

ENHANCING KNOWLEDGE MANAGEMENT PRACTICES: A MULTIPLE HOLISTIC
CASE STUDY WITH PRINCIPALS AND TEACHERS
IN A WESTERN CANADIAN PROVINCE

by

Kathleen Marie Grad

Liberty University

A Dissertation Presented in Partial Fulfillment

Of the Requirements for the Degree

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APPROVED BY:

Denise Nixon, PhD, Committee Chair

Sarah Kerins, EdD, Committee Member

Abstract

The purpose of this multiple holistic case study was to understand how principals and teachers in a school division in a western Canadian province enhance their knowledge management practices. Knowledge management was generally defined as the organization, capture, use, and analysis of the impact of a group's collective knowledge. The theory guiding this study was Davenport and Prusak's theory of knowledge management as it explained the relationship between principals and teachers and how they use knowledge management. This qualitative research study was a multiple holistic case study which involved six principals and six teachers in a school division in a western Canadian province. Data were collected using individual interviews, document analysis, and journal prompt reflections. Data analysis included transcription by me, cross-case synthesis, various cycles of codes, categories, sub-categories, and themes. Although the six principals and six teachers were already using knowledge management to move the learning of students forward, the findings indicated what would enhance their knowledge management practices. The findings indicated that the participants used knowledge management practices for goal attainment through connections. Goal attainment was through effectiveness and efficiency while connections were through relationships, involvement, and engagement.

Keywords: data, explicit information, implicit information, information, knowledge, knowledge management, organizational knowledge, tacit information

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Dedication

I dedicate the following research study to the Lord Jesus Christ and to my parents who instilled in me to be the best that the Lord Jesus Christ gifted me to be. I also dedicate this to my brothers and sisters who helped me to grow into the person that I am today. Our parents constantly challenged us in the most loving ways to strive to be our best no matter where life takes us. I also dedicate this to all my students, parents, and colleagues with whom I shared my 38 years as an educator, vice principal, principal, and superintendent.

And finally, I dedicate this to my husband for always supporting and encouraging me.

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I would like to acknowledge everyone who has helped me get to this point, which includes family, friends, colleagues, students, and parents. As an educator, you hope to inspire the students with whom you work; I have been inspired by them.

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And finally, I would like to acknowledge my dissertation chair, Dr. Denise Nixon, who was a constant and unwavering person of support through her prayers and words of support and encouragement. Dr. Nixon also gave me very good advice on how to become a more in-depth writer of my results and my interpretation of my results. I have met and worked with many people throughout my career as an educator and throughout life in general, and Dr. Nixon is the most Christ-like person I have ever encountered. Her kindness and unconditional acceptance and spirit of service is very difficult for me to put into words. I felt the spirit of success through her kindness and mentorship. I was so incredibly blessed to have worked with her.

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List of Abbreviations

Central Research Question (CRQ)

Information Technology (IT)

Professional Development (PD)

Sub-Question (SQ)

Voice over the Internet Protocol (VoIP)

CHAPTER ONE: INTRODUCTION

Overview

Knowledge management within an organization is the process of recognizing, organizing, consolidating, sharing, and storing information through wiser strategic decision making (Davenport & Prusak, 1998). This research enhanced the knowledge management practices of principals and teachers in a school division in a western Canadian province. Chapter One includes the background of this study which encompasses an examination of the historical, social, and theoretical contexts for this research. Also included in this chapter are the purpose statement, problem statement, and significance of the study. The research questions, definitions, and a summary of this chapter will conclude Chapter One.

Background

Managing information and knowledge has become a focal point for many organizations including schools. According to Bogdanowicz and Bailey (2002) knowledge is an asset to be developed, managed, and valued. To give organizations a competitive edge in achieving long-term goals, knowledge is a strategic resource that assists organizations in a more systemic and effective way (Ubon & Kimble, 2002). Dalkir (2017) discussed the importance of the knowledge economy having its foundation in people and that at the end of the day “valuable knowledge walks out the door” (p. 11). Bart (2000) predicted that by 2020, 20% of the work force would be industrial workers and the rest of the work force would be knowledge workers. Organizations in this knowledge age act and respond with the best knowledge and know-how (Dalkir, 2017). Socially, knowledge management evolved into what it is today, and theoretically, knowledge management continues to evolve into what it needs to become to be used by individuals and

organizations (Cheng & Lee, 2016; Davidova & Kokina, 2018; Hawamdeh, 2018; Selah et al., 2017).

Historical Context

Knowledge management evolved into what it is today from an economic, industrial, and cultural perspective. Throughout the ages, societies relied heavily on knowledge gathered. Historically, knowledge management started to form 12,000 years ago with the hunter-gatherers as they concentrated on “animal husbandry, working the soil, planting, and harvesting” (Pizziconi & Wiig, 1997, p. 5). Throughout the centuries, societies started to realize how they could turn their understanding of how to use their natural resources into knowledge that could be shared to build their economies (Böhme & Stehr, 1986; Boulding, 1956). During the Industrial Revolution of the 18th and 19th centuries, societies became better organized in their understanding of how to share knowledge in the most efficient ways (Gorey & Dobat, 1996). During the first half of the 20th century, companies started to focus on providing products to consumers that were both economical and functional. Companies began to realize that knowledge expertise was important, but it still was not explicit (Feigenbaum et al., 1988). The Information Revolution started in the 1950s when companies started to investigate total quality management, which emphasized the continual process of ensuring that products and information shared were as accurate as possible (Aguayo, 1991; Lischeid, 1994).

The present knowledge management system started gathering steam with H. G. Wells in 1938 (Rayward, 1999). Rayward (1999) stated that Wells was a social reformer, science fiction writer, an evolutionary biologist, and a historian who hoped and foretold the opportunities for the world if the world could come together as they worked towards peace. Rayward also noted that Wells encouraged people to collectively work together, to share information, and to help each

other become more knowledgeable all in the name of securing peace in the world. Rayward pointed out that Wells saw the global community working together by helping each other see into the future and place value on collective experiences that could become knowledge.

Computerization in the 1950s made information more accessible to the larger community (Kling, 1991). Peter Drucker (1959), a guru of management, discussed the importance of the knowledge worker, a person whose basic job was to handle and process information so that it became knowledge for all to use in the most efficient way.

The 1980s started to see virtual workplaces and the rise of the subject matter expert (McGraw & Harrison-Briggs, 1989). The term knowledge management was coined by Drucker in the 1980s and employees were seen as knowledge workers (Eschenbach, 2010). Knowledge workers would be invaluable in learning organizations (King, 2000; Senge, 1990). Certain activities and behaviors were important to guide and inspire problem-solving, potentially giving a competitive advantage to organizations and building the core capabilities for the organization (Barton-Leonard, 1995). How knowledge management was produced, used, and diffused within organizations was also a consideration (Nonaka & Takeuchi, 1995). Edvinsson and Malone (1997) considered organizational knowledge as a competitive asset to measure intellectual assets in the pursuit of helping people to be successful. The focus of knowledge management was on managing content, ensuring that it was well organized and understood so it was easy to find and use (Schubmehl & Vesset, 2014). This made “many organizations pursue strategies to actively and explicitly manage knowledge” (Pizziconi & Wiig, 1997, p. 6). Pizziconi and Wiig (1997) stated that the term knowledge management will no longer need to exist when it becomes the way things are done. Knowledge management is a social affair (Böhme & Stehr, 1986; Drucker, 1994; Goguen, 1997; Wiig, 1986).

Social Context

Socially, knowledge management affects workers in every field. “The strength of knowledge is for conserving appreciated heritage, discovering new ideas, settling troubles, generating essential competencies, and starting new circumstances for both individual and organizations now and in the next era” (Vaiappuri et al., 2016, p. 454). Knowledge management is “strongly influenced by group communication patterns and the structural and political environment” (Newton & Sackney, 2005, p. 434). Knowledge management affects how people behave with each other as they are processing this information (Fullwood et al., 2019; Garcia-Morale & Martin-Rojas, 2011; Gauthier & Zhang, 2020; Wolbers et al., 2017). Feeling comfortable with knowledge management can affect the working relationship of those involved within an organization (Fullwood et al., 2019; Garcia-Morale & Martin-Rojas, 2011; Jarrah & Alkhazaleh, 2020; Reid, 2013; T. A. Stewart, 1997; Upadhyay & Manas, 2019; Värk & Reino, 2020). Organizations grow and move forward when new ideas are generated, new processes are created, and new opportunities are presented to the workers. Fundamentally, this growth happens when learning is supported and encouraged. “Learning is at the heart of corporate governance” (Garcia-Morale & Martin-Rojas, 2011, p. 309). Organizations are constantly learning through their daily experiences, from the people outside the organization they encounter, and from the people within their organization. Each day brings a new set of experiences that have the potential to support the vision, mission, and goals of the organization. This occurs through socialization, externalization, combination, and internalization, which affects learning (Nonaka & Takeuchi, 1995). Socialization is the mixing of people socially in the organization, which occurs daily. Externalization involves expressing thoughts, ideas, and feelings that are experienced by all the employees, which occurs in conversations, in meetings, and in projects. Combination occurs

when people discuss various ideas and concepts with each other. Internalization happens when people adopt and work with the ideas and concepts in a way that will benefit the organization. At the heart of corporate governance are the people who have a vested interest in that organization. Face to face working opportunity is “critical for [a] knowledge sharing culture” (Fullwood et al., 2019, p. 1055). Culture needs to be open, collaborative, and conducive to sharing. The critical factor affecting knowledge sharing is the leadership (Allan, 2019; Cheng et al., 2017; Dogan & Yigit, 2014; Hong & Rowell, 2019).

When teachers become school-based administrators such as principals, their social realities are different as they have entered a whole new dimension of learning. Principals need to be leaders, managers, and most importantly, instructional leaders (Bafadal et al., 2019; Fink & Resnick, 2001; D. L. Gray & Lewis, 2013). “Although the principal must address certain managerial tasks to ensure an efficiently managed school, the task of the principal must be to keep focused on activities which pave the way for high student achievement, both academically and personally” (Findley & Findlay, 1992, p. 102). A principal’s day involves ensuring that all teachers, staff members, and students have the optimal type of day for learning. This optimal day of learning might include the bells working, indicating the start of day, the recess breaks, the lunch hour, and the end of the learning day as this provides structure for the day. A principal’s day might involve ensuring that anything that comes into the school will not distract teachers and students from learning. If technology is not functioning as it should and might affect learning, a principal must be ready to fix the problem. Anything that can disrupt the optimal learning day for the teachers and students must be a priority of the principal to ensure that does not happen. Liljenberg and Andersson (2019) reported novice principals experienced stress and tension from being compared to teachers’ former principals, feeling isolated, not knowing how to work the

filing system, and lacking knowledge about school leadership and management. When a teacher decides to become a school-based administrator, they soon come to realize the expectations are very different. Besides the daily operations of the building, the supporting of staff and students, dealing with parental concerns, and the managing of the reputation within the larger community, the role that they are about to assume can be all-consuming, all-encompassing, and somewhat daunting (Bafadal et al., 2019; Fink & Resnick, 2001; D. L. Gray & Lewis, 2013). Information can come to them at lightning speed and learning how to process it can be a case of survival so it can be used by all stakeholders. When a teacher is placed in a leadership role, they can often experience alienation from fellow teachers, scrutiny, and backlash from teacher colleagues as they are placed in a position that may cause tension between them and teacher colleagues (Aasebo et al., 2017; Amtu et al., 2020; Bird et al., 2009; Cheung et al., 2018; Dogan & Yigit, 2014; Jacobs et al., 2018; Stein et al., 2016; Wenner & Campbell, 2017). Processing data which can become information and eventually became knowledge for the benefit of the entire school community is a skill that is well worth learning very early in the career of the principal and the teacher (De Lourdes Vilorio et al., 2019; Prado Tuma & Spillane, 2019).

To know there is a difference between data, information, and knowledge and how to process each is best learned through experience, time, reflection, and execution (Davenport & Prusak, 1998). Information is a cultivated form of data. Knowledge is the awareness or understanding of that information. There was an information explosion when the printing press was invented in 1436 (Eisenstein, 1979). The printing press gave many more people the opportunity to learn more about the world in general. There was a knowledge explosion when Peter Drucker described understanding the world through pattern, purpose, and process (Drucker, 1959). In his seminal work on a knowledge society, Drucker coined the term “knowledge

worker.” A knowledge worker, through training, was one who applied theoretical and analytical knowledge to develop services and products. Drucker said that knowledge workers such as physicians, lawyers, researchers, designers, scientists, and engineers would be valuable in our 21st-century organizations (Drucker, 1959). The knowledge explosion refers to the quantity of quality knowledge that is accessible to most people. “The knowledge explosion has created enormous difficulties for people to be aware of, access, and process the volume of new literature” (Adair & Vohra, 2003, p. 15). In theory, managing data, information, and knowledge to be productive is a skill that can be used by many different sectors within society.

Theoretical Context

Davenport and Prusak (1998) in their seminal work on knowledge management stated that knowledge management moves the culture within organizations into positive action through wiser strategic decision making: “Organizations are made up of people whose values and beliefs influence their thoughts and actions” (p. 9). These values and beliefs make the organization strong and positive, which has a very powerful and influential effect on the organizational knowledge base when new knowledge is constantly created, and current knowledge is carefully retained.

Schools are about knowledge and learning that becomes knowledge. Acquiring new knowledge in schools can affect the school culture and the people within the school because it could be a new way of doing things, which might mean discarding an old way of doing things (Tschannen-Moran et al., 2000). Personal growth is experienced with new knowledge through self-organization, research, innovation, data, planning, and practice (Dimmock, 2016; Mupa & Chinooneka, 2015; Tocháček et al., 2016). Acquiring new knowledge encourages design thinking, connectionism, collaborative problem-solving, and collective intelligence (B. Chen &

Hong, 2016; Husni, 2020; Rismark & Solvberg, 2011; Tschannen-Moran et al., 2000). When a school staff member leaves a school, a certain amount of knowledge and expertise leaves with the staff member. Each member of a school staff contributes to the knowledge-based well-being of that staff (Sutherland & Jordaan, 2004), and when they leave an adjustment needs to be made as the school culture can change. Retaining the knowledge and adjusting for the possible change in the school culture needs to be considered. Readjusting the school culture can be a complex process where strategic discussions need to occur (Auwal, 2013; Omwirhiren, 2015; Ramona & Alexandra, 2019). There needs to be a regulatory system which includes a careful reexamination of the school goals, a renewed problem-solving approach, cooperative learning, and a readjustment of any process that will protect the positive nature of the school culture (Heijne-Penninga et al., 2013; Korkmaz Toklucu & Tay, 2016; Sutherland & Jordaan, 2004; Yildiz et al., 2018).

If the culture is negative, knowledge acquisition and learning do not take place as optimally as they could (Aasebo et al., 2017; Haymovitz et al., 2018). Knowing how to acquire, manage, and retain knowledge is one of the ways that school culture can be positive (Atasoy, 2020). The acquisition, management, and retention of knowledge, especially in a school context, became more accessible when the internet was created. “The advent of the internet and the World Wide Web have made unlimited sources of knowledge available to us all. Pundits are heralding the dawn of the Knowledge Age supplanting the Industrial Age” (Dalkir, 2005, p. 2). Theoretically, knowledge management creates, identifies, stores, diffuses, replicates, and applies knowledge within organizations (Farmese et al., 2019). Dalkir (2005) also stated that knowledge management is a “deliberate and systematic coordination of an organization’s people, technology, processes, and structure to add value through reuse and innovation” (p. 3).

According to Farmese et al. (2019), there has been an explosion of writing about knowledge from different disciplinary and theoretical perspectives. Knowledge management theories are organizational, ecological, and techno centric (Kim & Hong, 2019; Värk & Reino, 2020).

Knowledge management theories are also personal, procedural, and propositional (Kim & Hong, 2019; Värk & Reino, 2020). Knowledge is also interpreted and can include personal ideological biases which can be retained, revised, or rejected (Awang et al., 2011; Rao & McNaughton, 2019). Knowledge can be reflected on and critically analyzed (Upadhyay & Manas, 2019).

Principals and teachers need to be aware of the state of their school culture. Research into negative school cultures indicates that key factors are missing. A lack of communication between the staff, students, and parents can be one indicator of a negative school culture (Amtu et al., 2020; Hankla et al., 2021; Kazak, 2021). Perhaps one of the foundational missing pieces to a positive school culture is strong leadership (Blau & Shamir-Inbal, 2016; Ozgenel, 2020; Riveras-León & Tomàs-Folch, 2020). Teacher turnover and alienation can be a result of a negative school culture (Goldag, 2019; Korumaz et al., 2020; White, 2018). Punitive methods of dealing with teachers and students are also an indication of a negative school culture (Haymovitz et al., 2018; Teasley, 2017). A lack of flexibility, especially when trying to achieve school goals, can have a negative impact on the culture of the school (Goldag, 2019; Mousena & Raptis, 2020; Teasley, 2017). Knowledge management requires communication, strong leadership, supporting people, dealing with negative situations, and the need to be flexible when striving to achieve goals in a positive culture (Davenport & Prusak, 1998).

To build a strong positive culture, people need to have a sense of meaning (Aasebo et al., 2017; Nashihin, 2018), a feeling of preparedness (Amtu et al., 2020; Daniati et al., 2019; Riveras-León & Tomàs-Folch, 2020), and a sense of participation (Amtu et al., 2020; Hankla et

al., 2021; Riveras-León & Tomàs-Folch, 2020). Advocacy was also important in building a positive culture (Cicco, 2017; Prado de Oliveira & Murakami, 2019;).

Problem Statement

The problem is how principals and teachers in a school division in a western Canadian province could enhance their knowledge management practices. How they use knowledge management might result in a positive school culture (Chang et al., 2017; Cheng, 2013; Cheng & Lee, 2016; Cheng et al., 2017; Dogan & Yigit, 2014; Teasley, 2017). School cultures grow positively when organizational knowledge is acquired and retained (Amtu et al., 2020; Brown III, 2021; Hankla et al., 2021; Imran et al., 2021; Khan et al., 2021; Korumaz et al., 2020; Terentyeva et al., 2020). Fullan (2002) stated, “Despite being in the learning business, schools and local education authorities are notoriously poor knowledge sharers” (p. 409). The data and information that schools have available to use need to be processed and shared with the entire staff, parents, and community (Chang et al., 2017; Cheng & Lee, 2016; Farias et al., 2016; Ghabban et al., 2018). Schools can strengthen their improvement plans if they can strategically understand what knowledge management is and how it can work for the school (Cheng, 2013; Coppieters, 2005; Dogan & Yigit, 2014; Hong & Rowell, 2019; Mousena & Raptis, 2020; Newton & Sackney, 2005). Positive school cultures depend on all stakeholders feeling that they have a sense of accomplishment and growth (Goldag, 2019; Harris, 2018; Riveras-León & Tomàs-Folch, 2020). More research is needed to supplement current research. The sample population approached for such research was principals and teachers in a school division in a western Canadian province.

Purpose Statement

The purpose of this multiple holistic case study was to understand how principals and teachers in a school division in a western Canadian province enhance their knowledge management practices. Principals and teachers in this school division in a western Canadian province need to have a voice in the realities they face with information and what is involved in converting it into knowledge. Principals and teachers live with the onslaught of information and knowledge every day, and what they receive and process to move the learning forward needs to evolve so they are working with best practices.

Knowledge management in this study is generally defined as the organization, capture, and use of an organization's collective knowledge (Anklam, 2002). Knowledge management is the analysis of the impact on a group's collective knowledge (Anklam, 2002). The theory guiding this study was the knowledge management theory (Davenport & Prusak, 1998).

Significance of the Study

The significance of this study had a theoretical, empirical, and practical base. Theoretically, acquiring and using knowledge guides principals and teachers in discerning the direction of learning and achieving goals. Empirically, principals and teachers use knowledge to guide decision-making. Practically, principals and teachers use knowledge to process information to turn it into knowledge to be used.

Theoretical

The data gathered from this study added to the theory of knowledge management as the concept of knowledge management is always evolving based on how people are managing it. Principals and teachers appreciate knowing what has worked and is working for other principals and teachers when using knowledge management (Nasreen & Odhiambo, 2018; Paulsen &

Hjertø, 2019). The best professional development is hearing the stories about what works and what does not work (Gaikhorst et al., 2019; Kelkay, 2020; Nasreen & Odhiambo, 2018; Paulsen & Hjertø, 2019; Wolbers et al., 2017). These types of stories are best shared by other principals and teachers through the sharing of “their strengths” (Holcombe et al., 2021, p. 47). There are many layers of work that need to be done daily, weekly, monthly, and yearly. Principals and teachers appreciate learning about “leadership strategies and [how to] lead programs strategically” (Kelkay, 2020, p. 426). Happy and confident principals and teachers are assets to the school community, while overwhelmed and frustrated principals and teachers can be a detriment to the school community (Gaikhorst et al., 2019; Munir & Amin, 2020). Adding to the massive resources and information regarding knowledge management, this study can help to explain how to use knowledge management in schools.

Empirical

The data gathered from this study were based on the principals’ and teachers’ observations and experiences. Katuscakova and Jaseckova (2019) stated, “Implementing knowledge management [is the] solution to many global problems” (p. 95). Gathering the experiences and thoughts about knowledge management from principals and teachers added to the bank of knowledge management ideas that already existed. Principals and teachers work through knowledge management with several stakeholders. Mulford et al. (2001) stated, “The more positively teachers viewed the decision-making process in the school as collegial, cooperative and consultative, the more positive the learning environment becomes” (p. 18). Coppieters (2005) said, “Schools need to change from institutions that transfer knowledge into learning organizations” (p. 129). Coppieters also stated that schools need to change processes and change management processes. Zabolotniaia and Cheng (2020) said, “Transformation of the

educational paradigm and approaches to the organization of the learning process, facilitated by emergence of new technological solutions and innovative digital opportunities” (p. 172) will assist these learning organizations and make their knowledge management more viable.

Practical

Principals and teachers have an important mandate, one of which is to empower each other to become experts in processing information and turning it into knowledge (Hong & Rowell, 2019), but first, they need to become proficient in turning information into knowledge themselves (Chang et al., 2017). Fullan (2002) commented that schools are notoriously poor sharers of knowledge. Dogan and Yigit (2014) agreed with Fullan by stating that the knowledge management activities undertaken by principals and teachers were insufficient. Knowledge management needs to be undertaken to “promote organizational success” (Dogan & Yigit, 2014, p. 443). One of the principal’s and teacher’s responsibilities is to manage and goal set for their school community (Banjarnahor et al., 2018; Stein et al., 2016). Principals and teachers wrestle with processing incoming information every day. If a principal is also a teaching principal, they have even less time to process information and turn it into knowledge as they are also prepping for class, teaching the class, assessing the students, as well as being the instructional leader and dealing with all their other responsibilities. The principal is also responsible for nurturing the teacher–student relationship (Cherkowski, 2016). Principals are expected to be reflective practitioners (Ersozlu, 2016) and to empower the teachers to take the lead (Arhipova et al., 2018; Munir & Khalil, 2016; Pollock, 2016). “Teachers agree that applying knowledge management in schools can improve strategic planning capacity, management, teaching competencies, student support, and assessment for learning” (Cheng, 2013, p. 339). If a teacher has leadership responsibilities beyond classroom teaching, their time to process information may be limited.

Teachers said that a shared vision, a shared culture, and information technology support are important factors for strategic planning as well as needing data, information, knowledge, and experience that will help to develop more fully their purpose, teaching, and learning (Cheng, 2013; Farias et al., 2016). Cheng and Lee (2016) stated, “Processing and sharing of knowledge are indicators of the intellectual capital that exists within the schools which is structural and routine” (p. 539). A poetry study with students produced a response that indicated that gaining the knowledge of what the poem is trying to express helps students to “expand [their] understanding of themselves and the world” (Sawyer & McLean-Davies, 2021, p. 117).

Research Questions

The central research question dealt with the general knowledge management theory. The sub-questions addressed three major components of knowledge management. These major components of knowledge management are tacit knowledge, implicit knowledge, and explicit knowledge (Davenport & Prusak, 1998).

