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# The Complexity of Mobilizing Knowledge: Putting What We Know into Action

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The Complexity of Mobilizing Knowledge: Putting What We Know into Action

by

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Abstract

Governments have increasingly been embarking on substantial waves of educational reform in an attempt to develop more effective school systems and raise levels of student learning and achievement. Some jurisdictions appear to be more successful than others at shifting their professional learning focus onto research-informed practice to create and apply new knowledge and expand teachers' repertoires of instructional practices within their complex knowledge-producing and knowledge-disseminating systems. The following study, an exploratory multi-case study of four high-performing Alberta school divisions, as determined by provincial accountability pillars, offers insight into how leaders mobilize knowledge to align research and learning practice within their complex social systems. The findings lend credence to the notion that a systems or complexity approach can play a role in understanding the unpredictability of organizational change and thereby enhance the mobilization of knowledge regarding the alignment of research and learning practice. Through a grounded theory approach, a conceptual framework emerged, built upon the complex interplay of three facets: (1) enhancing student learning, (2) ensuring best practice and research, and (3) establishing relational trust. These three facets are brought to fruition through a focus on five key dimensions: (1) efficaciously decentralizing: attending to both redundancy and diversity, (2) explicitly focusing: identifying sites of redundancy, (3) enacting expectations: implementing strategies for redundancy, (4) engaging expertise: identifying sites of diversity, and (5) ensuring efficacy: implementing strategies for diversity. The framework, while not definitive, contributed to the emerging picture of knowledge mobilization and the role that complexity theory can play in understanding and enhancing knowledge mobilization, a complex emergence phenomenon, with regard to aligning research and practice within self-organizing, self-maintaining, adaptive, learning systems such as

school jurisdictions. By attending to both redundancy and diversity, leaders are able to prompt the emergence of a social collective intelligence within distinguishable but intimately intertwined networks and displace the individual as the sole site of learning, and intelligence creativity.

Table of Contents

iv

List of Tables

List of Figures

Figure

**Chapter 1: Introduction**

Some jurisdictions are more successful than others at shifting their professional learning focus onto research-informed practice to create and apply new knowledge and expand teachers' repertoires of instructional practices. My study used complexity theory as a lens to explore how school and jurisdictional leaders from four Alberta school jurisdictions have successfully shifted their professional learning focus to improve student learning. Complexity theory is a theory of how certain types of systems adapt to evolving circumstances. It emphasizes the process rather than the content of learning and places emphasis on the relationship between essential unpredictable, nonlinear dynamic systems to create a sense of underlying order and structure. As such it can be utilized to shift thinking about school and jurisdiction improvement away from individual, controlled views, and towards a perspective of organizations as complex adaptive systems. The study offered insight into how leaders mobilize knowledge to align research and learning practice within their complex social system.

**Contextual Background**

Governments have increasingly been embarking on substantial waves of educational reform in an attempt to develop more effective school systems and raise levels of student learning and achievement. Such reforms have tended to focus on: curriculum; accountability, including student testing and public feedback; market forces, such as enhancing parental choice for schooling; and the status of teachers and their organizations through policy and collective bargaining arrangements (Hopkins & Levin, 2000). Alberta's ongoing endeavour for continual improvement means school jurisdictions find themselves working within a political landscape of reform, bound by structured efforts, high levels of expectations for results, and public accountability. This accountability-driven environment is framed within: centralized educational

1

legislation and policy; a provincial curriculum; and mandated structured strategic planning, accountability, and reporting; coupled with decentralized jurisdiction responsibility for implementing improvements at the local school jurisdiction level (Hopkins & Levin, 2000).

In 2010, the Government of Alberta commenced a transformation agenda by moving forward with the recommendations in *Inspiring Education: A Dialogue with Albertans* (Alberta Education, 2010a). This work commenced with the government accepting the recommendations of Inspiring Education and developing a framework built upon educational literature, research, and provincial and international frameworks for learning including *Setting the Direction Framework* (Alberta Education, 2009) and the Alberta Student Engagement Initiative *Speak Out* (Alberta Education, 2010b, 2010c), which have utilized online consultations and face-to-face engagements with parent groups, students, teachers, school administrators, jurisdiction leaders, researchers, jurisdiction board of trustees, business, and non-governmental organizations. As the government moved to implement the new framework, an inclusive education system was identified as part of the government's Inspiring Action on Education Initiative, and *Setting the Direction* was renamed *Action on Inclusion* (Alberta Education, 2009). In 2011, Alberta's *Framework for Student Learning: Competencies for Engaged Thinkers and Ethical Citizens with an Entrepreneurial Spirit*, the *three E's* of an educated Albertan, was produced by Alberta Education as a foundational element for review and development of future curriculum: programs of study, assessment, and learning and teaching resources (Alberta Education, 2011). The importance of system level efforts is pivotal to bringing a shift in thinking that facilitates school improvement.

