, nor were there any strategies in place to facilitate the activity. At that point I realized the isolation that high school teachers learn to expect as a part of their job. I was also aware that a few teachers were perfectly content to go into their classroom, shut the door, and impart knowledge to their students. I was not one of them. While I enjoyed the students I taught and developed both personal and professional relationships with some of my colleagues, I missed the types of interactions I had experienced at my previous school.

When I moved to another town to teach, I had a different experience. In this new setting, teachers were encouraged to share with one another, and the school even

attempted to put formal structures in place to facilitate the sharing of knowledge among teachers. In comparing the two very different high school experiences, it occurred to me that there is a wealth of knowledge in high schools that resides in individuals that may or may not ever get shared. If schools could codify the knowledge that teachers hold, or implement strategies that facilitated the informal sharing of tacit knowledge, just imagine the opportunity for increased understanding, organizational learning, and change to occur. However, I have gained a new perspective as an administrator, which is that facilitating knowledge sharing is not an easy task.

My insider (emic) perspective provides me with an understanding of the normal processes of schools, so that will help me as I conduct my research. Because I have been a classroom teacher in both a middle school and two different high school settings, and I am currently a high school administrator, I have lived the experiences that I plan to study. My prior experience is a potential bias in my research, as I have formed my own ideas about how knowledge sharing needs to occur in a high school setting.

I have also served as an evaluator for a federal grant program for which I conducted site visits for schools in nine different systems. Recently, I completed work for a leadership development organization in the state developing competency models for school leaders. This work allowed me the opportunity to work with school and system leaders from across the state. Through this work I was familiar with some of the school systems in which I interviewed principals, but I had not worked directly with any of them through my previous employment.

I had an established relationship with one of the participants prior to the study since we had previously lived in the same small town. This situation provided me access

as well as presented challenges to maintaining neutrality, as I was familiar with of my participants either through first-hand knowledge or by reputation. In order to raise my self-awareness of any potential compromises based on my biases, I kept notes in my research log about my own personal feelings during the research process.