Central Research Question

How do principals and teachers in a school division in a western Canadian province enhance their knowledge management practices?

Sub-Question One

How do principals and teachers in a school division in a western Canadian province enhance their tacit knowledge (understood knowledge) practices?

Sub-Question Two

How do principals and teachers in a school division in a western Canadian province enhance their implicit knowledge (applied knowledge) practices?

Sub-Question Three

How do principals and teachers in a school division in a western Canadian province enhance their explicit knowledge (documented knowledge) practices?

Definitions

The following definitions will be used throughout the study.

1. *Explicit Knowledge*– the “analyzed knowledge derived from implicit knowledge through formal study (of the implicit knowledge)” (Han & Ellis, 1998, p. 6).
2. *Information* – the information “is determined by the receiver, not by the sender. Information moves around the organization both formally (e.g., in memos) and informally (e.g., at the water cooler). Unlike data, information has meaning. That is, data becomes information when it adds value” (P. Gray, 2000, p. 3).
3. *Information Technology (IT)* – is a computer-based system that stores, retrieves, and sends information using computer applications and software (Staff Report, 1998).
4. *Implicit Knowledge* – the knowledge that “takes the form of compilations of memories of past experiences rather than of an integrated model that reflects analytical cognition (it is memory based rather than rule based)” (Han & Ellis, 1998, p. 5).
5. *Knowledge* – “Knowledge is neither data nor information. It is related to both. The difference among data, information, and knowledge are a matter of degree” (P. Gray, 2000, p. 2).
6. *Knowledge Management* – is the managing of knowledge by an organization (P. Gray, 2000).

7. *Organizational Knowledge* – the “knowledge that is generated by individuals and distributed among an organization’s members” (Ahn & Hong, 2019, p. 565)
8. *Subject Matter Expert* –a person who, by virtue of position, education, training, or experience, has a greater-than-normal expertise or insight into a particular subject or process and who will help to develop resources or materials (Pace & Sheehan, 2002).
9. *Tacit Knowledge* – the “non-codified, disembodied know-how that is acquired via the informal take-up of learned behavior and procedures” (Howells, 1996, p. 91).

Summary

This chapter began with a brief overview of the contents of this chapter. Then it presented a summary of the background to the study, examining the importance of knowledge management through a historical, social, and theoretical lens. The problem statement addressed understanding how principals and teachers enhance their knowledge management practices. The purpose statement indicated that the study involved principal and teacher participants from a school division in a western Canadian province and how they enhanced their knowledge management practices. The significance of the study showed how it is vitally important for principals and teachers to be able to process information and turn it into knowledge that can be used by the learning community. There was one central research question and three sub-questions which dealt with tacit, implicit, and explicit information. The chapter concluded with the definitions that appear throughout this manuscript and the research.

CHAPTER TWO: LITERATURE REVIEW

Overview

This chapter will address the theoretical framework on which knowledge management is based. The knowledge management theoretical framework created the foundation on which this study took place. In this chapter the related literature examines research already conducted on the components of knowledge management. Research conducted on tacit, implicit, and explicit knowledge is also discussed. Knowledge management practices such as knowledge creation, knowledge sharing and transferring, knowledge application, and knowledge storage are discussed. Culture as an important research topic is presented, and research on leadership, principal leadership, and teacher leadership is highlighted. The chapter concludes with a summary addressing the gap in the literature that this study explored, as well as the theoretical and practical value of how principals and teachers in a school division in a western Canadian province may enhance their knowledge management practices.

Theoretical Framework

The theory guiding this study was the knowledge management theory (Davenport & Prusak, 1998). In their seminal work on knowledge management, Davenport and Prusak (1998) identified four elements critical for knowledge management: people, strategy, process, and content-technology. These authors studied 30 companies and organizations to understand how they process, store, and use their knowledge, which gives them a competitive edge. They noticed that these 30 companies and organizations had a system to retrieve knowledge, process it, and store it for their benefit in the future. They also noted that companies and organizations became more effective and efficient at processing their data, information, and knowledge through a system of management. Accessing, generating, embedding, and transferring knowledge were

identified as the four sequential activities that were foundational to knowledge management (Davenport & Prusak, 1998). Knowledge management was described as the gathering of data, processing the data to become information, and then processing that information into working knowledge, all for the benefit of giving a company or corporation a competitive and innovative edge (Bhatti et al., 2011). Ubon and Kimble (2002) stated that “effective knowledge management initiatives require the combination of three strategies: the utilization of explicit and tacit knowledge, the promotion of knowledge creation and sharing at all levels, and the application of the right mix of knowledge management tools and techniques” (p. 2). Davenport and Prusak (1998) defined data as a “set of discrete, objective facts about events” (p. 2). Data became information when there was an exchange of data between the “sender” and “receiver” (Davenport & Prusak, 1998). When information is shared, it has a purpose and a significance because it is “contextualized, categorized, calculated, corrected, and condensed” (Davenport & Prusak, 1998, p. 4). Contextualizing data gives them purpose. Categorizing data identifies the key components. Calculating data provides statistics. Correcting data removes any errors and condensing data provides a summary in a condensed form.

“Knowledge management draws from existing resources that your organization may already have in place [such as] good information systems management, organizational change management, and human resources management practices” (Davenport & Prusak, 1998, p. 163). Knowledge is a combination of “experience, values, contextual information, and expert insight that provides a framework for evaluation and incorporating new experiences and information” (P. Gray, 2000, p. 2). Knowledge management is about getting the right information to the right people in the right amount of time (Anklam, 2002). Knowledge management is “an essential component of organizational life” (Girard & Girard, 2015, p. 1). Knowledge management is also

an interdisciplinary field that involves tools, techniques, ideas, and methods from sociology, cognitive behavior, library sciences, and computer and technology sciences (Hawamdeh, 2018).

Knowledge is a cornerstone of all organizations, and how it is processed and delivered to all involved is critical to the success of the organization. Jarrah and Alkhazaleh (2020) stated that knowledge management is “one of the most basic means that enable [organizations] to achieve development and change excellently” (p. 1). The persons receiving the knowledge and processing it must be able to process it in the most efficient and effective manner. “Employees [need] to apply what they know and learn from experience” (Värk & Reino, 2020, p. 178). Knowledge management is still changing as people discover how to process knowledge more efficiently and effectively (Jarrah & Alkhazaleh, 2020; Upadhyay & Manas, 2019). Knowledge is broader, deeper, and richer than data and information. According to Davenport and Prusak (1998), knowledge is a

fluid mix of framed experiences, values, contextual information, and expert insight that provides a framework for evaluating and incorporating new experiences and information. It originates and is applied in the minds of knowers. In organizations, it often becomes embedded not only in documents or repositories but also in organizational routines, processes, practices, and norms. (p. 5).

Knowledge is neither data nor information, and the three terms are not interchangeable as each has a very distinct definition. Knowledge is not simple, and it is not neat (Davenport & Prusak, 1998). Because knowledge is created, co-constructed, manipulated, and dispensed by people, it can be misunderstood, it can take time and effort to process, and the sharing of knowledge can be at the mercy of the person who is the holder of that knowledge (BenMoussa, 2009; Loon, 2019; Ooi, 2009). There are three types of knowledge: tacit, implicit, and explicit.

Tacit knowledge is knowledge that is just understood, derived from personal experience, subjective and difficult to formalize such as riding a bicycle, kneading bread, or using a word processor (Goguen, 1997; Nonaka & Takeuchi, 1995; Nonaka et al., 2000; Polanyi, 1958).

Implicit knowledge is experienced knowledge that is applied in the creation of new ideas and problem-solving and is knowledge that one knows through experience (Schacter, 1992). Explicit knowledge is knowledge that is documented and stored for future use (Nonaka & Takeuchi, 1995).

To continue to understand how the components of knowledge management can be used by various organizations, further research into this topic in schools supported the theory behind knowledge management. Principals and teachers would benefit from knowing about knowledge management by reflecting on their knowledge management practices (Chang et al., 2017).

“Knowledge management is a source of constant innovation and process enhancement”

(Upadhyay & Manas, 2019, p. 166). The knowledge management theory was the foundation for the central research question dealing with how knowledge management can be used. How tacit, implicit, and explicit knowledge is managed was the foundation of the sub-questions. When analyzing the data, an in-depth look into how tacit, implicit, and explicit knowledge laid the groundwork as to how knowledge management is used within a school setting. The reporting of the findings further supported the various components of knowledge management. Current literature lays a solid foundation for knowledge management although Gauthier and Zhang (2020) have stated, “The absence of significant scholarly attention [to knowledge management] is a substantial limitation” (p. 1808). Further research on how principals and teachers in a school division in a western Canadian province enhance their knowledge management practices added to the research that already exists.

Related Literature

For the last 30 years, knowledge management has been a process that many corporations and companies have adopted to gain a competitive edge (Davenport & Prusak, 1998; Nonaka & Takeuchi, 1995). Educators started to realize that employing the knowledge management process might help to realize their goals as well (D. L. Gray & Lewis, 2013; P. Gray, 2000). Education was slow to adopt knowledge management practices, but principals and teachers have begun to see the value of following such practices (Ather & Awan, 2021; Kim & Hong, 2019). To fill the gap in the literature and further understand how knowledge management can support educational goals, this study gave principals and teachers in this school division in a western Canadian province an opportunity to examine how the participants may enhance their knowledge management practices by considering various aspects of it. The knowledge management system consists of four components.

Components of Knowledge Management

The first component of knowledge management is the people who handle the data, which can become information and can eventually become knowledge if processed properly (Beijerse, 1999; Fowlin & Cennamo, 2017; Mentzas & Apostolou, 1998). As people work through the process of data becoming information which can become knowledge, there is a vested interest in the intellectual capital that people share, and through these contributions a culture is created (Bhatti et al., 2011; Farrell, 2017; Palacios Marqués & Garrigós Simón, 2006; Rubenstein-Montano et al., 2000; Selah et al., 2017; Sun, 2010). According to Wiig (1996), people bring insights, understanding, and practical know-how. The intellectual capital that people bring to an organization is invaluable (Rollins & Halinen, 2005; Sunassee & Sewry, 2002). Intellectual capital can be information that is learned through experience as one matures, it can be learned by

talking and listening to someone, and it can be learned through research and exposure to information that is stored electronically or in document form.

The second component of knowledge management is strategy. To be strategic is to work towards a goal, which can involve an organizational vision, mission, and goal. It is important that the knowledge management approach is in alignment with the organizational vision, mission, and goals (Chantanee et al., 2021; Chatzkel, 2000; Duffy, 1999; Jooste, 1999; King, 2000; Rubenstein-Montano et al., 2000). Ooi (2009) identified the importance of strategic planning in the management of knowledge as well as the analysis of how that knowledge can be utilized. If it is not processed in the most efficient, effective, and engaging way, valuable time and energy have been wasted. Sun (2010) talked about strategic engagement using systems thinking. Systems thinking is how individual parts or individuals work together to create one interwoven and valuable system (Broks, 2016). There is a plan and format to systems thinking which might look different for each organization. Systems thinking not only includes the people working within the system directly but also could involve the stakeholders for which the system is being strategically created. To involve people in systems thinking is to tap into the wealth of information that people have through their experiences. Rollins and Halinen (2005) felt it was important to involve the stakeholder or customer strategically as part of systems thinking. Analyzing what the customer has to say and then generating and disseminating that knowledge would be beneficial to all stakeholders (Rollins & Halinen, 2005; Tiwana, 2000; Wiig, 1996).

The third and fourth components of knowledge management are how the data, information, and knowledge are processed using information technology (IT). Taking the time to analyze collectively what the data are saying is one of the first steps to gaining insight into what information might be useful in becoming knowledge (Na, 2020; Ooi, 2009; Powell & Ambrosini,

2017; Sunassee & Sewry, 2002; Wiig, 1996). To consider data and information as potential knowledge, they must be context driven, performance led, enabler savvy, and sustainable (Loon, 2019). Context-driven data and information can be gathered through experience, conversation, and research. Performance-led data and information can be gathered through carefully planned processes set up in such a way that the desired outcome is reached or reevaluated and redirected to achieve the desired outcome. They also need to be descriptive and prescriptive (Bohyun, 2021; Holland, 1998; Malhotra, 2000; Rubenstein-Montano et al., 2000), descriptive in the sense that the entire procedure can be replicated by an independent group of people in search of the same or different results. The outcome of a replicated procedure may have the desired result of the same outcome, or it could be replicated in such a way that the desired outcome may be slightly different depending on what was learned from the first procedure and what the group of people would like to accomplish. The management of knowledge needs to be well detailed in all aspects with the result also being how to use the knowledge to achieve the vision, mission, and goals of the company and the stakeholders. Rollins and Halinen (2005) talked about how in generating and disseminating data and information, it is important to listen to the stakeholders and what they have to say as they will be affected by the data, information, and knowledge that are generated. Processing data and information to become knowledge is a laborious task (BenMoussa, 2009; Bhatti et al., 2011; Reshetnikova, 2020; Sun, 2010). Having the most current IT infrastructure and having employees who know how to use it to store knowledge are necessary (Aborisade, 2013; Al-Gharbic & Naqvi, 2008; Ghabban et al., 2018; Howells, 1996; Rao & McNaughton, 2019; Selah et al., 2017). To know that the most current IT infrastructures are being used supports the accumulation and dissemination of knowledge.

Tacit, Implicit, and Explicit Knowledge

Tacit knowledge is something that a person knows through experience or intuition (Nestor-Baker & Hoy, 2001; Zeira & Rosen, 2000). Implicit knowledge is knowledge that a person acquires through experience and applies it regularly (Schacter, 1992). Explicit knowledge is documented information that has become knowledge as it is stored and can be retrieved when needed (Nonaka & Takeuchi, 1995).

Tacit Knowledge

Tacit knowledge is knowledge that one acquired through everyday activities or over a longer period and occurs without any realization that learning is occurring or has taken place (Hibbi et al., 2020; Leonard & Sensiper, 1996; Matsokova, 2018; St. Germain & Quinn, 2005; Zeira & Rosen, 2000). Tacit knowledge is sometimes difficult to explain (Ambrosini & Bowman, 2001; Howells, 1996; Linde, 2001; Marinkovic, 2021; Platts & Yeung, 2000; Senker, 1995; Zeira & Rosen, 2000). “The tacit form of knowledge is subconsciously understood or applied, difficult to articulate, developed through direct action and experience, and shared through conversation, storytelling, etc.” (Singh, 2008, p. 5). According to Zeira and Rosen (2000), tacit knowledge is practical wisdom. According to Polanyi (1958), tacit knowledge is an active shaping of experience and power that is indwelling and interiorization. “I shall reconsider human knowledge by starting from the fact that we know more than we can tell” (Polanyi, 1958, p. 4). Tacit knowledge is knowing how to ride a bicycle (Polanyi, 1958); it is knowing how to knead bread (Nonaka & Takeuchi, 1995) it is also knowing how to use a word processor (Goguen, 1997). Tacit knowledge is the knowledge that someone has to make a cherry pie. They just know how to make that cherry pie through experience. A person just knows information and just has knowledge about things. Platts and Yeung (2000) said that tacit knowledge is knowledge

in action. Kreiner (2002) stated that tacit knowledge is not easily transferred through documents, blueprints, and procedures.

Many organizations will have employees who through their many experiences will just know how to do things or just know about things. This type of knowledge is very valuable to the organization and is very difficult to document but is received by all who are listening to their fellow workers sharing this knowledge. This type of tacit knowledge may be brought with them from another company or they may have acquired it over a period with the company for which they are working or as they grew up. Employees with this type of working tacit knowledge usually feel confident enough to share what they know with fellow workers. Depending on how fellow workers accept what is offered to them will all depend on how that fellow worker approaches the sharing of this knowledge. The leaders within these organizations would benefit from knowing how to process this type of knowledge and support the workers who have this knowledge to share.

Implicit Knowledge

Implicit knowledge is applied knowledge. It is understanding how something works and how using it can make other things work (Han & Ellis, 1998; Oseledchik et al., 2017; Schacter, 1992; Zoltan & Altmann, 1997). Zoltan and Altmann (1997) explained that it is applying unconscious knowledge. It involves task performance (Schacter, 1992). Implicit knowledge is “the pre-requisite and reason for a person’s daily activities, communication, cognition, and understanding between two people” (Oseledchik et al., 2017, p. 673). Implicit knowledge can be acquired on a regular basis and with much repetition through the experience of repeatedly listening to a person who has knowledge to share. Implicit knowledge is also information in gestures such as watching children play, doing puzzles, and figuring out how something works

(Broaders et al., 2007). Everyone can acquire implicit knowledge by watching how things are done no matter their age. Implicit knowledge can be found when someone helps someone else make that cherry pie.

Explicit Knowledge

Explicit knowledge is information that is documented and made available to whomever needs or wants that information. Documented information becomes knowledge that needs to be managed (Desouza et al., 2006; McCall et al., 2008). Brooks and Kempe (2020) said that explicit knowledge is “influenced by prior knowledge” (p. 565). Nonaka and Takeuchi (1995) said that explicit knowledge is codified pieces of insight. Explicit knowledge involves four aspects: socialization, externalization, combination, and internalization (Nonaka & Takeuchi, 1995). Socialization involves interaction between people sharing information and knowledge. Externalization is turning tacit knowledge into explicit knowledge. Combination involves recycling and making explicit knowledge reusable. Internalization turns knowledge into context for individuals. Implicit knowledge can become explicit knowledge through team meetings, workshops, webinars, small group conversations, and out-sourcing. Explicit knowledge can be stored electronically, digitally, in books, in libraries, in whatever form the company or organization feels best it can be stored and utilized. Someone decides to record the instructions on how to make that cherry pie for people to use independent of the person who has written the instructions.

For organizations or companies to best use tacit, implicit, and explicit knowledge, there needs to be a culture of learning and growth. It needs to be a culture that is conducive to working together in an equitable way. It must be created in a foundation of optimism, trust, security, and safety.

Knowledge Management Practices

For an organization tacit, implicit, and explicit knowledge is processed through knowledge management practices (Al Teneiji et al., 2022; Mazhar, 2021; Migdadi, 2022; Palacios Marqués & Garrigós Simón, 2006; Renganathan et al., 2022; Zaim et al., 2007).

Knowledge management practices involve knowledge creation as well as knowledge sharing and transferring. Knowledge management practices also include knowledge storage and knowledge application.

Knowledge Creation

Knowledge creation is the collecting of knowledge. It is also the generating of new knowledge through conversations, research, inquiries, and thought processes (Egbu et al., 2005; Hussain et al., 2004; Jakubik, 2011; Khalil et al., 2006; Nieves & Osorio, 2013; Nunez Moscoso, 2019). Knowledge creation is seen as an effective use of knowledge and can create a positive working environment within an organization (Chan et al., 2012; W. Chen et al., 2020; da Silva Alcantara et al., 2022). It is a learning opportunity for the people within the organization that creates excitement and personal and organizational growth (Al-Haraizah, 2022; Barua, 2021; Egbu et al., 2005).

Knowledge Sharing and Transferring

Once the knowledge is created or gathered by whatever means, knowledge sharing and transferring occur. This could be strictly information or knowledge activities. Knowledge sharing could take place in forums, meetings, small group discussions, online discussions, workshops, webinars, and conferences (Davenport & Prusak, 1998; Hussain et al., 2004; Imran et al., 2021; Kasapoğlu et al., 2021; Taylor, 2006). Knowledge transfer occurs when knowledge sharing is

successful and the knowledge that is shared is applied and then stored (Hasnain et al., 2016; Islam et al., 2021; Syed Mustapha, 2017).

Knowledge Storage

Before knowledge is applied, it is stored either in a person's or organization's memory or formally stored in files, books, software, or programs (Baskerville & Dulipovici, 2006; Egbu et al., 2005; Hussain et al., 2004; Khalil et al., 2006). Knowledge storage can reflect the competencies of the organization (Nghah & Wong, 2020; Silamut & Petsangsri, 2020). How the knowledge is stored will greatly depend on how the organization wants to utilize it when it is needed (Baskerville & Dulipovici, 2006; Chugh et al., 2020; Lin, 2013).

Knowledge Application

Once knowledge is created, shared, transferred, and stored, the organization can decide what needs to be applied and when it needs to be applied. One of the very important considerations is to know when to apply the stored knowledge (Al-Haraizah, 2022; Chugh et al., 2020). A well-structured organization will have a system that determines when to apply the knowledge and in what order, how often to apply it, how long to apply it, and when to revise and apply new knowledge (Cheng & Lee, 2016; Ishak & Mansor, 2020). Meeting the organization's goals and outcomes lies in the knowledge application (Mills & Smith, 2011).

Culture

Culture defines the organization, and climate is how that occurs. According to Senge (1990), learning organizations concentrate on personal mastery, mental models, shared vision, and team learning. Improving oneself through a consistent, daily, conscious effort is personal mastery. A mental model is something that people reflect on and create for themselves based on what is happening around them. The strength of the learning organization is in their shared vision

(Bisel, 2017; Chatman & O'Reilly, 2016; Hogan & Coote, 2014). Team learning and team cohesiveness make the shared vision a reality (Aydin, 2018; Warrick, 2017).

To make a workplace vibrant with integrity, group interaction, flexibility, and a willingness to be open to change are important according to Mehta et al. (2013). In the times of change, integrity is essential to ensure that the change that needs to occur or is happening is not sacrificing the identity of the group so that the vision and mission of the group are still within the nature of what the group believes the group to be. The type of vibrancy in group interaction is evident when group members can work together and there is a rhythm and a flow to what they are doing in terms of the decisions being made and carried out. Flexibility during change is critical to the very nature of change. Change cannot happen if there is no flexibility. It is important to know how flexible to be. Change will not occur if the members of the group are static and either do not want to change or do not know how to change. How the group interacts through their integrity, flexibility, and willingness to change will not only promote healthy cultures and climates but provide an atmosphere in which job satisfaction can not only survive but thrive. Ali and Patnaik (2014) contended that job satisfaction will promote healthy cultures and climates. If people love coming to work, they will create a healthy culture, climate, and organization. If people are engaged in creating this healthy culture, climate, and organization, it will stay that way. Healthy cultures, climates, and organization will need to constantly be nurtured to avoid any regression occurring. Healthy climates and cultures consist of authentic learning, structured environments, healthy relationships, and a plan for continuous improvement (Driskill, 2018; Meng & Berger, 2019; Thapa et al., 2013).

Leadership

Kouzes and Posner (2006) said that leadership needs to operate tactically and futuristically. Hubbard et al. (2002) stated that effective organizations need to rely on leadership and not just leaders. Fullan (2011) stated that leadership empowers people to be focused, effective, motivated team members who are active and responsive and cooperative collaborators who are humble and confident. A humble leader will put other people's needs first without sacrificing their own needs. A humble leader will keep in perspective what needs to be done to ensure that all needs of the people being served are served in the right way. A humble leader has a sense of confidence that inspires others to be trusting and to feel confident and self-assured in a way that is not boastful but genuine. Leaders are role models with insights to help set the direction for the organization and who use an open communication platform to encourage participation from all followers (Aydin, 2018; Banjarnahor et al., 2018; Burns, 1978; Hitt & Player, 2019). Open communication is key when encouraging others to participate, to follow the lead, to share in the leadership, and to work towards the common goal. Leaders support all followers with meaningful feedback and empower employees to realize that failing at any given project or task is not fatal (Cherkowski, 2016; Eres, 2011; Van Winkle et al., 2014). Leaders provide a safe environment where people are comfortable with taking risks, providing new ideas, and find the strength, courage, and conviction to follow through on any endeavor that is undertaken. Leaders are also available when the people they serve are working through the process to achieve their goals. Leaders are there when the journey to achieving a goal is not going well, needs a change in direction, or needs to be readjusted entirely to accomplish what is desired. Leaders give the type of feedback that will motivate people to believe in themselves and help them to be understood if what is being attempted is not going well. Leaders should also be

one of the first to identify what is going well. Recognizing a job well done and sharing that celebration with followers is an essential part of leadership (Green et al., 2011). Leaders build or rebuild a culture by employing the right process through mentorship and frequent and effective feedback (Hauserman & Stick, 2013).