Jurisdictions within Alberta have provided and supported professional growth and professional learning opportunities for teachers since before the Alberta Initiative for School

Improvement (AISI), which ceased to exist in 2013 during its fifth three-year cycle. AISI brought more than just funding to Alberta jurisdictions, it promoted a culture of research and inquiry, collaboration, and continuous improvement through evidence-based practices and research-based innovations that contributed to the body of knowledge about teaching, learning and instructional improvement. This cultural shift includes a shift in professional learning focus onto research-informed practice to create and apply new knowledge and expand teachers' "repertoires of instructional practices and improve student learning in Alberta" (Hargreaves et al., 2009, p. 55). Despite the number of ongoing reforms, studies, and research at the provincial and jurisdictional level, the mobilization of knowledge is limited. Research-informed best practice has been more embraced by some teachers than others and, even then, not all have embedded their learning into their practice. The College of Alberta School Superintendents (CASS) recognizes that within the current transition to a more inclusive learning environment, understanding how to bring about improvements in teachers' practice through embedding existing knowledge will become even more important. As will, creating and applying new knowledge that addresses the changing needs of education. As such, CASS has developed the *Alberta Framework for School System Success* (see Appendix A).

**College of Alberta School Superintendents**

The College of Alberta School Superintendents is actively working in collaboration with Alberta Education, the Alberta Teachers' Association, the Alberta School Boards Association, and other stakeholders to build the capacity of system leaders in order to be able to improve student success within Alberta. CASS is engaged in improving the quality of Alberta's educational system through their provision of "leadership, expertise, and advocacy to improve, promote, and champion student success" (College of Alberta School Superintendents, 2012, p.

4). The keystone of this endeavour is the *Alberta Framework for School System Success*. This framework uses "systematically collected evidence to inform decision making, creating educative policy, mobilizing knowledge for use, and setting the stage for successful policy implementation" (Brandon, Hanna, Morrow, Rhyason, & Schmold, 2013, p. viii). It "describes the qualities of school systems that are exceptionally effective at educating all students well" (Brandon et al., 2013, p. 17). It is the fruition of an ongoing research initiative emerging out of a growing understanding of systems theory, "one of the major tributaries to complexity thinking … [which focuses] in large part on living systems, seeking to understand the manners in which physical systems self-organize and evolve" (Davis, 2008, p. 52).

**Systems Theory**

Jurisdictions are as much knowledge-producing systems as they are knowledge disseminators and knowledge utilizers, and they are more than an administrative structure (Davis, Sumara, & D'Amour, 2012). They can in fact be argued to be complex systems. Complex systems are different from complicated systems in that the interactions of components are not fixed and the rules that govern the system vary dramatically from one system to another. Furthermore, the rules are subject to change and adapt to internal and external pressures (Davis et al., 2012). As such, one can utilize complexity science as "an emergent academic movement …(that studies) diverse elements which coalesce into a coherent discernible unity that cannot be reduced to the sum of its constituents," to explore how jurisdictions learn through the mobilization of knowledge (Davis et al., 2012, p. 375). A complex system can be thought of as a learning system which can adapt itself to changing circumstances (Davis, Sumara, & Luce-Kapler, 2008). As leaders strive to collaboratively change their schools and jurisdictions, teachers as individuals may not seem much different but the collective takes on a completely

different character (Davis & Sumara, 2001). To understand how jurisdictions learn, one should look at the interaction of dynamic, overlapping, interlacing and nested networks within the system.

## Purpose of the Research

The usage of research by teachers remains limited even though most jurisdiction leaders within Alberta recognize the benefit such findings can contribute to improving one's professional practice (Graham et al., 2006; Graham & Tetroe, 2007; Greenhalgh & Wieringa, 2011; Wandersman et al., 2008). Jurisdiction professional learning opportunities are often built on research findings about best instructional strategies but often teachers' exposure to such strategies does not translate to changes in practice. Fullan (2007) argues that strategies are needed that have a bias for action which he calls "capacity building with a focus on results" (p. 32).