Transactional Leadership

A transactional leader values order and structure as a method that leads to results (Burns, 1978). The order and structure that a transactional leader brings to an organization helps to create an atmosphere where the people within the organization focus on what needs to be accomplished. The transactional leader will have a clear vision and mission that may need to be embraced by everyone in the organization. The transactional leader is a formal authority that works to maintain the routine (Goodwin & Davis, 2021; Sivarat et al., 2021). A transactional leader sets goal-attaining criteria for the workers that are definite and clear with expectations that procedures will be followed so the goals will be met. When goals are achieved, there are rewards, and when targets are not met, there are consequences (Stedman & Adams-Pope, 2019). Workers are carefully monitored, and workers are expected to obey instructions. Transactional leadership thrives on routine and expects followers to adhere to the same rigor. Where transactional leadership thrives on routine and order, there also needs to be leadership that considers opportunities for growth outside routines and order; this is accomplished through transformational leadership.

Transformational Leadership

Sayyadi Ghasabeh and Provitera (2018) said that transformational leadership creates positive effects on an organization's capabilities, influences organizational knowledge, and assists with organizational change. To challenge people within an organization to move in a new

direction through a higher level of morality and motivation, the leader must have transformational leadership qualities (Burns, 1978). Transformational leadership involves idealized influence, inspirational motivation, intellectual stimulation, and individual consideration, which supports changes and growth in individuals as well as changes and growth in social systems (Avolio et al., 2004; Setyaningsih & Sunaryo, 2021). Idealized influence in transformational leadership is a leader leading beyond self-interest and keeping the collective interest of the group a priority. It is influence that inspires others to go beyond their self-interest to keep the collective interest of the group in mind. Inspirational motivation involves helping others to identify a sense of purpose through confidence and motivation. Transformational leaders empower others to align their needs to the needs, objectives, and goals of the group. Intellectual stimulation from a transformational leader will challenge assumptions, encourage risk-taking, and ask for ideas. A transformational leader will also consider the individual's needs by being a coach, a mentor, and a guide.

Valuable and positive change in followers is also the mandate of transformational leaders with the hope that their followers will one day become leaders themselves. Transforming followers to support each other and the organization is also an obligation and mandate of the transformational leader. Followers of transformational leaders learn to trust themselves and others, have a sense of admiration, loyalty, respect, and are more willing to work with purpose (Eres, 2011; Hauserman & Stick, 2013). Instilling in followers the sense of values and beliefs helps to nurture the followers' moral development. Moral development is a very personal growth, and while transformational leaders take great care in honoring who the person is, there are opportunities, conversations, and experiences that the transformational leader will support that provide the moral development. Transformational leaders are colleague-centered supporters

as well as persuaders of moral conviction and personal growth (Lowery, 2014; Ruggieri et al., 2013). Transformational leaders are caregivers, revolutionaries, and creators of healthy environments (Lowery, 2014; Ruggieri et al., 2013). Moral development as part of the transformational leadership role is key in providing opportunities for the type of growth that is beneficial for not only the person but for society as well. Authentic leadership became a type of leadership that was also necessary to support the growth of a sense of moral development.

Authentic Leadership

Scandura and Dorfman (2004) contended that a new leadership theory needed to be developed because of all the scandalous business behavior that was taking place within society. The new leadership framework needed to be developed to ensure better leadership for the future where leaders were very much aware of their moral perspective, their values, their behavior, what they know, and their own personal strengths that they bring to an organization as hope, confidence, and resilience (Avolio et al., 2004; George, 2003; Ribeiro et al., 2020). Self-awareness, unbiased processing, relational authenticity, and authentic behavior are the four core elements of authentic leadership according to Kernis and Goldman (2005). Self-awareness involves one's personality, emotions, needs, values, as well as habits and how this affects one's actions and the actions of others. Unbiased processing involves being self-reliant where private knowledge and experiences are not ignored and taken for face-value. Relational authenticity and authentic behavior involve being true to oneself and others. The loyalty and trust from their followers are inspired by authentic leaders through their transparency, their originality, their decision-making skills, and their personal convictions (Frederickson, 2003; Kernis, 2003; Shamir & Eilam, 2005; Zhang et al., 2021). Authentic leaders help people believe that they can achieve what they want to accomplish. Authentic leaders also help people to realize and decide what they

do want to accomplish. Authentic leaders help people realize that accomplishments and achievements can be made as a group of people who have the same vested interest in helping each other achieve what they are striving to achieve. Bandura (1997), in his personal agency theory, stated,

In agentic transactions, people are both producers and products of social systems. Social structures—which are devised to organize, guide, and regulate human affairs in given domains by authorized rules and sanctions—do not arise by immaculate conception; they are created by human activity. (p. 6)

To be authentic is to be genuine and sincere with oneself and with others. To be genuine and sincere with oneself and others comes from the innermost part of a person (Tsemach & Shapira-Lishchinsky, 2021). Authentic leadership in supporting the innermost part of a person leads into spiritual leadership as spirituality can be the innermost part of a person.

Spiritual Leadership

According to Teilhard de Chardin (1959), people are spiritual beings looking for a purpose in life that is meaningful. A spiritual being may or may not be religious. Spiritual leadership helps others look inward to discover what this meaningful life purpose. Fry et al. (2005) said, “Spiritual leadership theory creates an intrinsically motivated learning organization involving values, attitudes, and behaviors to motivate oneself and others in order to have a sense of making a difference” (p. 835). These values, attitudes, and behaviors are different for everyone and need to be respected as people work together in organizations. A level of trust to share values and attitudes is essential as dealing with one’s spirituality is very personal. This level of trust grows as one realizes it and nurtures it through an honest relationship with self and with others. The authentic leader supports and encourages others to look within to find this

honest relationship. Overcoming controversies and challenges for a leader can occur through persevering spiritual practices (Hitt & Player, 2019). Green et al. (2011) stated, “The higher the leaders’ daily existential spiritual well-being the more the followers, peers and supervisors rated the leaders as active, transformational leaders” (p. 46). Developing a daily practice of this existential spiritual well-being does need time to develop and become an automatic part of a person’s life.

Spiritual leadership has a positive influence on the organizational culture (Budiarti et al., 2020; Dent et al., 2005; Hunsaker & Jeong, 2020; Khan et al., 2015; Mushbasher et al., 2017). Spiritual leadership encourages the workers in an organization to consider their own spiritual values and how that can affect their lives and how their spiritual values can help things get done. Recognizing and embracing one’s spiritual well-being is essential to the culture and climate of an organization as that is where growth will occur. “Employees’ socio-psychological resources such as spiritual well-being are enhanced through spiritual leadership and organizational climates which can be augmented by organizational climates that embrace young workers ‘whole’ selves” (Hunsaker & Jeong, 2020, p. 3527).

Transactional, transformational, authentic, and spiritual leadership are the styles of leadership that are important for principals and teachers to consider when leading and managing a school. Each leadership style will need to be used at the discretion of the principal and the teachers. Principals and teachers need to be able to know what style of leadership is necessary for each situation that they encounter. Principals and teachers who are equipped with the ability to switch between these styles of leadership will serve their school communities and their students well.

Leadership and Knowledge Management Practices

Transactional, transformational, authentic, and spiritual leadership support knowledge management practices. These four leadership styles offer support to knowledge management practices strategically. It will all depend on what leadership style is needed for which knowledge management practice.

Transactional and Transformational Leadership and Knowledge Management

Transactional and transformational leadership have constant and positive effects on knowledge management (Al Amiri et al., 2020; Ghanbari & Abedzadeh, 2016; Nam Nguyen & Mohamed, 2011). There is a positive and meaningful relationship between transactional leadership and knowledge transfer, knowledge utilization, and knowledge retention (Ghanbari & Abedzadeh, 2016; Heijne-Penninga et al., 2013). This positive and meaningful relationship strengthens the tolerance of errors and helps to create knowledge for the organization. “When primary knowledge managers within organizations adopt the transactional and transformational leadership styles, there is a notable increase in knowledge management activities” (Analoui et al., 2012, p. 4). Knowledge sources are optimized which leads to more innovation when knowledge sharing activities are increased (Rawung et al., 2015). Knowledge workers are also positively affected with transactional and transformational leadership (Atapattu & Ranawake, 2017).

Authentic Leadership and Knowledge Management

Alzghoul et al. (2018) found that “empirical results suggest that authentic leadership positively influences workplace climate, creativity, and job performance” (p. 592). Gardner et al. (2011) said that authentic leaders must honor their “core values, beliefs, strengths—and weaknesses” (p. 1145). This honor of values, beliefs, strengths, and weaknesses will help leaders

who lead authentically to be more effective. A sense of excitement is created in the organization when authentic leaders can express their uniqueness and feel safe doing so (Gardner et al., 2011). The values, beliefs, strengths, and weaknesses that are shared by authentic leaders encourage people within the organization to share their own stories and the knowledge that they have accumulated through their experiences which might be valuable to the organization (Tran, 2019). Tran (2019) observed, “Authentic leadership influences knowledge sharing directly and indirectly through the mediating impact of relational psychological contract and organizational based self-esteem. Authentic leadership fosters knowledge sharing by reducing perception of net resource loss and increasing expectance of future resource gain” (p. 397).

Spiritual Leadership and Knowledge Management

Spiritual leadership creates a culture where the people in the organization feel that their spiritual needs are being met whether their spiritual needs are religious. It creates an environment in which the people are motivated to carry out their knowledge management processes in the areas of knowledge creation, knowledge sharing, and knowledge reuse (Martinez Soto, 2017). Besides power and authority, spiritual values, emotional connection, and authenticity are also a very important part of leadership (Martinez Soto, 2017; Wahid et al., 2019). The acceptance of “spiritual leadership potential in engendering trust toward encouraging knowledge sharing behavior requires discovery by incorporating the element of religiosity, culture, ethnicity as well as other demographic profile to help strengthen the influence of spiritual leadership on knowledge sharing behavior” (Wahid et al., 2019, p. 94). Having the courage to share knowledge which leads to enhanced innovative work behavior is positively affected by spiritual leadership (Usmanova et al., 2021). According to Yasin et al. (2023), spiritual leadership supports the organization by building strong social relationships. Spiritual leadership positively affects

psychological safety, which positively affects knowledge sharing, which positively affects intellectual capital, which builds a strong organization (Yasin et al., 2023).

Principal Leadership

Goal setting and monitoring of these goals are the managerial responsibilities of the principal (Banjarnahor et al., 2018). Management dictates that structure is present, deadlines are to be met, and results need to be achieved (Atasoy, 2020; Davidova & Kokina, 2018; Fink & Resnick, 2001; Gaziel, 2003). Principals also need to be loving, nurturing, empathetic, caring, communicative, and anything else that brings out the best in the people who are being served (Dantley, 2010; Hunsaker & Jeong, 2020; Mosley et al., 2014). Principals need to know how much pressure to put on staff members and how much support needs to be offered when staff members struggle with any aspect of their role as teachers, especially in achieving the goals that the school has set for that year. The principal must always keep in mind the happiness of the teachers, other staff members, students, parents, and the surrounding community. How teachers and other staff members are feeling will impact what happens in the classroom as well as in the school and community at large (Dogan & Yigit, 2014; Munir & Khalil, 2016). The principal needs to know how to deal with situations that are less than happy for the staff members, students, parents, and the community at large. How the principal deals with this will vary according to the situation. The principal also needs a series of resources to rely on when situations arise that cause turmoil or stress in the lives of the people the principal serves. The principal can be seen as the first line of defense against anything that comes into the school. The principal needs to protect the learning that is happening in the classroom while at the same time, challenge the teachers to grow professionally and personally and always seek to discover what is available to make learning exist at its optimum (Russell, 2013; Shaw & Newton, 2014; Van

Winkle et al., 2014). Each staff member needs a different type of support which will range from the novice teacher to the experienced one (Munir & Khalil, 2016). For the various types of support that staff and students need, the principal is to be a transactional leader, transformational leader, authentic leader, and spiritual leader.

Principal as Transactional Leader

Anderson and Dexter (2000) stated that principals as transactional leaders involve staff in creating a vision, a mission, and a set of core beliefs. The vision, mission, and set of core beliefs are the structures that moves the school forward. Principals will help the staff with strategic planning and setting goals and will expect that teachers follow through with achieving the goals that were set not only in the school but also in the classroom (Atasoy, 2020). Principals who are transactional leaders will discuss with the teachers what curriculum will be taught, how it will be assessed, and what their yearly, monthly, and weekly plans might look like. Principals will also discuss with the teachers the funds that will be needed for resources and how to responsibly spend the money that is allocated for these resources. There will be forms to fill out, deadlines to be met, and reports to be written. Principals as transactional leaders will also expect that plans will be implemented and will expect that plans will be evaluated periodically to guarantee that goals will be met (Goodwin & Davis, 2021). Principals as transactional leaders will work with new initiatives that come into the school and help teachers and staff members implement these new initiatives. Transactional principals will also look for efficiency in budgets and how the school will progress through the day, week, month, and year. Principals will also uphold the discipline protocols by supporting the students, teachers, and parents as rules and procedures of conduct are adhered to and supported. Principals will also expect that all the special needs of students will be identified and met in the most professional ways. For a well-developed,

structurally sound, and efficiently run school, principals must also be aware of how teachers, staff members, students, parents, and the community will grow. This is accomplished through transformational leading.

Principal as Transformational Leader

Principals who are transformational leaders help teachers to develop a pedagogical delivery in the classroom that involves an ethical approach with high expectations (Munir & Khalil, 2016). Hauserman and Stick (2013) said that transformational leadership in principals included “idealized influence, individual considerations, inspirational motivation, and intellectual stimulation” (p. 196). Principals as transformational leaders are personally motivated to help teachers and students achieve authentic results for themselves and others (Navickaitė, 2013). Lowery (2014) said that transformational principal leadership is humble and is only concerned with the greater good; transformational leaders are more interested in accolades for the teachers and students than for themselves and desire to help teachers and students achieve a level of self-efficacy. Working with teachers to collectively set a vision and work to achieve it is a goal of a transformational principal leader (Cerni et al., 2014; Stein et al., 2016). Helping teachers and students find their authentic self, their strengths, and their gifts is the work of the principal as a transformational leader. The transformational principal will also help staff and students identify areas of their learning and of themselves that they would like to develop. The principal as a transformational leader is evolutionary and revolutionary because change and growing in a new positive direction help people to be the best they can be. Principals are transformational leaders who will support parents and the community as they navigate the changes and the growth that takes place in the students. Parental and community support by the principals could appear in the form of informational evenings, community awareness initiatives

such as taking care of the community with the help of the parents and the community, and an open-door policy to become involved in the activities within the school. Principals helping teachers, students, staff members, and the community reach their authentic selves is sustainable through authentic leadership.

Principal as Authentic Leader

Principals as authentic leaders while still projecting leadership and management skills also show their staff their vulnerable side (Fox et al., 2015). Principals as authentic leaders are very self-aware (Gaziel, 2003). They know their strengths and use them in the humblest and kindest ways. They are aware of their personal areas where they can grow and are not afraid to be open to someone helping them to grow. They are not afraid that people will see and know that they have challenges and struggles. They model how to use personal strengths and how to be open to growth in the areas where they can grow (Feng, 2016). Principals can inspire other people to show their vulnerable side by showing their own vulnerable side. Showing vulnerability and opening oneself up creates the opportunity for growth as there is a certain amount of trust and confidence that needs to be present when showing others where one may not feel strong. Principals showing this can help people be open to the same thing and that can be one of the ways that a group can move forward and make the necessary changes so all stakeholders can flourish. Principals as authentic leaders also know how to deal with processing information, knowledge, and situations in an unbiased way without exaggerating or minimizing any implications (Calvillo, 2013), which can also happen when one has acknowledged and embraced their vulnerability.

Authentic leadership for principals also involves relational authenticity (Bird et al., 2009). Relational authenticity is the foundation on which principals can inspire and solidify the

personal and professional relationship with the staff. Authentic relationships with staff are found in the authentic behavior of principals when they are being true to themselves (Kulophas & Hallinger, 2021). This is their inner self which guides them as they make decisions to support the learning community as they move forward to achieve the goals that they have set for the school and for themselves. To work with teachers, staff members, students, parents, and the community in relationship will support the goals that are being sought.

Principals as authentic leaders will have a management plan which they intend to fully achieve. As they work with the staff to decide on their direction, they are not afraid to make mistakes. If they do need to reevaluate and redirect, they have confidence in themselves and in their learning community to set the path right again (Feng, 2016). Not being afraid to make mistakes, to acknowledge them, and then to redirect what needs to be done can encourage teachers, staff members, students, parents, and the community to feel that they can make mistakes as well and be comfortable and confident that redirection can take place for them as well. To embrace mistakes and how to do that can be grounded in the spirituality of principals.

Principal as Spiritual Leader

Principals as spiritual leaders help students and staff to develop into positive influences and influencers in society (Cameron & Swezey, 2015). To have influence is to influence the character, the development, or behavior of someone or something such as society. When working with the development or behavior of one's character, extra care must be taken as to not damage someone in anyway. One's spirituality is very personal and can be the very essence of someone. Providing an opportunity for people to learn how to tap into their spirituality to help build self-assurance to grow as lifelong learners can be one of the many roles of a spiritual leader (C. Y. Chen & Yang, 2012; Wang et al., 2019). The principal as a spiritual leader can provide that

opportunity for all stakeholders in the learning community, and it needs to happen with great care.

Principals as spiritual leaders are governed by their own personal beliefs whether they are religious or not (Fry et al., 2005; Green et al., 2011). These personal beliefs give meaning and purpose to what they do as administrators (Pio & Lengkong, 2020). C. Y. Chen and Yang (2012) stated that spiritual leadership has a positive effect on school communities in terms of values, attitudes, and behaviors. Lavery (2012) said that principals who are guided by their spirituality lead with their heart and their head. Being self-reflective is to be connected to what is going on around them. They are motivated by their spirit to empower others through moral purpose, challenging those around them to become change agents (Dantley, 2010; Lavery, 2012). The moral growth that principals may support in their stakeholders needs to be handled with great attention and protection. Everyone's moral compass is unique and can be shaped through reflection, observation, and determination and must be guided with a considerable amount of forethought and encouragement. Spirituality shapes the principals' educational philosophies, leadership style, and decision-making processes (Dantley, 2010; Lavery, 2012) and encourages innovative thinking (Nurlasera, 2019). These educational philosophies, the leadership styles, and decision-making processes will be viewed by the teachers, staff members, students, parents, and the community, so great care and attention must be taken when supporting all the stakeholders.

Teacher Leadership

Teacher leadership is different from principal leadership for the very role that they have in the school. Teachers lead students daily in the students' quest to learn. Teachers can be transactional, transformational, authentic, and spiritual leaders in their classrooms and throughout the school, but the type of leadership that teachers provide at the schools is

distributed and constructivist (Harris, 2003; Harris & Muijs, 2002; Jacobs et al., 2018; Lambert, 2003; Wenner & Campbell, 2017; York-Barr & Duke, 2004). Teachers provide resources, collaboration, advocacy, and modeling when dealing with student learning and outcomes (Cheung et al., 2018; Little, 2003; York-Barr & Duke, 2004). Besides their primary task of targeting student learning (Harris & Muijs, 2002; Little, 2003; Wenner & Campbell, 2017; York-Barr & Duke, 2004), teachers also provide support to fellow teachers outside of the classroom. Harris (2003) stated that teachers have agency to lead, are key in building professional learning communities with colleagues, and can exercise their influence on the values, beliefs, and actions of the school community. Teachers can impact policy development and decision-making (Jacobs et al., 2018; Wenner & Campbell, 2017). Teachers motivate colleagues by the trust that they build with each other (Harris & Muijs, 2002; York-Barr & Duke, 2004). Like the principals, teachers serve other staff members, parents, and the community, and do so in a very different way. Other staff members, parents, and the community can be teachers' stakeholders. In many situations, teachers will be the first people other staff members, students, parents, and the community go to when dealing with anything. Teachers will often listen to their stakeholders and then may need to guide them to talk with the principals. The first type of leadership that teachers provide for students, staff members, parents, and the community is transactional.

Teacher as Transactional Leader

Teachers are transactional leaders in many ways and for many reasons. Transactional leading by a teacher is also transactional learning for the student. Their prime area of responsibility is to help students learn. Teachers using a transactional leading and learning approach need to have a plan, a focus, and a way to deliver the various methods of learning to reach every student in unique ways. This requires an introduction, development, and conclusion

to any activity. Work that teachers do with their students requires goal setting, cultivation, practice, routines, expectations, and innovation (Alrowwad et al., 2020; Boone, 2019; Xie, 2019). Bringing that support to colleagues in the same way is equally important. Many experienced teachers become mentors to novice teachers and are the best ones to help novice teachers navigate the vast world of teaching and learning. Mentor teachers must show novice teachers how to be transactional and need to explain why being transactional is so important. Novice teachers need to realize that being transactional with their students is necessary for students to learn and that transactional learning is one of the key ways to learn as structure, routines, goal setting, and goal achievement are critical to their learning pathway.

As transactional leaders, teachers need to see results. Teachers provide the lessons, the assignments, and the assessments so the results they see will assist them in knowing what direction needs to be taken so that learning and the outcomes of learning are achieved. Teachers as transactional leaders need to provide for students the necessary supportive behavior (Kailasapathy & Jayakody, 2018). Teachers can influence students positively, which can affect students' commitments, organizational citizenship behavior, and learning engagement (Aboramadan & Dahleez, 2020; Van der Vyver et al., 2020). Teachers leading students from a transactional leadership perspective need to do it in such a way that students feel satisfied with what they are doing (Goktas, 2021). Teachers need to explain to students why a transactional approach to learning is important and essential to how they approach learning so they can develop that learning routine that is so crucial for all learning.

Transactional lead teachers value order and the structure necessary to get results but that should always be tempered with encouraging students and colleagues to work hard through their own ethical practices and happiness (Berkovich & Eyal, 2021; Campion & Campion, 2019).

Teachers who use a transactional leadership approach will also need to know how to manage crises as they arise (Purnomo et al., 2021). Showing novice teachers, students, and even the parents how to manage crises when they arise and do it in a transactional way is also important for the learning of the student. Transactional leading and transactional approaches to learning are essential for very specific reasons but that needs to be supported by a transformational approach to learning and leading as well. Teachers also need to ensure that students realize that there are other approaches to learning such as transformational, authentic, and spiritual.

Teacher as Transformational Leader

Where teachers as transactional leaders concentrate on routines, order, and structure, transformational teacher leadership while still having moderate accountability focuses on the student or colleague (Mammen & Pushpanadham, 2018). Transformational leadership involves influence, motivation, intellectual stimulation, and the support of the individual regarding students, other teachers, staff members, parents, and the community, all done in the way that each group needs to grow. Teachers greatly influence how students feel about themselves, how they approach learning, and how they grow to be confident members of their family, their school, and society. Teachers can also greatly influence novice teachers in the same way and then the novice teachers can do the same for their students. Teachers can also be great motivators when they can discover how each of their students can be motivated and that will be as unique as the number of students sitting in their classrooms. One of the greatest opportunities teachers have is the intellectual stimulation of their students, which might be viewed as the ultimate role of the teacher. Ultimately supporting students in the way that they need to be supported is the role and responsibility of teachers.

Transformational leadership from a teacher's perspective also involves positive change, the element of trust, loyalty, respect, to work with purpose as well as personal achievement, and sustainable development (Khumalo, 2019; Zengin et al., 2021). Transformational teacher leadership concentrates on raising the student, teachers, staff members, parents, and the community to a higher level of personal attainment. Raising these stakeholders to a higher level of personal attainment will be different for each group and will be dependent on the situation. Relationships become the foundation on which students, teachers, staff members, parents, and the community can grow because the bonds are created, bridging can occur, and experiences can be linked to provide the opportunity to grow (Menon & Lefteri, 2021; Setyaningsih & Sunaryo, 2021; Shea et al., 2020). Liu (2021) indicated that transformational teacher leaders need to set directions, develop people, redesign the organization if necessary, and manage the instructional program with trust and loyalty as foundations. Masry-Herzallah and Stavisky (2021) suggested that the quality of communication will influence organizational effectiveness. Ahmad and Bakhsh (2019) commented that to have a sense of humor with leading was a significant predictor of teacher performance in a positive way. Transformational leadership on the part of the teacher becomes a very personal journey because the teacher is dealing with the very essence of who the students, teachers, staff members, parents, and the community are as people. Being an authentic leader may also be important to the transformational teacher leader as well so the personal journey of all the stakeholders may be genuine and true.

Teacher as Authentic Leader

The authentic leadership skills teachers use center on personal strengths that involve values and moral perspective as well as interpersonal trust (Milon & Shapira-Lishchinsky, 2021; Shapira-Lishchinsky & Levy-Gazenfrantz, 2015; Thwaite, 2022; Zhang et al., 2021). Students in

a classroom see on a daily basis the values of teachers in how teachers greet them at the beginning of the day, how they plan lessons and carry them out, the types of handouts or assignment that are worked on, the types of media that students watch, the behavior management that occurs, the way the teachers dismiss the class, the way teachers do recess or lunchroom supervision, and how they say good-bye at the end of the day. As students constantly view the values of the teachers, the students' moral perspective is being shaped in addition to how their moral perspective is shaped at home. In some cases, the moral perspective of some students may only be shaped at school, so teachers have that extra responsibility to ensure that what students are seeing is authentic and the correct type of moral perspective. Being trustworthy and showing how to trust is central to the relationship that teachers build with all the teachers' stakeholders.

Even though a teacher's authentic leadership style is built on a partnership (McMahon & Purdie, 2019), there needs to be self-reflection that builds one's authenticity, creating a strong and sustainable life (Barth & Tsemach, 2021; Fierro, 2019). The strong relationships or partnerships that teachers have with their stakeholders need to be built on a strong foundation of self-reflection, which needs to occur on a regular basis if not daily because relationships and partnerships are never static; they are constantly changing and need to be worked on and nurtured continually. Creativity and the ability to be innovative on the part of the students, teachers, staff members, parents, and community need to be supported and nurtured. This support and nurturing are also part of relationships and partnerships. Specifically, individual creativity, which highlights student strengths, is encouraged and supported (Chakravarthi & White-McNulty, 2020; Ribeiro et al., 2020). Authentic leadership used by teachers constantly needs to be adapted to effectively engage and lead students and colleagues (Adil & Kamal, 2020;

Boyle et al., 2018). Teachers who are authentic in leadership and show their true selves as teacher leaders can also find strength in being a spiritual leader.

Teacher as Spiritual Leader

According to Ghanbari and Soltangholi (2020), spiritual leadership and social capital improve engagement. Spiritual leadership significantly influences student learning quality and colleague development because teachers are getting at the heart of the matter. Spiritual leadership also influences the entire learning culture because it deals with the part of life that is truly meaningful (Bafadal et al., 2018; Budiarti et al., 2020; Çimen & Karadağ, 2019; Ghasemizad et al., 2012). Karadağ et al. (2020) stated that academic success increases as spiritual leadership and culture increase. Teachers are touching the hearts of the students, colleagues, staff members, parents, and community members in ways that can make everyone come alive and find meaning in the learning. Meaningful learning helps students, colleagues, staff members, parents, and the community understand the value of learning as a positive culture is created.

School culture is effectively supported by spiritual leadership, which grows the school culture (Karadağ, 2009; Ozgenel & Ankarahoglu, 2020). Teachers directly affect student achievement and student outcomes, and a spiritual calling supports the achievement of outcomes and gives meaning to organizational purposes (Aslan & Korkut, 2015; Nurabadi et al., 2021; Tsui et al., 2019). Giving meaning to the organizational purpose for the students, colleagues, staff members, parents, and community members can be successfully done by teachers who lead from a spiritual perspective.

Summary

Knowledge management is a system or process that helps companies and organizations manage all the data, information, and knowledge available to them. It is through a thorough understanding of the knowledge management system that organizations can process knowledge in the most efficient and effective way that can give them a competitive edge. Schools also are inundated with vast amounts of data, information, and knowledge daily. Learning how to process this data, information, and knowledge is a skill worth developing by the principal and other teacher leaders in each school to support staff and students in achieving their goals.

Fullan (2002) stated that schools do not process their knowledge well. What needs to be studied more is how principals and teachers can use the knowledge management practices to process, store, and share the knowledge that they acquire. Theoretically, to fill that gap in the literature, this study concentrated on how principals and teachers in this school division in a western Canadian province enhance their knowledge management practices. Practically, principals and teachers were given the opportunity to talk about and share with one another how they process and manage their knowledge.

A day full of new data, information, and knowledge is inevitable as it comes from many different sources. When data become information and eventually knowledge, this knowledge is categorized in three different ways. Tacit knowledge is understood knowledge. Implicit knowledge is applied knowledge. Explicit knowledge is documented knowledge. Knowledge creation, sharing, transferring, application, and storage are five aspects of knowledge management. For a culture to exist that is forward-looking, vibrant, exciting, nurturing, and progressive, it must be driven by effective leadership. The leadership needs to be supportive and demanding in some respects. It is principal and teacher leadership that is approached in various

ways according to what is best needed at any given time, whether the leadership is transactional, transformational, authentic, or spiritual.

CHAPTER THREE: METHODS

Overview

The purpose of this multiple holistic case study was to understand how principals and teachers in a school division in a western Canadian province enhance their knowledge management practices. Chapter Three addresses the qualitative nature of the study as well as the research design. The central research question and three sub-questions guide the focus of the study. The setting, participants, and my positionality are addressed, including the interpretive framework, philosophical assumptions, and my role. This is followed by the procedures, permissions, recruitment plan, the data collection plan, and the data synthesis. The chapter ends with a look at trustworthiness which includes credibility, transferability, dependability, confirmability, and ethical considerations. The chapter concludes with the chapter summary.

Research Design

The purpose of this multiple holistic case study was to understand how principals and teachers in a school division in a western Canadian province enhance their knowledge management practices. This study was qualitative as it studied the experiences of principals and teachers regarding how they enhance their knowledge management practices. Qualitative research studies people's experiences, internal feelings, and how meaning to these experiences is formed (Corbin & Strauss, 2008; Creswell & Poth, 2018; Naderifar et al., 2017; Thirsk & Clark, 2017). The benefit of qualitative research is that it is adaptable, moldable, and allows for more penetrating questions that may lead to other questions (Corbin & Strauss, 2008). Qualitative research originated in the areas of sociology, psychology, and anthropology in the early 1900s when there was value in looking more deeply into people's experiences (Bailey, 2014). Lazarsfeld (1935) realized that qualitative research had value as motivational research with

experts who could interpret people's experiences by asking "why" questions. Merton and Kendall (1946) saw value in bringing people together to share their experiences as a group. Creating new ideas and using data for problem solving was the next focus (Schlackman, 1968). In the 1980s, more people were doing qualitative research as having a psychology degree was seen as no longer necessary to do qualitative research (Bailey, 2014). From the 1990s to the present day, qualitative research has expanded greatly with in-depth interviews, focus group techniques, more rigorous procedures and interpretations, and the availability of qualitative research textbooks (Bailey, 2014).

The research design for this study was a case study as this design gave me the opportunity for up close, in-depth, and detailed conversations with the participants (Creswell & Poth, 2018). According to Flyvbjerg (2011), case study research as a method for strategic exploration "has been around as long as recorded history" (p. 302). Case study research came to America in the early 20th century (Tellis, 1997). Anthropology, psychology, history, and sociology were the areas of research that used the case study method in its infancy stage (Merriam, 1998; Simons, 2009; A. Stewart, 2014). Case study research was done through observations, reconstruction, and analysis (Hamel et al., 1993). Case study research was highly criticized because it was thought to be too generalized (Tellis, 1997). Hamel et al. (1993) stated that case study research declined as researchers were more interested in quantitative methods until the 1960s when they realized that quantitative methods were limited and that there could be more information gathered through case study research and so there was a resurgence. Merriam and Grenier (2019) talked about how case study research is approached with an intensive integrated system that focuses on an investigation of the study.

This study was a multiple holistic case study to understand how principals and teachers enhance their knowledge management practices. It was a multiple case study because it involved multiple participants from different sites (Yin, 2018). It was holistic because it involved a single unit of analysis (Yin, 2018). According to Yin (2018), studying participants from multiple sites will strengthen current findings and make these current findings more robust. Each principal and teacher was considered a separate case. How principals and teachers understand and enhance their knowledge management practices was the phenomenon that was studied. The central research question and the subsequent sub-questions were descriptive in nature and centered around the principals' and teachers' experiences dealing with the people, process, and technologies involved in knowledge management practices. The “what, why, when, and how” interview and journal prompt questions addressed the principals' and teachers' experiences.

Research Questions

The central research question guided the study. The sub-questions supported the central research question. Each sub-question focused on one of the three aspects of knowledge management.

Central Research Question

How do principals and teachers in a school division in a western Canadian province enhance their knowledge management practices?

Sub-Question One

How do principals and teachers in a school division in a western Canadian province enhance their tacit knowledge (understood knowledge) practices?

Sub-Question Two

How do principals and teachers in a school division in a western Canadian province

enhance their implicit knowledge (applied knowledge) practices?

Sub-Question Three

How do principals and teachers in a school division in a western Canadian province enhance their explicit knowledge (documented knowledge) practices?

Setting and Participants

Setting

Participants were invited from one school division consisting of more than 5,000 students from kindergarten to Grade 12. There were employees on a full-time, part-time, contract, and substitute basis that included teachers, principals and vice-principals, educational assistants, bus drivers, caretakers, clerical staff, library staff, maintenance, and student service personnel led by a board of education. The school division proclaims to be committed to the shared values of accountability, respect, cooperation, lifelong learning, and leadership and strives to be innovative and forward-thinking. The rationale behind the selection of this site was the richness of the learning opportunities which included a personalized learning approach. The schools in this school division have a student population that ranges from 20 to 1,666 students. There is pre-kindergarten through Grade 12 schools, elementary schools, a middle school, high schools, an online school, and Hutterite colony schools. The senior leadership consisted of a Director/CEO of Education and a Superintendent of Business. This school division has superintendents of curriculum and assessments, human resources, instructional technology, and student support services. There are additional division office support staff for mental wellness, student support consultants, and engagement coaches. There is an executive administrative assistant, administrative assistants, business department, facility, transportation, and information technology, communication, and marketing employees. At the school-based level there are

principals, vice-principals, student support teachers, educational assistants, coordinators, administrative assistants, and caretakers. This school division was chosen because of their approach to knowledge management and the vast array of different learning environments.

Principals and teachers were chosen based on their years of experience and the size of their schools using purposive and snowball sampling methods. To produce an effective learning environment for all stakeholders, having different principals and teachers share their different experiences with knowledge management may provide insight into other aspects of knowledge management practices. The principals' and teachers' perspectives on their knowledge management practice skills adds to the literature that already exists. To ensure the confidentiality of the schools, pseudonyms were used.

Participants

The participants in this study were principals and teachers. Principal and teacher participants chosen had 3 or more years of experience as a principal or teacher and reported feeling moderately comfortable to very comfortable in sharing their knowledge management practices. Participants' age, gender, ethnicity, type of degree, years in education, length in particular role as a principal or teacher, and type of school in which they worked were the criteria by which participants was chosen. Research involving participants from multiple perspectives is important and adds to the richness of the data collected (Creswell & Poth, 2018). A screening survey was sent to each potential participant to create the participant pool. Six principals and six teachers participated in the study (Creswell & Poth, 2018). In addition to pseudonyms being used for the schools, pseudonyms were used for the participants to ensure confidentiality.

Researcher Positionality

I have been a school-based administrator for more than 23 of my 38 years in education.

As a principal, I am a pragmatist who leads and manages to become more efficient and effective at managing all the information and collective knowledge that we create and gather as a staff. I am always looking for efficiency not only as I plan for the year, the month, and the week, but also in the daily work that we do as school staff. Information comes at us with lightning speed, not only digitally but also in print. Working together as a school staff, we strive to make sense of how to use information to create our knowledge base. As a school-based administrator, I must work to create and maintain a successful knowledge management system that will help us reach our school improvement goals.

As a pragmatist, my focus and strength come from my baptismal commitment to my Catholic Christian faith. Jesus commissioned all of us to make disciples of all nations in the name of the Father, Son, and the Holy Spirit (*New International Bible [NIV]*, 1978/2011, Matthew 28:19). Jesus also told us that He will be with us until the end of time (*NIV*, 1978/2011, Matthew 28:20). As a former Catholic principal, that was my mandate. I also find solace in making decisions based on what I am to do as a Catholic Christian. St. Paul in his first letter to the Corinthians, Chapter 14, concluded his instructions to the people of Corinth with how to use the spiritual gifts that he started to tell them about in Chapter 12. St. Paul encouraged the Corinthians to pursue love as a foundation to be strong when using the spiritual gifts which are prophecy, serving, teaching, exhortation, giving, leadership, and mercy, which he also shared with the Romans (*NIV*, 1978/2011, Romans 12: 6–8). With the Corinthians, he emphasized the gift of prophecy, which is a foretelling of what is to come. The last statement St. Paul made to the Corinthians was, “But everything should be done in a fitting and orderly way” (*NIV*, 1978/2011, 1 Corinthians 14: 40).

I humbly submit that I use the scriptures to help me with my leadership as a principal and

teacher. I am always looking for ways to be a better principal and teacher. To me, doing everything in a fitting and orderly fashion helps me to know what to do and how to do it in the most efficient and effective way. “Everything must be done in an orderly and peaceful way, reflecting God’s orderly character. And only that which holds up the church should be included, even if some people must keep the expression of their spiritual gifts to themselves” (BibleRef, n.d., para. 8).

Interpretive Framework

I used a pragmatic approach to the research. A pragmatic case study method “is designed to create research that is both practitioner-friendly, rigorous, and systematic” (Fishman, 2013, p. 412). I studied the personal and social choices of principals and teachers in their understanding of knowledge management practices. I was able to discover distinct features and commonalities through a careful examination of the realities that principals and teachers face when trying to use knowledge management practices.

Philosophical Assumptions

I conducted this research from an ontological and epistemological perspective. I also conducted this research from an axiological perspective. I was very mindful that I minimized bias as much as possible.

Ontological Assumption

Ontology is a philosophical approach that looks at the objectiveness of reality that is independent of human perception (Bahari, 2010). I used an ontological approach because I looked at the nature of the reality that principals and teachers face. Ontological approaches “relate to the nature of reality and its characteristics. When researchers conduct qualitative research, they are embracing the idea of multiple realities” (Creswell & Poth, 2018, p. 19).

Principals and teachers face multiple realities every day both inside and outside of the classrooms. Speaking to and listening to the realities that are faced by principals and teachers when dealing with new knowledge, how to use it, and how to retain builds on the realities that exist for all principals and teachers.

Epistemological Assumption

Epistemology deals with the nature, origin, and limits of human knowledge, and researchers try to get as close to the participants as possible to understand their reality (Bahari, 2010). Epistemologically, I looked at the “research from the lens of the nature of knowledge which helps us to know and learn about our social realities” (Creswell & Poth, 2018, p. 20). Principals and teachers are learning every day as to what works and what does not work when working with students, their parents, and with each other. They may need to create a different learning reality for each student in their charge, which means they need to find innovative ways to help each student learn (Doz & Doz, 2021; Madigan & Curran, 2021; Yang et al., 2016). What works for one student one day may not work for that student the next day (Perez et al., 2017; Santyasa et al., 2021; Sawyer & McLean-Davies, 2021; Yang et al., 2016). Knowing about the latest approach or program that assists students in learning is essential for principals and teachers to embrace, learn about, and utilize (Doz & Doz, 2021; Madigan & Curran, 2021). Learning is constantly changing, and keeping up with learning innovations will support students as they learn and grow (Broaders et al., 2007; Capin et al., 2021; Cerni et al., 2014; Coppieters, 2005; Fowlin & Cennamo, 2017; Hibbi et al., 2020).

Axiological Assumption

Axiological assumptions deal with the theory of ethics, value, or goodness (Mertens, 2016). My experience as a school-based administrator has made me very aware of the academic

expectations of students, parents, the school division, and the community. Trying to find the best solution to help students improve their academic performance was always a goal that we set at the beginning of each school year. I chose this research study because I am interested in understanding how knowledge management practices are used in schools. The individual interview questions, document analysis, and journal prompts were created out of my desire to become more informed in the hopes that the findings of my research may support other principals and teachers in using knowledge management practices.

I was very aware of how I may bias the individual interviews by how I asked the questions and reacted to the participants' answers. I worked to stay neutral and non-expressive during the individual interviews and only shared with the participants what I thought after the interviews were over and they asked me for my thoughts. I really did not know if the participants that I interviewed had any knowledge of knowledge management practices as it has been a part of the business world longer than it has been part of the educational world (Beijerse, 1999; Bhatti et al., 2011; Dalkir, 2005; Davidova & Kokina, 2018; Farias et al., 2016; Fullan, 2002). I was curious to discover and understand if principals and teachers were using the knowledge management approach. I was very careful not to ask the questions in such a way as to influence the participants' responses, therefore leading them to a response that I thought I would like to gather.

Researcher's Role

According to Lincoln and Guba (1985), I needed to be a skillful gleaner and interpreter of data. I sought to collect and analyze the data with rigor, competence, and with minimal bias. I approached the individual interviews with as minimal bias as possible as I used a purposive, snowball sampling procedure. I was very aware of how I might react to the questions that I asked

so as not to influence the participant(s). I was also aware of any bias I brought to the individual interviews because of my years as a principal. I realized that bias could occur if I knew the participants prior to the research (Corbin & Strauss, 2008). I noted my thoughts, feelings, frustrations, and triumphs in a reflexive journal (see Appendix B for the Reflexive Journal).

I was the human instrument that conducted this case study research. I chose the case study research method as it gave me the opportunity to have deeper conversations about knowledge management practices and how they are used in schools. Lincoln and Guba (1985) stated that the human being as a research instrument has a unique role in gathering data. According to Lincoln and Guba, people can construct and bring understanding and meaning to research through their ability to be sensitive, flexible, and responsive. It was from an ontological, epistemological, axiological, and a pragmatic point of view that I did this research, and I was very aware that I must minimize bias as much as possible. This guided my research, and I approached it with the guidance of the Lord. Creswell (2013) instructed researchers to rely heavily on the participants' quotes to delve deeply into the meaning. Direct quotes are "a basic source of raw data in qualitative inquiry, revealing respondents' depth of emotion, the ways they have organized their world, their thoughts about what is happening, their experiences, and their basic perceptions" (Patton, 2002, p. 21). A critical component of my data analysis was the quotes from the participants. Yin (2018) advised case study researchers to ask good questions, be adaptive, listen intentionally, have a high standard of research integrity, and develop a data collection protocol which will help guide the research. I was also very aware of the bias I could bring to the collection and analysis of the data as I am very aware of how knowledge management practices work in the school division. I looked forward to conducting the research and learning from the principals and teachers.

Procedures

The procedures for the study involved the permissions to conduct the study and how the participants were recruited. The procedures also indicated how the data were collected and analyzed. How the data were synthesized was also addressed.

Permissions

Prior to seeking Institutional Review Board (IRB) approval (see Appendix A for the IRB Letter of Approval), I sought the guidance of researchers with terminal degrees and asked them to examine the interview questions and the journal prompt questions to give constructive feedback on the feasibility of the research questions. The Director of Education in this school division in this western Canadian province was contacted via email to secure permission to approach the required number of principals and teachers, and he responded with a letter of permission. I also asked the Director of Education in this school division to provide the names of principals and teachers who could be contacted initially about the research, hoping that they would participate and also provide the names of other principals and teachers who could be contacted to participate in the study.

I started to collect data once IRB approval was granted. I gathered data through individual interviews, document analysis, and journal prompt questions. The individual interviews were recorded through Video over Internet Protocol (VoIP) and a digital audio recorder.

Recruitment Plan

The sample pool of this research study consisted of principals and teachers in this school division in this western Canadian province (Ministry of Education Saskatchewan, 2021). Yin (2018) does not state how many participants are needed for a case study. Patton advised,

There are no rules for sample size in qualitative inquiry. Sample size depends on what you want to know, the purpose of the inquiry, what's at stake, what will be useful, what will have credibility, and what can be done with available time and resources. (p. 244)

Researchers indicated that the sample size should be between five to 30 participants (Baxter & Jack, 2008; Dworkin, 2012). The initial plan was to have a sample size of 12 to 15 principals and teachers. Lincoln and Guba (1985) proposed that information redundancy should determine your sample size when no new information is collected. The final sample size can be determined when no new information is collected so data analysis will happen as the data are collected. Data collection began as principal and teacher participants were selected based on the selection criteria. There was to be a further search for more participants until at least 12 participants were interviewed or there is no new data collected. Six principals and six teachers participated in the study.

The type of sample was purposive and snowball. Purposive sampling was the approach used and the sampling procedure was snowball sampling. Purposive sampling is sampling in which I recruited participants who were knowledgeable about or very experienced with the phenomenon of interest (Bernard, 2002; Creswell & Plano Clark, 2011; Lewis & Shephard, 2006; Palinkas et al., 2015; Tongco, 2007). Palys (2008) stated that purposive sampling is the “strategic choices about whom, where, and how one does research” (p. 697). Palys said, “There is no best sampling strategy because which is best will depend on the context in which researchers are working and the nature of their research objectives” (p. 697). What I needed to consider was the availability and the willingness of the participants and their ability to communicate and share opinions in an articulate and reflective manner (Spradley, 1979). In combination with purposive sampling technique, the snowball sampling technique was also

employed. Snowball sampling is the selection of participants based on networking (Noy, 2008; Polit-O'Hara & Beck, 2021). I started with contacting participants using purposive sampling and then asked the first participant to suggest other participants who may be knowledgeable in research (Etikan et al., 2016; Parker & Scott, 2019; Patton, 2002). Etikan et al. (2016) said that snowball sampling is “not uncontrolled [because] the researcher is deeply involved in developing and managing the origination and progress of the sample ... [keeping] the referrals within limitations that are relevant to the study” (p. 1). Snowball sampling is finished when the “target size or saturation point is reached” (Parker & Scott, 2019, p. 3). There are three types of snowball sampling. Linear snowball sampling is where one participant refers another person, that person refers another person, and so on. Exponential non-discriminative snowball sampling is where one participant refers multiple possible participants. Exponential discriminative snowball sampling is where one participant suggests multiple possible participants but only one participant is recruited, depending on the nature of the study (Etikan et al., 2016; QuestionPro, 2021). The research started with the linear snowball sampling approach.

There are advantages and disadvantages to snowball sampling. The advantages are it is a quicker way to solicit participants, it can be cost effective, and it can encourage hesitant participants as they were referred to by another person (QuestionPro, 2021). The disadvantage is that this type of sampling can be considered biased (Etikan et al., 2016; Galdas, 2017; Parker & Scott, 2019) and I could be faced with a lack of cooperation on the part of potential participants (QuestionPro, 2021). I solicited participants with administrative and teaching experience that ranges from 1 year to 25 years, various ethnic backgrounds, and various genders (Patton, 2002).

A recruitment letter explaining the study and a screening survey were sent to prospective participants (see Appendix C for the Recruitment Letter; see Appendix D for the Principal

Screening Survey and Appendix E for the Teacher Screening Survey). An acceptance email (participants well suited for the study) or a rejection email (principals not well suited for the study) was sent to all potential participants (see Appendix F for the Acceptance or Rejection Email). At this point, the participant pool was created. With the acceptance email, the appropriate consent form was sent (see Appendix G for the Consent Form). The participants were invited to send documents that would show knowledge management. These documents were not limited to meeting minutes/agendas, notes, PowerPoint presentations, and anything else that would show their knowledge management style, processes, or procedures.