Given the Alberta context and CASS's goal to build leadership capacity, the intent of this study was to examine the role jurisdiction and school leaders play in mobilizing knowledge about good learning practices and to explore the complementarities and synergies between knowledge mobilization and complexity theory to determine how a systems or complexity approach can play a role in understanding and enhancing the mobilization of knowledge regarding the alignment of research and learning practice.

The majority of quantitative research exploring the relationship between leadership and student outcomes indicates only a small, albeit statistically significant, effect on school effectiveness and student achievement (Hallinger & Heck, 1998). However, the picture one gains from the qualitative evidence, including indirect effects for the impact of leadership, is very different from that gained from quantitative analyses about how leaders establish the conditions

through which teachers make a direct impact on students. This difference between qualitative and quantitative evidence on leadership highlights the importance of the means by which leaders achieve an impact. Today we recognize that "leaders' impact on student outcomes will depend on the particular leadership practices in which they engage" (Robinson, Lloyd, & Rowe, 2008, p. 637).

## Research Question

Within complex systems, it is the interdependence and variation of individuals and collective behavior as well as the barriers placed on that variation that matters. Understanding the information, its existence and usage and how it travels through complex systems is vital if jurisdiction leaders want to influence school improvement. The more frequent and powerful interactions are, the more influence they will have. Within a complex system, the heart of the learning process is the role that information plays in how it moves between, and interacts with, agents and subunits. The nature and strength of the patterns of interaction are key to understanding the relationship between individuals and organizational goals and change (O'Day, 2002).

As a system leader whose primary role is to support schools in instructional improvement efforts, understanding knowledge mobilization is of great interest to me. As such the research question for this study is:

How do Alberta school jurisdiction leaders mobilize knowledge to align research and learning practice within school jurisdictions?

## Originality, Contribution and Significance of Research

The emergence of the transformation agenda in Alberta has led to renewed interest in and inquiry about the jurisdiction role in educational change, as system leaders can exert a powerful

influence on the kinds of instructional practices favored and supported across their schools (Leithwood, Louis, Anderson, & Wahlstrom, 2004).

Historically, school systems have identified what works based on personal practice and have built capacity by finding ways to transfer this knowledge about effective skills and strategies into other settings through the system (Stoll, 2009a). Through my research on knowledge mobilization, it is hoped that Alberta school jurisdiction leaders are provided with the capacity to mobilize knowledge about good learning practices within school jurisdictions. Once mobilized, knowledge can then be used to promote optimal learning among educators. The research provided insight into ways to enhance instrumental usage of research and policy through systemic practices that strategically change people's behavior in three specific ways: (a) adoption – using research results or recommendations derived from the research to decide what to do, (b) usage – acting to implement decisions based on research results and recommendations, and (c) institutionalization – creating practices based on research results and recommendations that become part of the expected and customary routines within the jurisdiction (Beyer & Trice, 1982).

## Theoretical Perspective

This section focuses on the philosophical and personal orientations that influence the development of the research question. It concludes with a description of the study in terms of the study's population, procedures used for data collection, and data analysis.

Although there are multiple pathways researchers could take to understand the complexities of human perspectives, values, and motivations, studies are typically approached with a particular philosophy or set of beliefs. This philosophical approach is normally situated within a particular paradigm and is made up of three components: ontology, the nature of the

reality; epistemology, a focus on how we know; and methodology, how we gain that knowledge (Guba & Lincoln, 1994). The ontological perspective influences the epistemology, just as the methodology is related to the paradigm perspective adopted and the corresponding ontological and epistemological claims. It is vital that the methodological claims and research methods be congruent with the state of existing knowledge related to the research questions.

My philosophical stance (theoretical perspective) is aligned with constructivism, making meaning within the individual mind, and constructionism, collective generation and transmission of meaning (Crotty, 1998, p. 58). I view both of these as exemplars of complexity theory as applied to educational contexts. Both, for example, are focused on the emergent possibilities that arise as subagents or subunits (re)combine and interact (B. Davis, personal communication, April 12, 2013). This epistemology takes an anti-foundational stance: "a refusal to adopt any permanent unvarying truth that can be universally known" (Lincoln & Guba, 2000, p. 177). I do not believe that criteria for reality or validity are absolute; rather, they are interactive and interpretive: "contingent upon human practices being constructed in and out of interaction between human beings and their world, and developed and transmitted within an essentially social context" (Crotty, 1998, p. 42). They are "derived from community consensus regarding what is 'real,' what is useful, and what has meaning (especially meaning for action and further steps)" (Lincoln & Guba, 2000, p. 167). This is not to say that research and best practice has no meaning, or no legitimacy. Instead, it implies a need to bring about interactions between the research and those who may benefit from its findings. Only through this interaction will knowledge be mobilized.