The individual interviews were conducted in person or through VoIP. Data were gathered using two Sony Digital Voice Recorders for face-to-face interviews. For VoIP interviews, the primary recording device was Microsoft Teams. As a backup, the Sony Digital Voice Recorders were used. The individual interviews were transcribed by me to dive into the data immediately (Yin, 2018). The transcribed interviews were sent to the appropriate participants for the purpose of member checking to ensure accuracy of the interview (Creswell & Poth, 2018). The data were analyzed as soon as member checking was complete, so the experience was fresh in my mind (Yin, 2018), and then the findings were put into a report.

Data Collection Plan

Triangulation of the data occurred through the individual interviews, the document analysis, and the journal prompt reflections. Triangulation involved using different sources of evidence to validate the findings (Creswell & Poth, 2018). Validity to the findings occurred with triangulation which included comparing the data (Schwandt, 2007). It was important to collect data from different vantage points.

The individual interviews provided the participants' perceptions of knowledge management and how they processed it. The document analysis provided reference materials for me. The journal prompt responses by the principal and teacher participants provided additional information on how knowledge management practices were embraced and processed. Data were first collected through individual interviews and then through document analysis. Journal prompts were the third means of data collection after the individual interviews and the document analysis as they gave the participants time to think about how they have used or might use knowledge management to enhance the knowledge management practices they already use.

“Knowledge management builds upon a human-centered approach that views organizations as complex systems that spring from the unique organizational contexts in which they develop” (Petrides & Nodine, 2003, p. 10). People, processes, and technologies are the three core organizational resources that can be used in knowledge management (Petrides & Nodine, 2003). According to Petrides and Nodine (2003) people manage knowledge, knowledge management practices lead to decision-making, and technologies support the effectiveness of the organization.

Individual Interviews

A conversational tone was used when conducting the individual semi-structured or open-ended interviews to help the participants feel comfortable (Patton, 2002). Semi-structured or open-ended interviews “consist of several key questions that help to define the areas that are to be explored, but also allows the interviewer and the interviewee to diverge in order to pursue an idea or response in more detail” (Gill et al., 2008, p. 291). “Each interviewee gets asked the same questions—the same stimuli—in the same way and the same order, including standard probes” (Patton, 2002, p. 344). The participants' responses did take the interview into a new direction

after the initial questions which explored experiences, views, and beliefs (Aborisade, 2013; Gill et al., 2008; Owen, 2014). “A well-planned interview approach can provide a rich set of data” (Qu & Dumay, 2011, p. 237). The length of the interview was no longer than 1 hour.

The individual interviews were conducted either in person or through VoIP at the convenience of the participant. The individual interviews took place in the location of the participants’ choice within 100 kilometers of my home. If within 100 kilometers of my home was not practical for the participant, it was suggested that the interview occur via VoIP with a digital recording device as a second recording instrument. Two recording devices were used for the individual interviews. The following questions asked the participants to reflect on how they understand and processes knowledge management practices. The questions were the same for principals and teachers, which presented them with the same opportunity to consider their responses (Patton, 2002; Saldaña, 2016; Yin, 2018; see Appendix H for the Individual Interview Questions for Principals and Appendix I for the Individual Interview Questions for Teachers). After the first individual interview of a principal and a teacher, both participants were asked for feedback regarding the interview questions, and if needed, adjustments were made to the questions or the interviewing process.

Individual Interview Questions for Principals

1. Tell me about your position, educational background, years in education, years in administration, area of academic expertise, and anything else that you would like to share with me about your school such as your culture and climate. (Central Research Question [CRQ])
2. How user-friendly is your IT infrastructure? (Sub-Question 3 [SQ3])

3. How do you support teachers when new knowledge is made available to your school?
SQ2
4. How do you improve knowledge transfer in your school? SQ1 & SQ2
5. How do you and your staff search for innovative ways to acquire and retain knowledge? SQ1 & SQ2
6. How is knowledge and information transferred within your school? SQ2 & SQ3
7. What is the attitude of your teachers when there is an expectation to apply new knowledge and put it into practice? SQ3
8. What do you do to encourage teachers to use their personal skills and competencies to use knowledge management? SQ1
9. How do you encourage knowledge-sharing and retention? SQ2

Individual Interview Questions for Teachers

1. Tell me about your position, educational background, years in education, years in a teacher leadership position, area of academic expertise, and anything else that you would like to share with me about your school such as your culture and climate. CRQ
2. How user-friendly is your IT infrastructure? SQ3
3. How do you support each other when new knowledge is made available to your school? SQ2
4. How do you improve knowledge transfer in your school? SQ1 & SQ2
5. How do you and your staff search for innovative ways to acquire and retain knowledge? SQ1 & SQ2
6. How is knowledge and information transferred within your school? SQ2 & SQ3

7. What is the attitude of your fellow teachers when there is an expectation to apply new knowledge and put it into practice? SQ3
8. What do you do to encourage each other to use your personal skills and competencies to use knowledge management? SQ1
9. How do you encourage knowledge-sharing and retention? SQ2

Question 1 gave me demographic information. The demographic information included, but was not limited to, the participant's educational background, years in education, years in administration or teacher leadership, area of academic expertise, and anything else that the participant wanted to share. This helped me to understand the environment in which the participant works (Hutton, 2013). This addressed the CRQ.

Question 2 dealt with technology, infrastructure, storage, and maintenance, which is the proper utilization of technology for managing knowledge. Proper utilization of technology for managing knowledge is essential for storage purposes. Easy access to this stored knowledge supported the knowledge being used by all the stakeholders. What schools decide to use as their technology and infrastructure will be different for each member of staff. Maintaining this knowledge base is important so knowledge does not become outdated, and retrieval is not hampered by any technological difficulties. Technology is one of the components of knowledge management (Davenport & Prusak, 1998) and a discussion with the participants about how they store their knowledge was the point of SQ3.

Question 3 dealt with leadership which includes support, encouragement, and involvement. SQ2 dealt with implicit knowledge that was discussed and decided as the action to be taken to improve the acquisition of new knowledge and the retainment of current knowledge.

According to Davenport and Prusak (1998), people and how they process knowledge management is central to knowledge management.

Question 4 dealt with knowledge creation, which is the school's way of developing new and useful ideas and solutions (Zabolotniaia & Cheng, 2020). This is also a continuous and dynamic interaction between tacit and explicit knowledge which happens through socialization (Desouza et al., 2006; Nonaka & Takeuchi, 1995). Tacit and implicit knowledge are the foundations of new knowledge creation through the understanding and applying the knowledge to see the value of the knowledge (Davenport & Prusak, 1998). SQ1 and SQ2 addressed the desire to create new knowledge for the school.

Question 5 dealt with acquisition and learning. Knowledge acquisition might be intentional when it is searched or unintentional when it is simply noticed. Much of the knowledge brought to any situation is something that was acquired through lived experiences and observations (Polanyi, 1958). Once this knowledge through lived experiences and observations is discussed in a social setting, it can become applied such as implicit knowledge if those discussing it deem it is valuable knowledge (Nonaka & Takeuchi, 1995). Question 5 supported SQ1 and SQ2.

Question 6 dealt with dissemination and transfer. This is the interaction between people, techniques, and technology for the purpose of transferring knowledge from one place to another (Bhatti et al., 2011). Knowledge management is very much a social activity according to Nonaka and Takeuchi (1995). It is internalized and then externalized through social interactions. Once externalization occurs, knowledge is transferred to the next person and together it may be stored if it is considered valuable knowledge (Davenport & Prusak, 1998). SQ2 and SQ3 were addressed by Question 6.

Question 7 dealt with application and exploitation. This is making knowledge more active and relevant for the school that is creating the knowledge (Bhatti et al., 2011). Application of knowledge can take place after the discussion phase (implicit) but most often it takes place at the documented stage (explicit) because it is knowledge that has been stored and can be accessed when it is needed (Davenport & Prusak, 1998). SQ3 was supported with this interview question.

Question 8 dealt with how people use their personal skills and competencies to work with knowledge management. The question also dealt with personnel selection, development, support, responsibility management, and self-management. The purpose of the study and the CRQ was to ask principals and teachers how they enhanced their knowledge management practices. This is done by staff members who have a similar vision, mission, and goals (Nonaka & Takeuchi, 1995). Their responses also supported SQ1.

Question 9 dealt with building a school culture for knowledge-sharing. The interview question asked the participants their thoughts on how to share knowledge. Their responses created a wealth of ideas based on their experiences. SQ1 and the CRQ were supported by their responses.

Individual Interview Data Analysis Plan

According to Yin (2018), case study data analysis is one of the most challenging types of analysis to do because it is not easily defined. Data analysis started during the actual collecting of the data. Data analysis also continued with the transcribing of the individual interviews. Yin stated that while data are being collected, it is important to ensure that what is being collected is authentic and real. Each participant was considered an individual case.

A detailed description of the data collected was created by the actual data analysis. The data was analyzed on a per case base and a cross-case synthesis took place. Cross-case synthesis

examined the similarities and the differences between the individual cases (Cruzes et al., 2015). Determining codes was the first step to analyzing the data. A code is “a word or short phrase that symbolically assigns a summative, salient, essence-capturing, and/or evocative attribute for a portion of language-based or visual data” (Saldaña, 2016, p. 3). Yin (2018) suggested that the data be examined several times to create a pattern of coding. Circling, highlighting, and underlining single words or paragraphs was the first cycle of coding (Saldaña, 2016). “Longer passages of text, analytic memos about the data, and even a reconfiguration of the codes themselves” (Saldaña, 2013, p. 3) was the second cycle of coding. The third, fourth, and fifth cycle of coding dug deeper in the data (Saldaña, 2016). The next part of data analysis was putting the codes into categories. According to Saldaña (2016), similarities will start to emerge through categorizing. Categorizing occurred several times and led into sub-categories. From the categories, themes developed, which Saldaña (2013) described as “notable patterns” (p. 21).

Document Analysis

Meeting minutes, Professional Development (PD) notes, and school improvement plans are some of the documents that I asked the participants to provide. PD notes are documents obtained from conferences, workshops, and webinars that provide participants with information that they may or may not find useful in their work. Documents “are situated products produced in social settings and are always to be regarded as collective products” (Owen, 2014, p. 10). Documents need to be “examined and interpreted in order to elicit meaning, gain understanding and develop empirical knowledge” (Bowen, 2009, p. 27). Documents are to be used in combination with other methods of data collection for the purpose of triangulation (Bowen, 2009; Owen, 2014). Comparing and contrasting the various documents demonstrated the types of knowledge that were explicit knowledge, which is an important aspect of document analysis

(Schwandt, 2007). More interviews and journal prompt questions were used after the document analysis. Meeting minutes demonstrated how knowledge management practices evolved in their schools. PD notes showed a more granular level of how knowledge management is processed. School improvement plans showed a sequence of events that have affected or still affect their knowledge management process.

Document Analysis Data Analysis Plan

The plan to analyze the documents was similar to the individual interviews analysis. A careful examination of the documents included a first glance through the documents as they were submitted. This was followed by searching through the documents to put statements into codes, categories, sub-categories, and then themes. Once all the documents were put into codes, categories, sub-categories, and then themes, a cross-case synthesis took place. There was several coding, categorizing, sub-categorizing, and theming cycles before the heart of the responses emerged. Saldaña's (2016) procedures to code, categorize, sub-categorize, and theme were followed in this study.

Journal Prompts

The following journal prompts were the same for the principals and the teachers. The purpose of giving the principals and teachers the same journal prompts was to see how they responded to each from the different position that they held within the school. It was interesting to see the similarities and the differences that existed between the two groups. Because the participants had ample time to reflect on these questions, it was anticipated that the responses would be deeper with a more complex nature (See Appendix J for the Journal Prompt Questions for the Principals and Appendix K for the Journal Prompt Questions for the Teachers).

Journal Prompt Questions for Principals

1. What are your concerns about the implementation of knowledge management procedures? SQ1
2. What issues do you think are important to consider when using knowledge management to acquire and retain knowledge in your school? SQ2
3. How do you think your parents would react when you share the knowledge management strategy to acquire and retain knowledge? SQ2
4. How would you implement knowledge management with your parent advisory group? SQ2

Journal Prompt Questions for Teachers

1. What are your concerns about the implementation of knowledge management procedures? SQ1
2. What issues do you think are important to consider when using knowledge management to acquire and retain knowledge in your school? SQ2
3. How do you think your parents would react when you share the knowledge management strategy to acquire and retain knowledge? SQ2
4. How would you implement knowledge management with your parent advisory group? SQ2

Journal Prompt Questions 1–4 gave the principals and teachers an opportunity to talk about their thoughts and feelings about knowledge management and what they may or may not know about it or how they may enhance it. These types of questions address SQ1 regarding their experiences or perceived experiences of knowledge management. They may or may not be aware of knowledge management and have no understanding of it. They may be responding strictly

from a tacit point of view based on what they have heard about knowledge management and may have inadvertently experienced it. Parents and the parent advisory group play a key role in this school division in Western Canada and that was the significance of asking principals and teachers how parents and the parent advisory group would respond or react to questions about knowledge management.

Journal Prompt Questions Analysis Plan

The analysis plan for the journal prompt questions was similar to the analysis plan for the individual interview questions and the document analysis. The responses from each participant were analyzed for codes, categories, sub-categories, and themes. The cycle of coding, categorizing, sub-categorizing, and theming occurred several times before there was a clear picture of the essence of the responses.

Data Synthesis

The data from the individual interviews, the documents, and the journal prompts are displayed in the appendices, including the themes, categories, sub-categories, and codes (see Appendix L for Goal Attainment Theme—Effectiveness; Appendix M for Goal Attainment Theme—Efficiency; Appendix N for Connection Theme—Relationships; Appendix O for Connection Theme—Involvement; Appendix P for Connection Theme—Engagement). From the interviews, journal prompts, and documents, words and phrases (as the codes) were written out and grouped several times to create the sub-categories. The sub-categories were grouped to create the categories. The categories determined the themes. Miles et al. (2014) stated, “Formats can be as varied as the imagination of the analyst” (p. 109).

Rival explanations were considered in the data collection phase as well as the data analysis phase. If rival explanations had appeared, a new dimension would have been added to

the data analysis (Patton, 2002); however, rival explanations did not appear. Pattern matching occurred in the data synthesis. Pattern matching is comparing two patterns to determine if they match or are the same in the sequence of the data (Huk & Dul, 2009).

Yin (2018) stated that case study data analysis does not follow any form of reporting. Yin stated that being as creative as possible in the structure of the findings allows the readers to decide for themselves the richness of the research findings. Once data analysis was complete, the next step was to move beyond the raw accounts of data into the explanation discovery stage of the raw data. The lens through which the data were examined is related to the theory of formal concept analysis and rough set theory in data analysis (Yao, 2004). The theory of formal concept analysis is how the concepts relate or intersect. The rough set theory in data analysis is how concepts do not relate or intersect. Tables and charts were created to provide the audience with an opportunity to draw their own conclusions on the data collected: “When you include displays in a final report, the reader can re-create your intellectual journey with some confidence” (Miles et al., 2014, p. 108).

Trustworthiness

To evaluate its worthiness, trustworthiness in research is critical to support any future research on the same topic (Lincoln & Guba, 1985). Galdas (2017) stated, “Qualitative researchers generally agree that considering concepts such as rigor and trustworthiness are more pertinent to the reflexive, subjective nature of qualitative research” (p. 1). “Trustworthiness is the extent to which the findings are an authentic reflection of the personal or lived experiences of the phenomenon under investigation” (Curtain & Fossey, 2007, p. 88). The trustworthiness of research results depends on precise details of the sampling method, the participants’ descriptions, and the data analysis (Elo et al., 2015).

Gunawan (2015) stated, “A study is trustworthy if and only if the reader of the research report judges it to be so based on credibility, dependability, transferability and confirmability” (p. 10). Credibility, transferability, dependability, and confirmability of the data help establish the trustworthiness of this research study. Internal validation established credibility. External validity endorsed transferability. Reliability was verified through dependability. Objectivity was established through confirmability.

Credibility

I ensured that the participants in the collection, analysis, and findings were represented accurately so that credibility could be established (Schwandt, 2007). Credibility was proven through member checking and peer debriefing. Member checking had participants review their raw data and then the final analysis. According to Schwandt (2007), member checking ensures that participants’ views are accurately represented. It is also a courtesy to the participants to share with them what was gleaned from the interviews. It can also be viewed as one more opportunity to gather information. During data collection and analysis, having a trusted colleague be a sounding board is helpful in following procedures and focus. I worked with a colleague who has just completed her terminal degree. Having someone unrelated to this research examine the findings act as a peer debriefer supported the credibility of this research (Schwandt, 2007).

Transferability

Rich and thick descriptions of the research methods will guarantee transferability (Schwandt, 2007). This study can be easily replicated through the description of the setting, participants, and the procedures. Transferability is strong when the study can be easily replicated through a very thorough description of the setting, participants, and procedures (Creswell, 2013).

An audit trail (see Appendix Q for the Audit Trail) was created to ensure the rigor of the research.

Dependability

An external audit helped with the dependability of the study. Data were examined more than once and then both analyses were compared to check to see if the process was reasonable, observable, and verifiable (Langtree et al., 2019). The external auditors were the dissertation committee and the Qualitative Research Director of Liberty University. The consistency of the results was validated through this method. Creswell (2013) suggested that having an external auditor look at the interpretation of the findings of the data and conclusions drawn from the interpretations of the findings of the data is important to the dependability of the study.

Triangulation (individual interviews, document analysis, and journal prompts) was used to make certain that the findings were consistent (Yin, 2018). Literal replication supported the triangulation of the data. Theoretical replication with triangulation occurred by contrasting the data collected.

Confirmability

Confirmability is established when the research has minimized researcher bias, motivation, and interest so as not to influence the responses of the participants and the data analysis (Schwandt, 2007). In this study, I took great care to be neutral in my interactions with the participants and made a very careful analysis of the data. The confirmability audit that took place is a very mindful approach to minimize my bias. Triangulation provides an opportunity to confirm the findings through a very careful and thoughtful cross-case synthesis of the data (Creswell, 2013). According to Creswell (2013), triangulation is using multiple and different methods, sources, and theories to show substantiating confirmation of the data collected. An

audit trail was used to ensure the trustworthiness of the research. Through reflexivity, I provided careful self-examinations of the procedures and analysis.

Ethical Considerations

Because the research involves humans, Creswell (2013) outlined the following ethical considerations. Permission was granted from the Director of Education in this school division to approach principals and teachers prior to the submission of the IRB application. Prior to any research occurring, there was IRB approval. Principal and teacher participation occurred through telephone calls, emails, and consent forms and only occurred after IRB approval was granted. Participation was strictly volunteer. It was explained that withdrawal from the research could occur at any time and that any data collected up to that point in the individual interviews and journal prompts would not be used and would be deleted electronically and/or through paper shredding. This was explained to the participants prior to their consent to participate. Data will be kept in a locked file cabinet or a password-protected electronic file for a period of 3 years and then destroyed by paper shredding or electronic deletion. For the purpose of understanding conflict of interest, there was an acknowledgement of any preexisting relationship with any of the participants. Potential sensitivities of the participants were considered. Pseudonyms were used for all participants and school divisions. I was guided by honesty and integrity. The findings are for a “targeted audience” (Creswell & Poth, 2018, p. 230), which includes the participants, the director of education, principals, and teacher leaders.

Summary

Chapter Three created a context in which the research, data collection, and data analysis were based. The study was qualitative. The research design for this study was a multiple holistic case study. The research question and sub-questions involved an exploration of how principals

and teachers in this school division in a western Canadian province enhanced their knowledge management practices. Participants were chosen from 41 schools in this school division in a western Canadian province. Once research permission was granted by the IRB, six principal participants and six teacher participants were chosen using purposive and snowball sampling. I acted as a human instrument, keeping in mind potential biases and assumptions that could affect the data collection and data analysis. The data collection included individual interviews, document analysis, and journal prompts. Data analysis incorporated the development of display boards to collect and understand the responses to the research question and sub-questions through numerous cycles of coding, categorizing, sub-categorizing, and theming. Credibility, transferability, dependability, and confirmability established the trustworthiness of the research. The highest level of respect and confidentiality through the securing of the data and the confidentiality of the participants was the foundation of ethical considerations.

CHAPTER FOUR: FINDINGS

Overview

The purpose of this multiple holistic case study was to understand how principals and teachers in a school division in a western Canadian province enhance their use knowledge management practices. This chapter presents a participant description, the results of the study, and the research question responses. This chapter concludes with a summary.

Participants

Using a purposive snowball participant recruiting method, the Director of Education in this school division in western Canada was asked to suggest potential participants and did so willingly. I strategically contacted the potential participants in September of the school year knowing full well that September is a very busy time of the year in schools and that participants might not be readily forthcoming. I let the potential participants know that they would be contacted again in October once the school year was well underway. I wanted the participants to at least be thinking about the possibility of participating as each was suggested by the Director of Education. One participant responded immediately in September and the first of the 12 data collections began. The first interview went very well and beyond the suggested time frame as the participant was very passionate about their thoughts on knowledge management and how they used it in their classroom. Several potential participants asked to be contacted again in October, which I did. Most of the data collections did occur in October with the last two participants willingly participating in November.

The participants spoke highly of the school division in which they worked in terms of knowledge management practices. What they offered in this research study was how to enhance the knowledge management practices that already existed in their school division through their

responses, remarks, comments, thoughts, hopes, passions, and reflections. The following paragraph highlights what already existed in their school division regarding their knowledge management practices.

The participants liked the IT infrastructure and how user-friendly it is. They expect it to evolve as new technologies become available, and the participants seemed to understand and accept that. Even when new knowledge to move learning forward is made available to them, the principals spoke of supporting the teachers and the teachers spoke of supporting each other. It was very apparent that they were open to being innovative and creative and that brought a sense of excitement. The participants spoke of how knowledge and information was transferred in their schools and how challenging that can be sometimes. The participants also identified the challenges that they and colleagues faced when there was the expectation that new knowledge was to be applied and put into practice. It was evident that they supported each other when managing established knowledge management practices and when new knowledge was made readily available to them. The participants made a point of identifying the importance of supporting colleagues' personal skill sets and competencies regarding knowledge management. To the participants, a positive school culture and climate were the foundation of knowledge sharing and retention. What the participants provided in this study were their thoughts and experiences on how to enhance the aspects of their experiences of the knowledge management practices in their school division.

The participants shared their concerns regarding how best to implement knowledge management. The participants also identified important considerations when using knowledge management to acquire and retain knowledge. How to involve parents and parent groups in the schools' knowledge management practices was also identified. The participants shared common

and unique types of folders and files they created to have information and knowledge ready to be used.

The gap in the literature that this study filled was the experiences of these 12 participants in a school division in a western Canadian province and how they would enhance their knowledge management practices. It provided a voice for them. I got the sense that the participants did feel successful with their knowledge management skills and wanted to be better at it, and that is what they shared.

The following is a very brief explanation of each participant and their experience in their schools. The participants were from elementary and high school settings. The participants varied greatly in their experiences but shared similar traits of educators and administrators who have a vested interest in and a love for what they do.

Table 1

Teacher Participants

| Teacher Participant | Gender | Highest Degree Earned | Years in Education |
|---------------------|--------|-----------------------|--------------------|
| Leon | Male | Masters | 26+ |
| Robin | Female | Bachelors | 26+ |
| Neil | Male | Masters | 26+ |
| Daphne | Female | Bachelors | 26+ |
| Susan | Female | Bachelors | 11–15 |
| Wanda | Female | Bachelors | 1–5 |

Leon has been an educator for 26 plus years and enjoys working at the high school level. He has had many different types of educational experiences throughout his career, which was spent mostly in a rural community. The rural community that he is presently in is supportive and

friendly; he described the school in a similar manner: “It is quite a friendly atmosphere we have amongst the staff where we collaborate very well. People really pull together in community projects and things like that.”

Robin also spoke highly of the rural community in which she works. Robin described the climate of her school as very positive and welcoming. In her school, the parent support is “excellent and the School Community Council is positive and engaged.” Robin said that her school has a very active student leadership team as well as a full roster of extracurricular sports teams and clubs. According to Robin, “Students and teachers take pride and share responsibility in taking care of the physical environment of our school. We also look for any opportunity to have our students participate in and support community activities.”

Neil said that his school community generally has a positive culture. His colleagues have a high degree of skill, purpose, and commitment. Neil also stated that the “administration is friendly and supportive.” However, he did note that there can be tension over teacher workload.

Daphne highlighted support of the parents in her community and called them “very caring.” She also mentioned that the students had not had the greatest last few years and were getting a little disillusioned with learning. Through hard work and building relationships with the students, they have become happy and that makes the staff happy.

Susan reported a very cohesive staff in her school even though they have differing philosophies. She shared that they have students who are “kind and caring” and that the staff is very proud of the students. Their climate is happy, the staff “care immensely about the students,” and the students treat their teachers with kindness and respect.

Wanda reported that the climate at her school is one of positivity even as each year brings new “tweaks.” The teachers work to support each other even as frustrations may arise due to

changes in technology and processes. Wanda believes that the frustration arises when communication is not as “clear as it might be” or it takes “too long to give out that information” needed by the staff.

Table 2

Principal Participants

| Principal Participant | Gender | Highest Degree Earned | Years in Principalship |
|-----------------------|--------|-----------------------|------------------------|
| Ellen | Male | Masters | 1–5 |
| Anita | Female | Masters | 6–10 |
| Ned | Male | Bachelors | 1–5 |
| Angela | Female | Bachelors | 26+ |
| Hazel | Female | Masters | 21–25 |
| Nancy | Female | Masters | 1–5 |

Ellen described her community as warm, welcoming, friendly, supportive, and inclusive. She reported that everyone is willing to try new ideas. They are also open to finding ways to incorporate their new ideas strategically. Her staff feel “they can take risks and be supported.”

Anita works in a small community with families who are generally friendly. The community became somewhat divided through the COVID pandemic but that is starting to heal. The community is made up of “farm and ranch kids who are hard workers” and who enjoy athletics.

Ned said that his staff is one of collaboration and knowledge sharing. His teachers work in subject teams in “a process-driven environment” where they feel safe coming to work. He

stated that they appreciate the open honest communication that is supported in their school. The climate at their school is welcoming.

Angela has a very good climate at her school. It is one of constant communication and collaboration. The students are happy, and the parents are “very supportive.” Angela shares her leadership duties with the teachers who complement each other very well. She reported that “the kids are happy” and the teachers are happy.

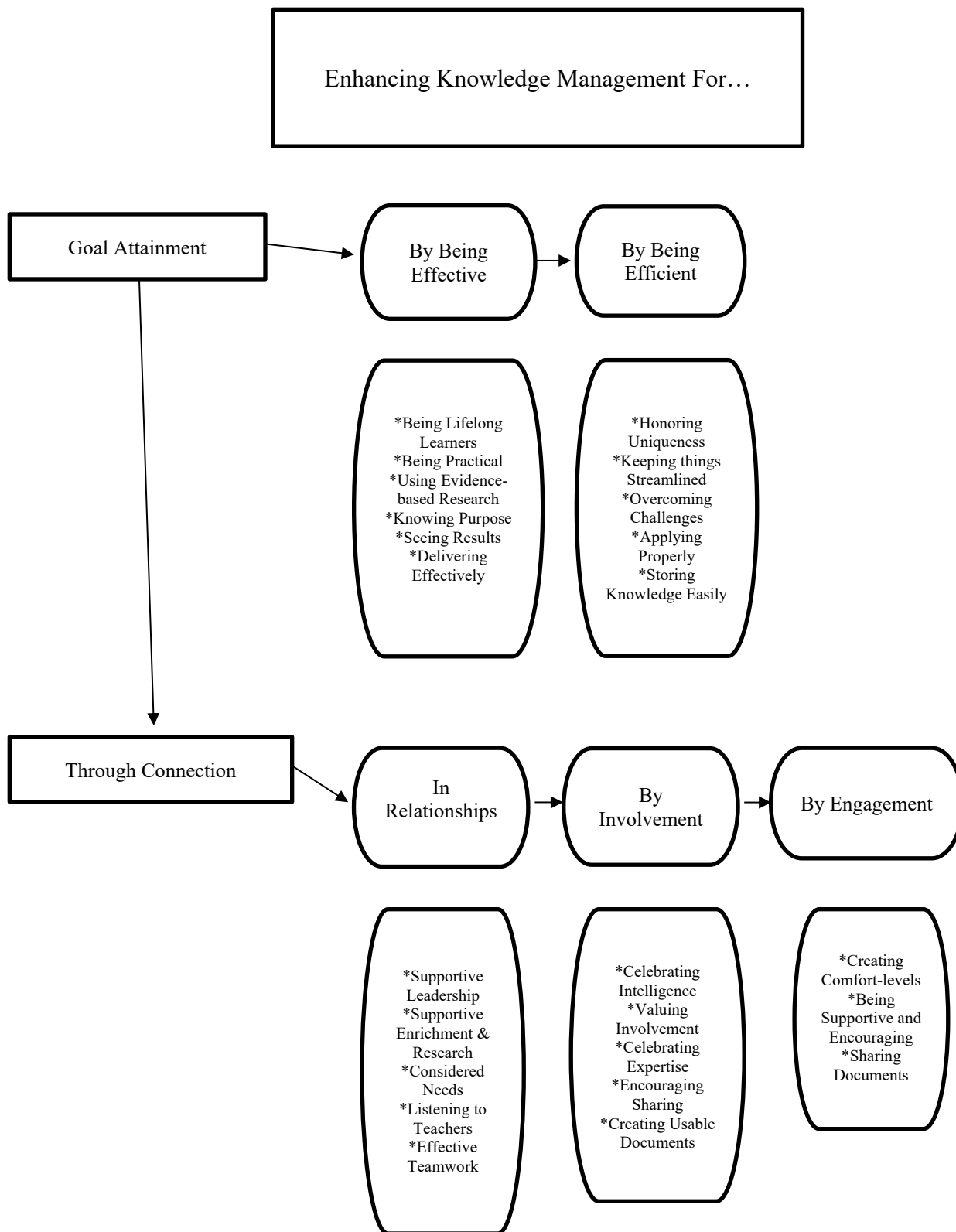
Hazel works in a very collaborative, happy culture and climate. She gives the teachers autonomy to be what they need to be for their students, the parents, and each other. Hazel celebrates and supports the various strengths of her staff including the secretary and the caretaker as they support and work with their students. Everyone in her school has a “part to play in the lives of the students.” The students and parents are happy with what is going on.

Results

After numerous rounds of data analysis, the two very distinct themes of goal attainment and connection became evident regarding how principals and teachers in a school division in a western Canadian province use knowledge management (see Figure 1). In speaking with the participants and then reading their journal prompt reflections, there was excitement regarding how they managed the knowledge; they felt good about it and were very willing to share their ideas. There were smiles and laughter in the discussions. There was also a small but healthy concern of not knowing what the next expectation might be regarding the knowledge that would come their way and if the participants would be able to handle it. The knowledge that was being managed was how to use the current and new pedagogies, curriculum, grading system, technologies, attendance system as well as professional expectations and responsibilities.

Figure 1

Themes, Categories, Sub-Categories



The theme of goal attainment had two categories (effectiveness and efficiency) supported by several sub-categories. The theme of connection had three categories (relationships, involvement, and engagement) and several sub-categories. The themes, categories, and sub-categories were determined by the various codes that were used in the data analysis based on the interviews, journal prompts, and documents provided by the participants.

Goal Attainment

All the participants spoke of using knowledge and knowledge management practices to attain the goal of learning. The participants' shared thoughts fall into either the category of effectiveness or efficiency. Neil remarked, "As a staff, I suppose our department goal drives a certain amount of collaborative searching for knowledge, although the individual plans supporting that goal tend to be individual efforts."

Effectiveness

With the vast amount of information to which the participants have access, the participants spoke of their need for it to be the type of information that would move learning forward. They did not want the information for the sake of having more information and knowledge. They mentioned that they deal with many ideas every day and they only want the information that would move learning forward. To avoid wading through too much information, the participants also agreed that they were not offended by being reminded about what information was important. Nancy said,

I find that repetition of expectations and initiatives gets the group to feel comfortable in the language and serves as a reminder of what our goals are with respect to knowledge sharing from the division level down to the students and their families or our community.

The participants identified several ways their school division could be more effective in managing their knowledge. Being lifelong learners and being encouraged to be lifelong learners was mentioned by a few participants. Lifelong learning was one trait that the participants were trying to instill in their students, so to the participants, modeling was important. Indirectly, with lifelong learning, the participants were teaching their students the concept and importance of knowledge management. Nancy commented,

I model a thirst for knowledge and consistently use language surrounding growth mindset, as well as frequently referring to myself or others as lifelong learners. I learn new methodology or pedagogy and then transfer that knowledge to my staff once I confidently have the skill in place myself.

Effective knowledge management practices also included being practical in what will work and how it will work when it came to how to move learning forward. According to Angela, as “long as the division makes decisions at the higher level to decide what we really need to know, to work with and come up with ways to share it with us that are time-savers, I think that’s the key.” Introducing a concept for the sake of just introducing a concept to a few of the participants was not practical. Anita remarked, “Every school is different, and what works for one school doesn’t necessarily work for another. For example, documents that I create for my small staff may not work for a larger staff.” The participants shared that they always strive to implement any concepts that would apply and help students to learn better.

Regarding practicality, a few participants stressed that they appreciated and wanted evidence-based research that supported what they are trying to do in and out of the classroom with the students and fellow colleagues. Susan stressed that it is critical the knowledge sought is “evidence-based instead of following the latest fad of purchasing something that looks effective

or has an appealing cover.” Susan also said, “We need to be much more critical as consumers seeking new information and resources.”. A practical purpose that was evidence-based would help the participants to see tangible results that would move the learning forward in the attainment of the goals that were set for the students. Wanda summed up practical purpose and results by stating the following.

1. We need to start with the purpose: Why do we need knowledge management?
2. Then go to expectations: What kind of information is being managed and why?
3. If there is a framework we are going for (like a structured email), walk through how to set it up, while also emphasizing how it can potentially be personalized (and if it can).
4. Check in afterwards and go over expectations again as a refresher (not necessarily because people are not doing it, but it is best not to assume everyone knows).

The participants wanted the delivery of knowledge for themselves and their students to be effective. The participants voiced concerns that expectations regarding delivery of knowledge management needed to be clear. Procedures and processes needed to be clear as well. Participants also indicated that they wanted to know the location of the information, where it was housed, and in how many locations. Being strategic so the information is easy to acquire, retain, and find was important too. The participants said that the more places knowledge and information are housed, the easier it is to be missed or lost.

Efficiency

The participants spoke about the massive amount of information that comes their way on a daily, weekly, monthly, and yearly basis. They understood that new information and

knowledge are necessary. The participants kept a positive approach but posed the question on how to process all the information without it becoming overwhelming, while keeping it applicable to what they need to do to move learning forward. Leon said, “If it is the case that this will make more work and less efficient or make things in our school less educational, then it would be negatively received.”

Effectiveness for the participants meant that whatever they had to do was done efficiently. To the participants, effective goal attainment needed to be efficient. To the participants, efficiency needed to be supported by honoring the uniqueness of each principal and teacher in terms of how they would be most efficient. The participants wanted the administrators and colleagues to honor uniqueness and not judge how anyone would manage the knowledge with which they were working. Neil stated, “Teachers often volunteer to lead a new initiative or tackle it on their own and share that expertise with others in quick information discussions.”

Besides uniqueness being honored, participants wanted processes to be streamlined and appreciated the streamlining to come from the senior administrators who expected new knowledge and old knowledge to be managed. Some of the participants shared that they were not a fan of change just for the sake of change unless it was streamlined. Streamlining to the participants was knowing exactly what needed to be done, how it needed to be done, where it needed to be done, and why it needed to be done. When new information and knowledge was expected to be used, the participants said that they knew exactly who in the division office they could contact for help in working with any new program or information. To the participants, that was a part of streamlining.

The participants realized that new and old knowledge and how it was managed does come with challenges. The participants remarked that there is so much information and

knowledge a “keystroke away.” The challenge is turning the information into knowledge that can be used. Looking for the best practices for learning is also a challenge. Daphne remarked, “I’m working with programs I have never seen before, and it takes time to understand how to work with it.” A few of the participants expressed that concern as well. Robin talked about the challenges that parents face with new information and knowledge:

I think parents are also bombarded with information. Report cards are an excellent example of this. Our report cards are FULL of all the outcomes, etc. [information] and yet hold very little meaning and knowledge for parents about their child. The comments and conferences provide the knowledge that parents find the most meaningful. I think that parents want to know that teachers know their child as a learner and an individual [knowledge] and the information that we gather to inform our teaching is secondary.

Regarding these challenges, the participants wanted five things from senior administration and colleagues. The participants wanted acknowledgement of the challenges. They wanted an understanding of these challenges. They wanted to be supported through these challenges. They wanted adequate time to work through the challenges. They wanted to eliminate challenges that no longer posed any opportunities for growth.

What the participants also wanted was time to grasp how to apply opportunities and work through challenges so changes could be made properly. Ned remarked, “We feel confident and just need the time to make things work.” The participants felt certain that they have what they need to work with the information and to turn it into knowledge; they just need the time to apply it properly. Once opportunities were applied and challenges overcome that became the knowledge the school division would use, the participants wanted to ensure that the knowledge would be stored efficiently for future use not only for present principals and teachers but also for

future principals and teachers. A few of the participants shared that although it is understandable that there are many places to store knowledge, it can be difficult to remember where everything is stored. It was stated that an easier way to find stored information and knowledge would be greatly appreciated.

Connection

The other theme that appeared was connection. The participants repeatedly stated the importance of working together to achieve their desired goals. Susan said, “We’re also pretty aware of one another’s profiles as well, which helps us know how to encourage one another.” Susan also said, “We know which shoulders to tap when we are working together on a project of some sort—this person is better at notetaking, this one at formatting, and streamlining a plan, etc.”

It became evident early in the data collection that the participants relied on, welcomed, and desired connection with each other. The participants spoke highly of their colleagues and that support was extremely important not only to survive but to thrive in and out of the classroom. The participants wanted to pass on the love of learning to their students, which was important to them. The participants spoke of the supportive climate and cultures that existed within their school (principal and teachers) and the school division (the principals’ team).

Connection to the participants involved healthy relationships, involvement, and engagement.

Relationships

The first important aspect of connection was to establish a working relationship with one another. This was very evident in the conversations with the participants. Robin said, “This requires trust between individuals, and is contingent on positive relationships.” Relationships to the participants meant supportive leadership and not just from the principals and the senior

administration. Supportive leadership involved everyone including teachers, secretaries, caretakers, parents, and the community at large. Nancy designates time at staff meetings for personal and professional growth. Nancy also mentioned new learning opportunities for the teachers and educational assistants. Angela makes certain that new information is passed along in an efficient way as to always keep the teachers “in the loop.” Ned ensures that there are “frequent check-ins” with everyone on staff. Ellen likes to “co-teach and model and implement alongside rather than just demanding” the use of new knowledge. Hazel likes to send out the new knowledge and information, let the staff view it on their own time, discuss it at a staff meeting, and then talk with individuals to give them private time to ask questions they might feel best to ask in private. Leon shared that there is “a lot of networking that goes on in his school and people are not afraid to reach out to one another.” Robin said, “even though her tech skills are limited,” when she does need help, it is “provided in a timely and efficient manner.” Neil shared, “If there is perceived value in the expectation, teachers often respond with enthusiasm and provide good teacher leadership.”

A couple of the participants talked of the leadership that was and is expected of the students at the schools. These participants felt the students would best put their learning to good use if they could lead and support other students in understanding how to make learning practical to their daily life now and not just after their graduation. Students are given opportunities to be a part of the school division’s student leadership team to provide direction and leadership opportunities for other students.

The participants spoke of the supportive enrichment in the form of professional development that was made available to them locally, nationally, and globally. Leon spoke about the importance of remembering the “human factor when considering knowledge management

strategies” and that opportunities need to be provided at the personal level to ensure everyone is getting what they need. The participants also highlighted the encouragement and support that they received to do personal research in the areas they were passionate about and they wanted that to continue. Neil shared,

For me, I work mostly independently learning new things to solve problems I see. I research, tinker, and create. Sometimes if I think it’s valuable enough for others to see as well, I invite them to see, steal, or collaborate. As a staff I suppose our goal drives a certain amount of collaborative searching for knowledge, although the individual plans supporting that goal tend to be individual efforts.

Their needs being considered was also a part of how relationships can be healthy in the schools and in the school division. The participants wanted their voices to be heard and feelings to be acknowledged when successes were experienced and challenges were faced. Considering their needs also included listening to teachers not only at certain times of the year but frequently such as hourly, daily, weekly, and monthly. Robin shared that they needed time to refine and implement the information and knowledge they had been given. Robin then remarked that there needed to be commitment on “behalf of the school division to slow the onslaught of information down. Start providing new teachers with in-service and direction in setting up solid programs and what those best practice pieces are BEFORE bombarding with all the possible information.” A few of the participants also shared that introducing new knowledge and information should occur in small steps, should be focused, and should be linked to students rather than just being something new and innovative. The one theme that repeatedly presented itself among the participants was the question “why” as in why is this new “knowledge” important and “how” will this new knowledge make learning better.

Listening to teachers at any given moment was important for the participants to voice. The participants realized that they were valued by the school division, the principals, the students, and the parents. Hazel said that she learned that listening to the teachers was essential to having a happy and positive climate and culture. Hazel said, "I learned very early in my career as a principal that if I looked behind me and no one was there, I wasn't a very good leader." That told Hazel that her leadership meant she had to listen very carefully to the teachers she supported. Hazel also remarked, "The longer I was a principal I began to realize my leadership was better if I 'walked' beside the teachers so I could really listen to what they were telling me about workload, new things, students, etc."

The most important aspect of the relationship aspect of connection was effective teamwork. All the participants in some way expressed that they felt very much a part of an effective team. What was shared by all participants was that they felt accepted and their contributions to the work they were doing together were appreciated and valued. It is teamwork that provided safety to be bold and daring with new learning ideas, acknowledgement of successes and challenges, and support to be innovative and creative. Ned commented, "Our climate here is one of collaboration and knowledge-sharing. We have a welcoming climate where teachers feel safe coming to work." Ellen remarked that their team is "supportive and inclusive. Everyone tries on the same ideas and finds ways to incorporate the strategies that work best for them as they feel like they can take a risk and be supported."

Involvement

The second important aspect of connection was involvement. The principals and teachers stressed the need for everyone to be involved and to help one another get the knowledge, understand it, and work with it. Daphne said,

I worry that sharing information with staff will be second hand when it gets to them and maybe the intent that I share isn't what was meant by the source. I worry that I won't share things thoroughly enough so that the receiver understands the importance of the message. I worry that pieces of the knowledge will be missing when I pass on the information, or that I don't understand it well enough to be sharing or teaching it to someone else.

To the participants, involvement in connection meant to celebrate with each other a type of intelligence that showcased a person's ability to tacitly approach any situation. Leon talked about compartmentalizing knowledge as his way to process information and knowledge for himself and his colleagues. Compartmentalizing to Leon was taking what he learned and deciding how to present it and when to not overwhelm colleagues. Leon stated, "When it comes to knowledge management and new educational practices, we would share different types of information in different ways. I would maybe share what I learned at a meeting, where I thought other people might benefit from what I have learned." Other participants talked about sharing what they learned from PD or from their own personal research when the time was right with the right colleague.

Involvement to the participants meant being valued for what is said and done for the good of learning and the good of all stakeholders. All the participants in their own way described the importance of being valued for what they were doing. The participants also said that they did feel valued and would appreciate a sense of being valued, especially when new information or knowledge or a new way of doing things was introduced. Ellen reflected on showing value by saying, "When people feel like they matter and what they are doing is important, it seems like the learning happens and takes place in ways that the learning is fun and then retained."

Besides celebrating intelligence and being valued, a celebration of expertise was also important to the participants. The participants spoke often about deferring to the expertise in their building. Neil remarked, “Our staff has a high degree of skill, purpose, and commitment, and we benefit from that. Everyone is willing to share their expertise.”

All the participants spoke of the significance of encouraged sharing as a key ingredient of good involvement. All the participants spoke of their schools having a positive climate and culture that was supportive and encouraged sharing. Susan reflected,

I often find, at our school, that there are a few key people I can always count on to be excited about the things that I am excited about and that we will work together and encourage each other to implement the change. We share all of our resources and ideas with one another if someone asks of them. Most of us don't feel any sense of ownership over what we have created and want to make life easier as we all know how much work goes into teaching!

A few of the participants specifically talked about how colleagues were willing to volunteer their time to lead a new initiative or share in leading a new initiative.

And finally, creating usable documents by all principals and teachers was important to the participants in the preservation and management of the knowledge that was the foundation of their learning and goal attainment. Even though it took time to create usable documents, the participants stressed the importance of taking the time to do that. The participants also appreciated the school division providing them with usable documents that could just be filed in folders. Hazel commented, “It is best to get the maximum result out of the minimum effort.”

Engagement

The third important aspect of connection was engagement. According to Nancy, engagement is a willingness to work together with each other to reach an end goal: “We are very close and tight knit in a family manner.” Engagement to the participants meant three things. The first was the importance of creating such an atmosphere that everyone was able to function optimally at their own comfort level. Anita said that the expectation to use what is handed to them from the school division is “for the most part fine if the time is put in ahead of the expectation to use it and support is there.” The participants said that if the expectation to use knowledge is shared in the right context and the right way, the knowledge is used. The right context is presenting it with enough time to understand it and process it before it is expected to be used. The right way is to present it with ideas on how to implement it. Some of the participants saw the comfort level of the newer teachers to the profession a little differently. Their concern lay in how the newer teachers can become overwhelmed with the amount of knowledge and information available to them. It was thought that there should be a way to spend time with the newer teachers to show them how to process the knowledge and information that comes their way such as in-services throughout the year and a one-day “How to Survive” before the school year begins.

The second characteristic of engagement was being supported and encouraged. Neil commented, “I don’t think we have overt acts of encouragement, but we do respond to those who do learn something and are willing to share it with us.” The participants also said that they are very aware of the strengths that their coworkers have and so they know when to be supportive and encouraging. They mentioned that support and encouragement come naturally when working so closely together.

Thirdly, engagement also meant sharing documents and ideas on how to share documents with each other. The participants repeatedly talked about sharing documents with each other in OneDrive and through Microsoft Teams. The participants remarked several times that group access to documents in OneDrive and Microsoft Teams promotes engagement as they can see what has been added, changed, and deleted. What they do appreciate is knowing when these changes do take place. Wanda remarked, “The documents we have access to are great and very useful. I just wish we were notified when something was different such as additions or changes.”

Research Question Responses

Central Research Question

How do principals and teachers in a school division in a western Canadian province enhance their knowledge management practices? Two themes emerged. The first theme was goal attainment. The participants talked about using knowledge management to move learning forward through effectiveness and efficiency. The second theme indicated that goal attainment could be possible because of the connection that they had with each other and all stakeholders. Connection was accomplished by establishing relationships with one another, participatory involvement, and active engagement. Ellen said,

We share the knowledge. We have three places that everyone can access information from, and it is also posted. So, to solidify the transfer of knowledge, we share as a collective the ways in which the information is being lived out loud in our building or in another that is having success.

Sub-Question One

How do principals and teachers in a school division in a western Canadian province enhance their tacit knowledge (understood knowledge) practices? Understood knowledge is a

type of personal expertise. The participants talked about a personal understanding of lifelong learning, the school community uniqueness, and the importance of shared leadership. The participants also emphasized the significance of personal enrichment, the value of considering the needs of all stakeholders (especially the teachers), and a sense of intelligence. Seeing the value of knowledge management and the comfort level at which people would deal with knowledge management also needed to be considered. Hazel said, “Intelligence is the ability to sense or just know what is needed and then apply it in a way that creates growth for everyone.” Nancy said,

I encourage teachers individually and/or in a group setting to impart enthusiasm towards a new initiative. I actively express that I think they are highly competent professionals who will have no issues with grasping the new knowledge, embracing it, and then passing it to others.