Ontology addresses one's belief about reality and what can be known. My research was approached with a holist ontology, in which I embraced systems thinking and refrained from

breaking down the world into smaller bits in pursuit of understanding. The world cannot be

deduced from the properties of the elements alone. Building on this ontology, I postulated that

facts and principles are inextricably embedded within a particular historical, social, and cultural

setting. This history and these social and cultural implications become fundamental to

understanding and being able to study educational endeavours. Congruent with my ontology, my

epistemological approach to knowledge acquisition is based on transactions that emphasize the

importance of interactions, context, interpretations and subjectivity (Guba & Lincoln, 1994, p.

111).

While it is easily understood that different intellectual traditions have different

understandings of what the nature and status of meaningful knowledge is, each strives to seek an

understanding of the world. Many take on a reductionist strategy of thinking that underestimates

the complexity of much of what we try to understand. If we acknowledge that the world in which

we live is complex, we also have to acknowledge the limitations of our understanding of this

world. This is not to say that complexity leads to relativism, for "the claim that we cannot have

complete knowledge does not imply that anything goes" (Cilliers, 2005, p. 260). It is easy to

dismiss any theory of dynamical systems as relativist. "While relativism is an easy charge to

level; the more important question is whether, if complexity theory is relativist, that actually

matters" (Morrison, 2008, p. 31).

Like differing intellectual traditions, "constructivist theories vary considerably across

such fundamental issues as their objects of inquiry and their advice to educators" (Davis &

Sumara, 2003, p. 125). A common alignment between the broad diversity of constructivist

theories is that "learning is a matter of *assembling*, *compiling*, *building*, or *constructing* one's

internal understandings … [and that] constructivists are not as much concerned with *assembling*

or *building* as they are with *discarding* and *revising"* (Davis & Sumara, 2003, p. 126).

Constructivism does not describe teaching; rather it describes learning, a complex, continuous process in which leaders have a responsibility in others' interpretations in order to reach a shared understanding (Davis & Sumara, 2003). As a descriptive theory, complexity theory is mostly silent on the key issues of values and ethics. It is a theory of change that emphasizes the process rather than the content of learning and places emphasis on the relationship between elements, rather than the elements themselves, and breaks with cause-and-effect models and linear predictability approaches to understanding phenomena (Morrison, 2008). Complexity theory can suggest what to do if one wishes to promote change, but it does not tell us if those actions are desirable.

### The Researcher

During my Doctorate I was employed as the superintendent of an Alberta School Jurisdiction and sat on the provincial executive for the College of Alberta School Superintendents and the Assistant Deputy Minister's Curriculum Policy Advisory Committee prior to commencing this study. My interest in examining the conditions that bring about effective knowledge mobilization stem from my current role as superintendent and previous associate superintendent role where I planned comprehensive professional development programming that integrated professional development needs in the areas of the Alberta Initiative for School Improvement (AISI) programs, new curriculum, technology, student achievement, student assessment, and teacher evaluation. Building on my Master's degree in Educational Leadership I became fascinated with the topic of systems, change, and leadership. Through my experience as a teacher, principal, director of curriculum and instruction, associate superintendent, and superintendent I have both knowledge and understanding of the provincial

context and practical experience as a working professional in a doctoral program. Working with teachers across my school jurisdiction and with senior leaders across the province of Alberta, I am able to recognize and understand the challenges system leaders face when attempting to bring about sustained change via research, policy, and practice alignment.

## Key Terminology

The purpose of this study was to examine how Alberta school jurisdictions mobilize knowledge about good learning practices. Within this research there are a number of terms that were used interchangeably while others need defining to provide clarity. These include:

Diversity – a term that is used to refer to variations among units/parts/agents that are necessary for appropriate intelligent action. It is seen as a source of possible responses to emergent circumstances and enables novel actions and possibilities in response to contextual dynamics (Davis & Sumara, 2009).