Sub-Question Two

How do principals and teachers in a school division in a western Canadian province enhance their implicit knowledge (applied knowledge) practices? Applied knowledge is taking what one has learned through experience or by listening to others’ experiences and putting it into practice. The participants had numerous thoughts about how to deal with implicit knowledge. The participants emphasized that knowledge management needed to be practical, evidence-based, have a purpose, show results, and be strategically implemented and streamlined. The participants said there would be challenges in the implementation and application of knowledge management but that could be dealt with as people listened, shared, worked together as a team, and accessed the expertise in the building. According to the participants, this could all be accomplished through mutual support. Susan said,

I encourage pursuing new information but always remind others to make sure we are following evidence based [resources]. This is critical to seek evidence-based instead of purchasing something that looks effective or has an appealing cover; we need to be much more critical as consumers seeking new information or resources.

Sub-Question Three

How do principals and teachers in a school division in a western Canadian province enhance their explicit knowledge (documented knowledge) practices? Documented knowledge is knowledge that is stored for future reference. Knowledge management could be achieved through document creation, sharing these documents, and storage of these documents. Ongoing personal research and how that is shared and delivered to fellow educators was also an element of explicit knowledge. Anita shared 47 examples of different email folders such as Admin Leadership, Attendance, Facilities, Curriculum Information, PD, and School Events. Anita also shared examples of 45 document folders such as Budget, Counselor Caseloads, Discipline, Technology, Transportation, Letters, and Handbooks. These examples of folders were common among the principals. The teacher participants indicated they send yearly calendars, monthly calendars, monthly newsletters, weekly newsletters, keep various email folders, and maintain various document folders such as assessments, student work, PD notes, and lesson plans.

Summary

The 12 participants from a school division in a western Canadian province very clearly identified goal attainment and connections as the two aspects of how they enhance their knowledge management practices to move learning forward. Effectiveness and efficiency were identified as components of goal attainment, which was important in moving learning forward for and with their students. Building solid relationships with one another, being involved, and

engaged in the processes of knowledge management were the foundations of the connections that helped to attain the anticipated learning goals effectively and efficiently.

CHAPTER FIVE: CONCLUSION

Overview

The purpose of this multiple holistic case study was to understand how principals and teachers in a school division in a western Canadian province enhance their knowledge management practices. This chapter consists of five discussion subsections that refine the findings of the study and offers an interpretation before offering a conclusion to the study. The first subsection is an interpretation of the research findings. The second subsection is the implications for policy and practice. The third subsection addresses the theoretical, empirical, and practical implications. The fourth subsection focuses on the limitations and delimitations of the study. The fifth subsection proposes recommendations for future research.

Discussion

Interpretation of Findings

The two themes that emerged from this study regarding how principals and teachers in a western Canadian province enhance their knowledge management practices was goal attainment and connection. Andreeva and Kianto (2012) observed, “The management of knowledge makes a difference to a company’s bottom line” (p. 618). They also stated, “The relevance of knowledge and its effective and efficient management for organizational performance seems to be a widely accepted issue in most current management literature” (Andreeva & Kianto, 2012, p. 620). Likewise, Ritala et al. (2023) stated,

Firms need to constantly renew themselves to keep up with the pace of competition and proactively establish innovations to the markets. This requires capabilities in learning and renewing of the firm’s knowledge base, conceptualized as renewal capital of the firm.

(p. 1)

The first theme in this study was goal attainment. Hansen et al. (2000) indicated that capturing, storing, and reusing knowledge created a foundation on which goals could be attained. The second theme was connection. The participants talked about using the constant readily available knowledge to move the learning forward. The participants offered their insight that showed that they would use knowledge management to attain their goals through effectiveness and efficiency. The participants would accomplish goal attainment by the connection they could create with several stakeholders. The participants identified relationships, involvement, and engagement as important aspects of connection.

The Importance of Effectiveness in Goal Attainment

The participants were very willing to share their ideas. It was obvious that they had the goal of learning in mind and that even though they appreciated all the knowledge, information, and tools available to them, they were somewhat overwhelmed. When they felt overwhelmed, they worked to tame the amount of knowledge readily available to them to move the learning forward. Two participants remarked that if the amount of information and knowledge was overwhelming, they would default to the old way of completing tasks. Lifelong learning was the driver that assisted them in working through the various amounts and quality of knowledge that is available to the participants. The participants stated often that the knowledge that is to be used should be practical as well as evidence-based, providing results that could be implemented. Darroch (2005) said that “a firm that effectively manages knowledge will be more innovative” (p. 113). Being able to implement knowledge in the most effective way was crucial to the participants as they did not have any time to waste on anything that would slow them down as they had concepts to cover and experiences to be had. Holtshouse (1998) talked about knowledge management needing a constant flow of knowledge which facilitates a connection between

people looking for specific knowledge and those people who can provide that knowledge. The participants said that delivery of such knowledge had to be such that it flowed, and it was easy to obtain, share, and use. To Wang and Ahmed (2004), organizations should be able to use knowledge flow to foster and hasten the knowledge that is shared, which also includes the tools that promote good conversations about what knowledge will be effective. Schulz (2001) stated that knowledge flow creates the human element of know-how. The delivery was also to be done in such a way that it did not take more time than necessary as the participants felt that they did not have time to be weighed down by trying to decide what to use. If it took too much time to process the knowledge, there was a very good chance that they would not bother trying to work with the knowledge. Some participants spoke of falling into the old ways of doing things if the new ways and knowledge were too cumbersome. Managing the knowledge needed to be timely, not consume too much of their time, and be user-friendly to be effective as it was passed along. To the participants, working with knowledge had to be effective.

The Importance of Efficiency in Goal Attainment

Although the participants all highlighted very similar thoughts and ideas, they were still unique in their realities and their heartfelt desire for knowledge management to be done as efficiently as possible. Hansen et al. (2000) stated that efficiency in managing knowledge was key to being productive: “With the time when the world has become a global village many organizations, profit or non-profit, educational, or business are concerned with their organizational knowledge and its management within the organization to maximize efficiency and their ongoing operations” (p. 182). Wang and Ahmed (2004) stated that using knowledge management efficiently will improve the organization’s ability to learn new knowledge. It was evident that the participants enjoyed what they did inside and outside of the classroom, so they

said that working efficiently was very important. The participants did not want to be overwhelmed with the vast amounts of knowledge and information coming their way. Receiving streamlined knowledge and how to implement it was very important to all the participants. “A firm with knowledge management capabilities will use resources more efficiently and so will be more innovative and perform better” (Darroch, 2005, p. 101). The participants realized that there would be challenges in efficiency and in the application of the expected management of knowledge. When it came to managing the knowledge, the access that they have to their storage methods in general was very similar such as the types of email folders they created, the grading systems they were employing, and the communication methods they were using. However, they did have their own unique ways of organizing their stored knowledge to access it in the quickest way possible. Efficiency was on the minds of the participants because in their thinking, they have no time to be inefficient. The participants were unique in their efficiency tactics.

The Importance of Relationships in Connection

A theme that appeared often in what the participants shared was connection. Connecting with one another to process and manage knowledge was very evident. All the participants talked about the importance of supporting one another in managing the knowledge that they were expected to manage. Davenport et al. (1998) identified a knowledge-friendly culture as one of the important elements in knowledge management success. Being a part of a team whether large or small was very important to the participants. In listening to and reviewing the thoughts of the participants, it became evident very quickly that working with the vast amount of knowledge that they had to work with needed the support of leadership, both senior and school based. The participants trusted their leadership. In return, the participants appreciated that the leadership trusted the participants’ ability to process the deemed important knowledge in the way that

worked best for the participants. The participants felt the leadership considered their individual needs through the encouragement of personal enrichment. Listening to teachers and teamwork formed the foundation of building connections through nurturing and growing relationships. This was in support of best managing the newfound knowledge whether that be adjustments to existing knowledge or evolving in a new direction with new knowledge. Adding to existing knowledge might be an upgrade to the present grading system. Evolving in a new direction with new knowledge might be a brand new and improved marking system. The participants were encouraged to do their own personal research to build their knowledge base and to discover what types of knowledge management worked best for them. Not only did they have relationships with their colleagues, students, and parents but they also had an important relationship with themselves in the sense that they needed to know what works best for them.

The Importance of Involvement in Connection

The participants repeatedly talked about the importance of involvement on the part of everyone, although they did speak of the need to respect their colleagues' level of comfort when it came to knowledge sharing. Wang and Ahmed (2004) said that knowledge sharing creates a culture of trust. People on a staff or team have a relationship because they are a part of that group. How successful that relationship is will depend on how involved everyone is on that staff or team. Everyone brings wisdom and value to the team, and this is done in a tacit way. Everyone has their own personal expertise that they bring to the team. Implicitly each team member brings a level of expertise to the school in which they work, and it is this sharing that provides different levels of involvement. Explicitly, involvement can be created through weekly and monthly newsletters; yearly, monthly, weekly emails; task lists; student work; virtual meetings; and PowerPoint presentations. Popper and Lipshitz (1998) identified five values in a

learning culture that would support successful involvement: continuous learning, valid information, transparency, issue orientation, and accountability. The participants remarked that sharing ideas on how to share information and knowledge was an important part of involvement.

The Importance of Engagement in Connection

Involvement does not necessarily mean engagement. A person sitting in a meeting and listening but not saying anything can still be considered involved; they are just there; they are a part of a process; they are part of a group. When a person is engaged, they are absorbed in what they are doing; they are engrossed in what they are doing; they are very interested in what they are doing. To be engaged can conjure up a vulnerability of what is being said, decided upon, planned, and executed. There needs to be a comfort level that allows participants to trust that what they are trying to accomplish will be positive. Allameh and Abbas (2010) said that organizations that “value employees’ attitudes and opinions, [are] sensitive to information that changes, work in partnerships, [and] are flexible and optimistic” (p. 97) provide the opportunity for people to be engaged and grow. The person who is engaged wants to have the support needed to follow through on the knowledge management strategy in any number of ways. Sharing documents that are either personal or widely shared through Teams, OneDrive, OneNote, Excel, or SharePoint paves the way for people to be engaged to varying degrees. The participants highlighted the need for team members to be engaged to support the work that needs to be done.

Implications for Policy and Practice

The Ministries of Education work in partnership with the Boards of Education to set the direction of learning in the Canadian provinces. This partnership includes exploring the most current pedagogies and how these pedagogies may be implemented in the school divisions; this knowledge needs to be managed effectively. Provincial-wide professional development is

created to help all stakeholders in the school divisions to keep current on the latest learning developments for students. Knowledge management practices are a thread that exists between all levels of learning in the provinces such as the Boards of Education, the school divisions, and the schools. The Ministries of Education set policies that direct learning in the province. The Board of Education in each school division sets policies for their school division. It would be of benefit for these Boards of Education to hear the thoughts of the participants regarding how best to manage the knowledge and information that is available to school divisions so the Boards of Education can make better-informed decisions on policies. Boards of Education serve the senior administration, the school-based administrators, the teachers, and non-teaching staff, and ultimately the students and their parents. School-based administrators are the most powerful people in a school division because they affect change most readily. Teachers are the most important because they set the stage for student growth and development. In this case, importance trumps power. It is the expectation of the Boards of Education that policies from the Ministry of Education are implemented. These policies may be the latest research programs that will help with and support the learning and growth of the student. The goal of education varies within each province but ultimately the personal learning and growth of each student is the result.

Policies for knowledge management should find their grassroots in the provincial Ministries of Education. With the vast amount of research that is happening in education, both locally and globally regarding how students grow and learn and how best to support their growth and learning, the Ministries of Education should set policies for the most effective and efficient knowledge management practices. Next, the school division Boards of Education should set their own policies for the most effective and efficient knowledge management practices. Finally, the

principals and teachers in their schools need to set applications for the most effective and efficient knowledge management practices based on the Ministries of Education and the Boards of Education.

Implications for Practice

Data collected and analyzed should be used reasonably to serve a population, an organization, or a site. Attaining goals effectively and efficiently through authentic connection in relationships, involvement, and engagement needs to be considered carefully. The Ministries of Education, the school division Boards of Education, and the schools should set knowledge management practices. There can be theoretical, empirical, and practical implications.

Theoretical, Empirical, and Practical Implications

Theoretical Implications

Davenport and Prusak (1998) in their seminal research on knowledge management recognized four components important to knowledge management: people, strategy, process, and content. The participants talked about the importance of connection with people in being successful knowledge managers, which included the process of working with knowledge. Knowledge of the content and how it was managed was through the strategy of effectiveness and efficiency. How the participants accessed, generated, embedded, and transferred the knowledge formed the four sequential activities Davenport and Prusak (1998) identified as foundational to knowledge management. Davenport and Prusak also stated that data become usable information and knowledge when there is an exchange between the “sender” and the “receiver.” The participants talked about the group PD opportunities, the personal PD opportunities, and the encouragement of personal enrichment which was provided by and supported by the school

division as essential to the participants as they managed what knowledge would work best for them and for their students.

Bhatti et al. (2011) stated that gathering the data and processing the data into working knowledge give an organization a viable and novel edge. The participants shared that they are constantly understanding, processing, and turning the knowledge and information sent to them into something that is workable for their students in the pursuit of moving their learning forward. Processing the incoming data and/or knowledge occurs when data are shared.

Davenport and Prusak (1998) identified contextualization, categorization, calculation, correction, and condensation as components that give shared data a purpose and a significance. The participants indicated that they follow these same steps to give their data purpose and significance: They give their data purpose when they contextualize it. The participants dissect their information by categorizing it. They want evidence-based data and information to know that what they are attempting to do is worthy and strategic on their part. The participants correct any errors from the information or data by examining them, discussing them, debating them, and trying to decide if they work for them and are good for their students. The participants take all information and data that come their way and pull together what they need to do for this knowledge to be of use to them and their students. This is how they condensed their data, information, and knowledge.

Empirical Implications

The information the principals and teachers shared was their observations of others and their own experiences. What they shared may be common among all educators everywhere both locally and globally. Teachers and principals strive to help students grow and learn according to Aasebo et al. (2017). Katuscakova and Jaseckova (2019) talked about knowledge management

implementation as possibly one of the ways to deal with many of the challenges faced by organizations, including educational systems. The experiences and thoughts from these participants about how to manage the knowledge available to principals and teachers may add to the bank of knowledge management that already exists.

Decisions on how to deal with and manage knowledge were seen by Mulford et al. (2000, 2001) as collegial, cooperative, and consultative in seeking to make the learning environments more positive. The participants in this study were very positive regarding how working together, consulting, and cooperating with each other was crucial to successfully move learning forward, which was their goal. The participants shared that goal attainment in both effective and efficient ways was necessary to manage knowledge for learning growth.

Knowledge management practices are an ongoing experience. According to Fullan (2002), schools are very poor sharers of knowledge and the schools' knowledge management activities of principals and teachers are lacking (Dogan & Yigit, 2014). According to Dogan and Yigit (2014), knowledge management is important to promote organizational success. The participants realized that they need to find an effective and efficient way to manage the knowledge; they found it possible through the relationships that they have with each other, their involvement, and their engagement in their knowledge management practices. Coppieters (2005) stated that schools need to process knowledge in such a way that they can transfer knowledge within their learning organization. According to Coppieters, schools need to adopt change and change management processes to be successful. The participants appeared to realize that they need to find the most effective way to work with and transfer the knowledge they acquire to make their schools and the school division an efficient learning organization. The participants acknowledged knowledge management as ever changing and their need to adapt to changes in

knowledge management—what to discard and what to keep. Zabolotniaia and Cheng (2020) stated that how education approaches the learning process through innovative technology will assist these learning organizations and make knowledge management more sustainable. The participants stated numerous times how important it is for the knowledge that they manage to be workable and not overwhelming. The participants want knowledge management techniques to be user-friendly and practical.

Practical Implications

There are practical implications of being effective and efficient in obtaining goals. These obtained goals through effectiveness and efficiency can occur through connections. These connections manifest themselves in relationships, involvement, and engagement. These practical implications can be seen through the population studied (principals and teachers), the organization studied (organizational structure), and the site studied (the school division).

Population. The principal and teacher participants provided many practical applications to knowledge management. Hong and Rowell (2019) said that principals and teachers need to support each other in becoming proficient in working with information and turning it into knowledge that can be used and stored for future use (Chang et al., 2017; Hong & Rowell, 2019). Principals and teachers are responsible for setting and managing goals for their communities (Banjarnahor et al., 2018; Stein et al., 2016).

Using a case study method to examine how knowledge management is used within the population of principals and teachers in a school division in western Canada was valuable as it was a detailed investigation. The individual interviews provided the foundation on which a principal or teacher could probe into their knowledge management strategies. The journal prompt that followed the individual interview gave the participant time to reflect on the individual

interview and then expand on what they said. The documents provided by participants supported what the participants shared in their interviews and journal prompts. Principals and teachers may have a great deal of experience in dealing with knowledge and information and may be very willing to share what they know and what they experience. It would be interesting to see if using individual interviews, journal prompts, and document analysis with another group of principal and teacher participants from a single school division would achieve the same results.

Organizational Structures. The principal and teacher participants provided practical organizational structure. In a school setting the teacher–student relationship should be nurtured by the principal (Cherkowski, 2016). Ersozlu (2016) stated that principals as reflective practitioners need to empower the teachers to take the lead in working and nurturing their students’ growth (Arhipova et al., 2018; Munir & Khalil, 2016; Pollock, 2016).

This study supports the goals of pre-kindergarten to Grade 12 education in rural communities. The novel contribution that this study adds to the gap in the literature was that it is a group of principals and teachers in a rural school division in a western Canadian province who suggested ways to enhance their knowledge management practices. Through this study the scope of how knowledge management is utilized in education is expanded.

Organization can be how that group of people structure their experiences to be shared. A case study approach through individual interviews, journal prompts, and document analysis provides a solid triangulation to establish credibility and validity of the research findings. It would be interesting to see another group of principal and teacher participants from a single school division report on how they manage knowledge. Knowledge management practices in a school division in a western Canadian province support the attainment of goals through connecting with the teachers and the principals.

Site. The school division in which the participants worked provided insight into how they manage their knowledge and what they would suggest to enhance their knowledge management practices. Cheng (2013) identified management, teaching competencies, assessment for learning, student support, and general management as five areas in which teachers can improve knowledge management in schools. Shared vision, shared culture, data information, knowledge, and experience will help to develop more fully purpose, teaching, and learning (Cheng, 2013; Farias et al., 2016). The sharing and processing of knowledge within a school setting in a structural and routine way supports intellectual capital (Cheng & Lee, 2016).

Using a case study research method with one school division provided data from participants who shared a similar knowledge and information work experience. The principals and teachers receive the same knowledge and information from their senior administration, but they may process it very differently. This research study was the knowledge management experience of principals and teachers from the same school division receiving the same knowledge, information, processing expectations, and outcome expectations.

It would be interesting to see what the results would be in school divisions with similar demographics. It would be beneficial for further research into knowledge management practices by the Ministries of Education and school division Boards of Education by examining their populations, organizational structures, and their school sites to gather theoretical and empirical data using a case study method, which is an in-depth look at their realities. This would be beneficial for future planning of their policies and practices.

Limitations and Delimitations

The limitations lie in the narrow range of participants and their years of experience in education and the fact that all participants were from only one ethnic group (Caucasian). Most of

the teachers had 26 plus years of experience, leaving the less experienced teachers underrepresented in this study (see Table 1). The teachers' years of experience in education were not balanced. The years of principalship experience were better balanced, although a better representation would have been to have more representation of principals with 6–10 years of principal experience and 21–25 years of principal experience. (see Table 2).

To facilitate a more balanced participant experience would be to have two teacher participants for each of 1–5 years, 6–10 years, 11–15 years, 16–20 years, 21–25 years, and 26+ years of experience in education. The same would be the case for the principalship in terms of educational experience. To facilitate a more balanced principalship experience would be to have two principal participants for each of the age categories.

Another limitation is in the number of male and female participants since two thirds of the participants were female. A more balanced teacher participant pool and principal participant pool of an equal amount of female and male participants could be considered.

The delimitation of doing knowledge management research in one school division was strategic. This school division was viewed as a school division who embraced knowledge management practices and that was reflected in the research results. The case study methodology was chosen over a phenomenological study as this research study was an in-depth look into how a school division worked with knowledge management practices. Yin (2018) explained that a case study involves in-depth analysis of multiple participants each being considered a case. Marshall et al. (2022) commented that phenomenological approaches “seek to explore, describe, and analyze the meaning of individual lived experiences” (p. 22). Patton (2002) stated that a phenomenological study into lived experiences would investigate how participants “perceive it, describe it, feel about it, judge it, remember it, make sense of it, and talk about it with others”

(p. 115). The purpose of this study was to hear the stories of 12 individuals regarding how they would enhance their knowledge management practices and to see if there were themes and sub-themes that would emerge. The study was not to look at the school division's lived experiences in a subjective way but to examine in-depth how the participants worked with knowledge management.

Recommendations for Future Research

The first recommendation is to replicate the study exactly as this study was conducted to see if there are similarities and examine any differences with the same participant structure. The triangulation of the data would include individual interview, journal prompts, and document analysis or it might include individual interviews, focus groups, and document analysis. It would be interesting to witness the focus group interaction to see how the participants would agree or disagree with what was shared. It would be interesting to see if the participants would benefit from the energy that might be created in the conversation.

Another possible study would be to have an equal number of participants in incremental years of experience. The first grouping of newly experienced educators and principals would be between 0–5 years of experience, 6–10 years of experience, and 11–15 years of experience. A second grouping of more experienced educators and principals would be 16–20 years of experience, 21–25 years of experience, and then 26+ years of experience to see the differences in their responses.

Another approach qualitatively could be a phenomenological study where a specific lived experience in knowledge management practices among participants could be studied such as how to have greater buy-in to knowledge management practices. Another phenomenological approach could be studying how a superintendent or director of education decides what knowledge or

information should be disseminated to the educators in the school division. Another approach qualitatively could be a narrative study with one participant who might be considered a master at knowledge management in a school division.

Quantitatively, a correlational study between a specific type of leadership and knowledge management practices might be interesting to see how that type of leadership might affect knowledge management practices or if it would affect it at all. Would a specific type of leadership enhance, support, and encourage knowledge management practices or would it have no effect on knowledge management practices? Would a specific type of leadership dissuade active participation in knowledge management practices?

During the interviews, two participants responded with the following questions, which would be interesting central questions or sub-questions in another qualitative research study:

- Is there a specific procedure that's recommended as more effective than others?
 - Or is it more dependent on individual preference based on their personalities and preferred learning styles?
- What independent research has been done on the topic?
 - What does research say about the most effective way to teach something?
 - What does research say about how our brains learn, and therefore, is this new information we are looking at going to be effective?
- Start with the purpose—why do we need knowledge management?
 - Then go to expectations—what kind of info is being managed (why) —what can be shared and what can't (again, why that is)?

Conclusion

The two most important ideas from this study are that knowledge management practices can be enhanced through goal attainment and connections according to the six principals and six teachers who participated in this study. The participants shared what they thought would enhance the use of knowledge management practices in their school division. Creating a strong climate and culture in schools is very important from an ontological perspective in terms of the multiple realities that create and support knowledge management. It is also important from an epistemological perspective supporting the nature of knowledge and how it assists in growth both personally and professionally. It is also important from an axiological perspective in that solid knowledge management practices need to be ethical, need to be of value, and need to always strive to promote goodness. According to this study's 12 participants from a western Canadian school division, effective and efficient goal attainment with strong connections through relationships, involvement, and engagement will help schools and organizations strive to be their best.

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Appendices

Appendix A: IRB Letter of Approval

LIBERTY UNIVERSITY.

INSTITUTIONAL REVIEW BOARD

September 2, 2022

Kathleen Grad
Denise Nixon

Re: IRB Exemption - IRB-FY22-23-95 Principals, Teachers, and Knowledge Management in a School Division in a Western Canadian Province: A Multiple Holistic Case Study

Dear Kathleen Grad, Denise Nixon,

The Liberty University Institutional Review Board (IRB) has reviewed your application in accordance with the Office for Human Research Protections (OHRP) and Food and Drug Administration (FDA) regulations and finds your study to be exempt from further IRB review. This means you may begin your research with the data safeguarding methods mentioned in your approved application, and no further IRB oversight is required.

Your study falls under the following exemption category, which identifies specific situations in which human participants research is exempt from the policy set forth in 45 CFR 46:104(d):

Category 2.(iii). Research that only includes interactions involving educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observation of public behavior (including visual or auditory recording) if at least one of the following criteria is met:

The information obtained is recorded by the investigator in such a manner that the identity of the human subjects can readily be ascertained, directly or through identifiers linked to the subjects, and an IRB conducts a limited IRB review to make the determination required by §46.111(a)(7).

Your stamped consent form(s) and final versions of your study documents can be found under the Attachments tab within the Submission Details section of your study on Cayuse IRB. Your stamped consent form(s) should be copied and used to gain the consent of your research participants. If you plan to provide your consent information electronically, the contents of the attached consent document(s) should be made available without alteration.

Please note that this exemption only applies to your current research application, and any modifications to your protocol must be reported to the Liberty University IRB for verification of continued exemption status. You may report these changes by completing a modification submission through your Cayuse IRB account.

If you have any questions about this exemption or need assistance in determining whether possible modifications to your protocol would change your exemption status, please email us at irb@liberty.edu.

Sincerely,

G. Michele Baker, MA, CIP

Administrative Chair of Institutional Research

Research Ethics Office

Appendix B: Reflexive Journal

| Date | Potential Bias |
|---------------------------------|---|
| January 2021 to May 2022 | <p>I decided on this study because I deal with many teams who manage information constantly. This information can be new studies to review, new approaches to learning, new software to use, and new assessment techniques. I realized throughout my creation of this study that I can become very biased very quickly as I have my ways of doing things which sometimes is in contradiction to my colleagues and teammates and not necessarily the right way to process it. I want to learn how better to process information that eventually will become knowledge that can be used now and stored for future needs. Education is ever evolving and knowing how to process it in the most effective and efficient way is very important in my view.</p> |
| June 2022 to August 2022 | <p>I received IRB approval with very few additions that I needed to add to my application. I was granted IRB approval on July 26, 2022. My method of participant recruitment was a purposive snowball approach. The Director of Education gave me the names of nine potential participants. I contacted all nine and six of the nine were eventually willing to participate eventually. The other six participants in the study were also suggested.</p> |
| September 2022 to December 2022 | <p>Primarily my time was spent contacting potential principal and teacher participants. I was concerned that trying to contact them at the end of August or the beginning of September was going to be futile as September is one of the busiest times of the year for principals and teachers for very different reasons. I had one teacher willing to be interviewed in September. The interview went very well and was very enjoyable. I waited until October to recontact with my original group of participants and contacted a new set of potential participants. October brought me eight very willing participants and within 2 weeks, I had their data. I found the transcribing to be very easy and it went quickly. I gathered the data from my last three participants in November. And now, the fun begins. I started my data analysis...</p> |
| January 2023 to April 2023 | <p>I had seven rounds of data analysis because I kept seeing different patterns as I delved deeper into the data. It went very well. I was able to see themes and categories during the interviews, journal prompts, and documents so the analysis went very quickly.</p> <p>I think the data analysis went very well because it appeared that all the participants were all “on the same page.” I was amazed. I didn’t have any outliers.</p> <p>I created tables of themes, categories, and sub-categories from the codes. I found in vivo quotes as I created the categories and dealt with the codes. I was able to find in vivo quotes from all the participants.</p> <p>I reread my Chapters One to Three before I started to work on my Chapter Four and Five.</p> <p>It was easy to write Chapter Four as I briefly explained each theme and sub-theme and provided important in vivo quotes to support the explanations. Chapter Five was a bit more challenging to write as that was my interpretation. I worried that I didn’t do justice to all the rich data that I collected.</p> |

| | |
|-------------------------|---|
| | This was so enjoyable. |
| May 2023 to August 2023 | Once I had finished Chapters Four and Five, I sent it to my chairperson. She sent it to the second reader. The feedback I received is that my Chapters Four and Five did not have the analysis depth that it needed so I dove deeper into the analysis and was very happy with what I had done. Once I sent it to my chairperson and she sent it to the second reader, the feedback was that I had added what I needed to add to the analysis. I was encouraged to create a clean copy in order for my chairperson to send it to the Director for the review before my defense. |
| June 30, 2023 | I successfully defended my dissertation. I quite enjoyed it. |

Appendix C: Recruitment Letter

Hello,

As a graduate student in the School of Education at Liberty University, I am conducting research as part of the requirements for a Doctor of Philosophy degree. The purpose is to understand how principals and teachers in a school division in a western Canadian province use knowledge management. I am conducting research with both principals and teachers. Mr. Emmerson has suggested that I contact you about the possibility of participating in my research. I have included a Screening Survey with this letter which will help me to build a diverse participant pool. I am hoping that you will take the time to fill out the Screening Survey and return it to me within three days.

If you are selected to be part of this diverse participant pool, you will be asked to provide any documentation (School Improvement Plans, minutes of meetings, Professional Development experiences, etc.) that you would like to share that would indicate how principals and teachers use knowledge management, participate in an individual interview of less than an hour in person or through VoIP (Voice over IP – multimedia and voice communication over the internet with Zoom), and reflect on four prompt questions. Your name and/or other identifying information will be collected as part of your participation, but this information will remain confidential. Your responses will be audio or video recorded, transcribed, held securely for three years, and then destroyed either by shredding or electronic deletion. Once your responses have been transcribed, you will have the opportunity to check the transcription for accuracy.

I am also hoping that you can suggest another principal and/or teacher whom I can approach to participate in my study as well.

To participate, fill out the Screening Survey and return it to me at kmgrad@liberty.edu. Within a day, I will be contacting you to let you know if you will be part of this diverse participant pool. If you are selected to participate, I will send you a Consent Form to participate and will respectfully ask that you return it to me within three days.

Sincerely,

Kathleen M. Grad, EdD
Doctoral Candidate

Appendix D: Screening Survey for Principals

PRINCIPALS, TEACHERS, AND KNOWLEDGE MANAGEMENT IN A SCHOOL DIVISION IN A WESTERN CANADIAN PROVINCE: A MULTIPLE HOLISTIC CASE STUDY

Kathleen M. Grad

Name _____
 School _____
 Town _____ Province _____ Postal Code _____
 Phone (H) _____ (W) _____ (C) _____
 Email _____

Please send your responses to this Screening Survey to kmgrad@liberty.edu.

1. Gender
 - a. Male _____
 - b. Female _____
2. Educational Degree:
 - a. BEd _____
 - b. Masters _____
 - c. Doctorate _____
 - d. Other _____ Please Explain: _____
3. Years in education:
 - a. 1 to 5 years _____
 - b. 6 to 10 years _____
 - c. 11 to 15 years _____
 - d. 16 to 20 years _____
 - e. 21 to 25 years _____
 - f. 26 years and beyond _____
4. Length of principalship
 - a. 1 to 5 years _____
 - b. 6 to 10 years _____
 - c. 11 to 15 years _____
 - d. 16 to 20 years _____
 - e. 21 to 25 years _____
 - f. 26 years and beyond _____
5. Years of experience
 - a. Rural school _____
 - b. Urban school _____

Thank you,
 Kathleen (Kathy) M. Grad, EdD

Appendix E: Screening Survey for Teachers

PRINCIPALS, TEACHERS, AND KNOWLEDGE MANAGEMENT IN A SCHOOL DIVISION IN A WESTERN CANADIAN PROVINCE: A MULTIPLE HOLISTIC CASE STUDY.

Kathleen M. Grad Teacher Screening Survey

Name _____
 School _____
 Town _____ Province _____ Postal Code _____
 Phone (H) _____ (W) _____ (C) _____
 Email _____

Please send your responses to this Screening Survey to kmgrad@liberty.edu.

1. Gender
 - a. Male _____
 - b. Female _____
2. Educational Degree:
 - a. BEd _____
 - b. Masters _____
 - c. Doctorate _____
 - d. Other _____ Please Explain: _____
3. Years as a teacher in education:
 - a. 1 to 5 years _____
 - b. 6 to 10 years _____
 - c. 11 to 15 years _____
 - d. 16 to 20 years _____
 - e. 21 to 25 years _____
 - f. 26 years and beyond _____
4. Years of experience:
 - a. Rural school _____
 - b. Urban school _____

Thank you,

Kathleen (Kathy) M. Grad, EdD

Appendix F: Acceptance or Rejection Email

Acceptance Email into the Research Study

Hello _____,

Thank you for taking the time to complete the Screening Survey for my research study entitled, *Principals, Teachers, And Knowledge Management in A School Division in a Western Canadian Province: A Multiple Holistic Case Study*.

Based on the responses you have shared with me; you are well suited to participate in my research study.

Attached to this email is a Consent Form that I would like you to complete and return to me via email within three days. Once I have received your signed Consent Form, I will be contacting you to set up the individual interview.

At this time, you may also want to send to me via email, any documents (such as meeting minutes, professional development notes, and school improvement plans) that would indicate how technological literacy is fostered among teachers.

I thank you for completing the Consent Form and returning it to me within three days.
Sincerely,

Kathleen (Kathy) M. Grad, EdD

Rejection Email into the Research Study

Hello _____,

Thank you for taking the time to complete the Screening Survey for my research study entitled, *Principals, Teachers, And Knowledge Management in A School Division in A Western Canadian Province: A Multiple Holistic Case Study*.

Based on the responses you have shared with me; I do not feel that you fit the criteria that I am looking for and will not be able to include you as a participant in this study.

I wish you all the best.

Sincerely,

Kathleen (Kathy) M. Grad, EdD

Appendix G: Consent Form

Consent

Title of the Project: Principals, Teachers, and Knowledge Management in a School Division in a Western Canadian Province: A Multiple Holistic Case Study

Principal Investigator: Kathleen M. Grad, EdD, Liberty University

Invitation to be Part of a Research Study

You are invited to participate in a research study. To participate, you must be a principal or teacher in the Sun West School Division. Taking part in this research project is voluntary.

Please take time to read this entire form and ask questions before deciding whether to take part in this research.

What is the study about and why is it being done?

The purpose of the study is to understand how principals and teachers in a school division in a western Canadian province use knowledge management. Principals and teachers in this school division in a western Canadian province need to have a voice in the realities they face with information and what is involved in converting it into knowledge. Principals and teachers live the onslaught of information and knowledge every day.

What will happen if you take part in this study?

If you agree to be in this study, I will ask you to do the following things:

1. Provide me with any documents that would show how you use knowledge management in your position as principal or teacher (approximately 60 minutes).
2. Participate in an individual interview of nine questions. Your individual interview will take between 30 minutes to one hour and will either be recorded via Zoom and/or digital recorder.
3. Respond to four journal prompt questions that will be sent to you after the individual interview with the expectation that you take not more than a week to send back your reflective responses to the interviewer (approximately 30 minutes).
4. Review the transcript of your individual interview. This should take about 15 minutes.

How could you or others benefit from this study?

Participants should not expect to receive a direct benefit from taking part in this study.

Benefits to society include all participants' experience of knowledge management and how it can be used in educational settings.

What risks might you experience from being in this study?

The risks involved in this study are minimal, which means they are equal to the risks you would encounter in everyday life.

How will personal information be protected?

The records of this study will be kept private. Published reports will not include any information that will make it possible to identify a subject. Research records will be stored securely, and only

the researcher will have access to the records. Data collected from you may be shared for use in future research studies or with other researchers. If data collected from you is shared, any information that could identify you, if applicable, will be removed before the data is shared.

- Pseudonyms will be used for each participant to protect his/her confidentiality. Interviews will be conducted in a location where others will not easily overhear the conversation.
- Research records will be stored securely on a password-locked computer. After three years, all electronic records will be deleted, and only the researcher will have access to the data and the paper copies. Paper copies of the interviews will be locked in a cabinet for three years and then destroyed by shredding.
- The individual interviews will be recorded and transcribed by the researcher. Recordings will be stored on a password locked computer for three years and then deleted. Only the researcher will have access to these recordings.

Is study participation voluntary?

Participation in this study is voluntary. Your decision whether to participate will not affect your current or future relations with Liberty University. If you decide to participate, you are free to not answer any question or withdraw at any time without affecting those relationships.

What should you do if you decide to withdraw from the study?

If you choose to withdraw from the study, please contact the researcher at the email address/phone number included in the next paragraph. Should you choose to withdraw, data collected from you will be destroyed immediately and will not be included in this study.

Whom do you contact if you have questions or concerns about the study?

The researcher conducting this study is Kathleen M. Grad, EdD. You may ask any questions you have now. If you have questions later, **you are encouraged** to contact her at [REDACTED] and/or kmgrad@liberty.edu. You may also contact the researcher's faculty sponsor, Dr. Denise Nixon at dnixon21@liberty.edu.

Whom do you contact if you have questions about your rights as a research participant?

If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher, **you are encouraged** to contact the Institutional Review Board, 1971 University Blvd., Green Hall Ste. 2845, Lynchburg, VA 24515 or email at irb@liberty.edu.

Disclaimer: The Institutional Review Board (IRB) is tasked with ensuring that human subjects research will be conducted in an ethical manner as defined and required by federal regulations. The topics covered and viewpoints expressed or alluded to by student and faculty researchers are those of the researchers and do not necessarily reflect the official policies or positions of Liberty University.

Your Consent

By signing this document, you are agreeing to be in this study. Make sure you understand what the study is about before you sign. You will be given a copy of this document for your records. The researcher[s] will keep a copy with the study records. If you have any questions about the study after you sign this document, you can contact the study team using the information provided above.

Liberty University
IRB-FY22-23-95
Approved on 9-2-2022

I have read and understood the above information. I have asked questions and have received answers. I consent to participate in the study.

The researcher has my permission to audio-record/video-record me as part of my participation in this study.

Printed Subject Name

Signature & Date

Liberty University
IRB-FY22-23-95
Approved on 9-2-2022

Appendix H: Individual Interview Questions for Principals

1. Tell me about your position, educational background, years in education, years in administration, area of academic expertise, and anything else that you would like to share with me about your school such as your culture and climate. CRQ
2. How user-friendly is your IT infrastructure? SQ3
3. How do you support teachers when new knowledge is made available to your school? SQ2
4. How do you improve knowledge transfer in your school? SQ1 & SQ2
5. How do you and your staff search for innovative ways to acquire and retain knowledge? SQ1 & SQ2
6. How is knowledge and information transferred within your school? SQ2 & SQ3
7. What is the attitude of your teachers when there is an expectation to apply new knowledge and put it into practice? SQ3
8. What do you do to encourage teachers to use their personal skills and competencies to use knowledge management? SQ1
9. How do you build a positive culture for knowledge-sharing and retention? SQ2

Appendix I: Individual Interview Questions for Teachers

1. Tell me about your position, educational background, years in education, years in a teacher leadership position, area of academic expertise, and anything else that you would like to share with me about your school such as your culture and climate.

CRQ
2. How user-friendly is your IT infrastructure? SQ3
3. How do you support each other when new knowledge is made available to your school? SQ2
4. How do you improve knowledge transfer in your school? SQ1 & SQ2
5. How do you and your staff search for innovative ways to acquire and retain knowledge? SQ1 & SQ2
6. How is knowledge and information transferred within your school? SQ2 & SQ3
7. What is the attitude of your fellow teachers when there is an expectation to apply new knowledge and put it into practice? SQ3
8. What do you do to encourage each other to use your personal skills and competencies to use knowledge management? SQ1
9. How do you build a positive culture for knowledge-sharing and retention? SQ2

Appendix J: Journal Prompt Questions for Principals

1. What are your concerns about the implementation of knowledge management? SQ1
2. What issues do you think are important to consider when using knowledge management to acquire and retain knowledge in your school? SQ2
3. How do you think your parents would react when you share the knowledge management strategy to acquire and retain knowledge? SQ2
4. How would you implement knowledge management with your parent advisory group? SQ2

Appendix K: Journal Prompt Questions for Teachers

1. What are your concerns about the implementation of knowledge management? SQ1
2. What issues do you think are important to consider when using knowledge management to acquire and retain knowledge in your school? SQ2
3. How do you think your parents would react when you share the knowledge management strategy to acquire and retain knowledge? SQ2
4. How would you implement knowledge management with your parent advisory group? SQ2

Appendix L: Goal Attainment Theme—Effectiveness

Theme: Goal Attainment

Category: Effectiveness

Sub-Categories:

| | | | | |
|--|----------------------------------|---|--|---|
| Being Lifelong Learners (Tacit) | Being Practical (Implicit) | Using Evidence-based Research (Implicit) | Knowing Purpose and Seeing Results (Implicit) | Delivering Effectively (Explicit) |
|--|----------------------------------|---|--|---|

Code:

- Model thirst for learning
- Absorb and apply new knowledge individually
- Learn first and then pass along that knowledge
- Always be learning
- It's not overly complicated

Code:

- Have paper meeting agendas
- Find ways to share so all have the same information
- Clear expectations for reading emails, procedures and processes, where information and knowledge is stored, where to store secure and sensitive information
- Technology-good, highly user-friendly, 1:1
- secure cameras great
- Avoid big disconnects
- Pursue new information but stay evidence-based

Code:

- Be aware of fads
- Become critical consumers

Code:

- Depends on what it is
- Some positive, some negative
- Open-minded
- Compliment
- Why is this better?
- Share information

Code:

- Group emails
- Teams
- Meeting agendas
- Staff meeting notes
- PD notes
- Research notes
- give parents information about events

Appendix M: Goal Attainment Theme—Efficiency

Theme: Goal Attainment

Category: Efficiency

Sub-Categories:

| | | | | |
|-----------------------------------|--------------------------------------|--|------------------------------------|--|
| Honoring Uniqueness (Tacit) | Keeping Streamlined (Implicit) | Overcoming Challenges (Implicit) | Applying Properly (Implicit) | Storing Knowledge Easily (Explicit) |
|-----------------------------------|--------------------------------------|--|------------------------------------|--|

Codes:

- Consider how each school is different
- Be aware of second-hand information
- Consider staff size and efficacy
- Time vs value
- Staff meetings and small groups
- Opportunity to vent
- Parent receptive
- Hoping parents react positively

Codes:

- timely
- Need time to learn and apply
- Share information
- Be effective
- Keep storing knowledge
- Make procedures clear
- Decide what is mandatory
- Have Admin streamline what is necessary
- Give time during the day for staff to work through new knowledge
- Give time during the day for staff to share new knowledge
- Simplify

Codes:

- Teachers and principals overwhelmed with onslaught of new knowledge
- Constant changes as to where new knowledge is stored
- Too many places where documents are stored

Codes:

- Sit and share
- Find ways to apply
- Set bar high
- Chunkable bits
- Important?
- Quick wins?
- Unlearn to relearn
- Individuality
- Processing time
- Exit slips
- Journaling and reflection
- Repetition of expectations
- Encourage new things
- Use social media
- Share School Learning Improvement Plans with parents
- Share Provincial Education Plan with parents

Codes:

- Email Folders
- Gradebook
- MSS
- Word Document Folders
- Teams

Appendix N: Connection Theme—Relationships

Theme: Connection

Category: Relationships

Sub-Categories:

| | | | | |
|-------------------------------|---|--------------------------|----------------------------------|-------------------------------|
| Supportive Leadership (Tacit) | Personal Enrichment & Research (Tacit & Explicit) | Considered Needs (Tacit) | Listening to Teachers (Implicit) | Effective Teamwork (Implicit) |
|-------------------------------|---|--------------------------|----------------------------------|-------------------------------|

Code:
 -Shared
 -Distributive
 -Trust the experts
 -Time management
 -Focus management
 -Give all that is needed to know
 -Must work for teachers and parents
 -Give parent council thorough understanding so they can pass that to others
 -Modelling
 -Work from strengths
 -Teachers are willing to use personal skills

Code:
 -Personal PD
 -Explore opportunities
 -Remember human factor in training
 -Use Google as a place to start
 -Classify knowledge so knowledge is done differently

Code:
 -Streamline
 -Watch stress levels
 -Decide level of importance
 -Take “onslaught” reactions seriously
 -Need time to turn new knowledge into workable knowledge
 -Consistent execution
 -Share processes well

Code:
 -Professional judgement
 -Identify what is important
 -Seek and own knowledge
 -Staff stability
 -Understand what I have to say
 -Not too much at once
 -Prepare people
 -Connect to learning
 -Slow “onslaught”
 -Provide in-service
 -Be available to help
 -Key people
 -Mutual perception with parents

Code:
 -Do things together
 -New teacher orientation
 -Peer coaching
 -Sit and share ideas
 -Ask questions
 -Link new knowledge into present functions
 -Shared support time
 -Set aside time to share
 -Staff chats

Appendix O: Connection Theme—Involvement

Theme: Connection

Category: Involvement

Sub-Categories:

| | | | | |
|--|---------------------------------------|--|--|---|
| Celebrating Intelligence (Tacit) | Valuing Involvement (Tacit) | Celebrating Expertise (Implicit) | Encouraging Sharing (Implicit) | Creating Usable Documents (Explicit) |
|--|---------------------------------------|--|--|---|

Codes:

- Streamline
- Ask questions
- Just know what to share

Codes:

- When people feel like they matter
- Making connections to life
- Look how to build excellent classrooms instead of more information
- Utilize all support (EAs)
- Learn and grow

Codes:

- Put more value on the knowledge of people in the building
- More recognition of great work being done
- Share leadership
- Nurture a close working relationship
- Value personal interaction
- Admin to send out information
- Be aware of people drowning in information
- Be aware of people feeling inadequate

Codes:

- Be conscious of how to share information and knowledge
- Can feel overwhelmed and swamped

Codes:

- Newsletters
- Student Work
- Calendars- Yearly, Monthly, Weekly
- Task lists
- Teams
- PowerPoint
- Word Documents
- Excel
- SharePoint
- Publisher

Appendix P: Connection Theme—Engagement

Theme: Connection

Category: Engagement

Sub-Categories:

| | | |
|---------------------------------|---|-----------------------------|
| Creating Comfort-Levels (Tacit) | Being Supportive and Encouraging (Implicit) | Sharing Document (Explicit) |
|---------------------------------|---|-----------------------------|

Codes:
-Different levels of technology use comfort
-Different levels of information and knowledge gathering and processing

Codes:
-Trust experts
-Verbal reassurance
-Admin support
-Teacher support in general
-Teacher support for introverts
-Scaffold
-How to share?
-Reach out to Division staff
-PD
-Streamline what is sent
-Weed-out non-important information
-Share when available
-Use email

Codes:
-Teams
-OneNote
-OneDrive
-DropBox
-Excel Spreadsheets
-SharePoint

Appendix Q: Audit Trail

| | Date |
|--|-------------------------------|
| Permission from Director | March 27, 2022 |
| Experts Review of Research Questions | June 2022 |
| Successful Proposal Defense | July 2022 |
| IRB Approval | September 2, 2022 |
| Collection of Consent Forms from Principals | October–November 2022 |
| Collection of Consent Forms from Teachers | October–November 2022 |
| Document Analysis—Principals | October–November 2022 |
| Document Analysis—Teachers | October–November 2022 |
| Individual Interviews—Principals | October–November 2022 |
| Individual Interviews—Teachers | October–November 2022 |
| Journal Prompts Collection—Principals | October–November 2022 |
| Journal Prompts Collection—Teachers | October–November 2022 |
| Data Analysis | December 2022 to January 2023 |
| Report Findings—Writing of Chapter Four and Five | February 2023 to June 2023 |
| Successful Dissertation Defense | June 2023 |