Knowledge – knowledge as used in this research refers to both knowledge *about*, declarative knowledge that can be retrieved when prompted to state what one knows about something, and knowledge *of*, which implies the ability to enact subject specific techniques and methods. Knowledge *of* consists of both declarative and procedural knowledge (Scardamalia & Bereiter, 2006). I took the view that all knowledge, and therefore all meaningful reality, is contingent upon human practice and is developed and transmitted within a socially, culturally, and historically context. Knowledge is both incorporated into the learner's existing repertoire of knowledge and made meaningful for the learner by the context and activities through which it is acquired. The term included knowledge possessed by an individual or a collective, such as a group or system, and included a host of overlapping subtypes including:

*Priori Knowledge* – knowledge that is obtained without needing to observe the world.

*Posteriori, or Empirical Knowledge* – knowledge that is only obtained after observing the

world or interacting with it in some way.

*Explicit Knowledge* – knowledge individuals can articulate at will. Often formalized and

easily documented and shared via printed materials (Nonaka & Takeuchi, 1995), it

included the term public knowledge: knowledge from theory, research, and praxis.

*Tacit Knowledge* – intuitive knowledge and know-how that is rooted in context,

experience, practice and values. Tacit knowledge is hard to communicate as it is deeply

ingrained and often taken for granted because we are often unaware of what we know. It

resides in the mind and emotions of the practitioner and is seen as a necessary but usually

invisible substrate of explicit knowledge. On the collective level, tacit knowledge is the

usually unnoticed web of associations built into language, morals, and habits of action.

Knowledge Mobilization – addresses research-policy-practice gaps in education and is used to

accentuate the necessity of moving knowledge into active service for the purposes of

improving student learning. The term knowledge mobilization builds on the work of

Cooper, Levin, and Campbell (2009); Levin (2008); and Stoll (2009b) and recognizes the

importance of educational leaders and teachers working together through dialogue and

other collaborative practices in order to act on knowledge to change practice. The term

knowledge mobilization does not have universal acceptance. Different researchers use

different terms (see Appendix B). When citing other authors' work their term may be

used with the recognition that they are interchangeable.

Leadership for Learning - Robinson (2011) and the Wallace Foundation under the commission of

Leithwood and Louis (2011) argue that the consolidated link between leadership and

student outcomes is imperative if we wish to improve student learning. Robinson (2011) and the College of Alberta School Superintendents call this fusion *student-centered leadership* and stress the need to shift the focus from leadership style, or typology, to leadership practice with a focus on the role that school leaders play in the improvement of teaching and learning.

Midlevel Leader – midlevel leaders as used in this research, refers to central office leaders, not including the superintendent, who hold a certificate of qualification as a teacher issued under the School Act or an equivalent certificate issued by another province or a territory, but are not subject to any applicable collective agreement and the teachers' contract of employment. Midlevel leaders include: deputy superintendents, associate superintendents, and assistant superintendents.

Redundancy – a term used to refer to duplications and excesses of those aspects that are necessary for knowledge mobilization; it strengthens knowledge mobilization endeavours as it allows for agents to compensate for others' failings. Redundancy is about the transformation of a "group of affiliated but independently acting agents into a unity in which personal aspirations contribute to grander collective possibilities" (Davis & Sumara, 2009, p. 38).

School Jurisdiction – in Alberta, parents have a diverse array of options for educating their children including: public schools, separate schools, Francophone schools, private schools, and charter schools. There is also a variety of innovative programs, such as: home education, online or virtual schools, outreach programs and alternative programs. My research focused on Alberta public and separate school jurisdictions that are universally accessible, overseen by the Government of Alberta, deliver the Alberta

curriculum, and are publically funded. These can be further broken down into rural, urban, and metro, with metro including the large public and separate boards of Calgary and Edmonton. When naming school jurisdictions, the terms school jurisdiction, school district, and school division are used interchangeably. For the purpose of this dissertation, I used the term "school jurisdiction".

## Chapter Summary

The first chapter provided a contextual overview of educational change efforts within the Province of Alberta that inform CASS's *Alberta Framework for School System Success* (College of Alberta School Superintendents, 2011) and the notion of knowledge mobilization. It attempted to clarify the purpose of the study and presented the intended research question: How do Alberta school jurisdictions mobilize knowledge to align research and learning practice within school jurisdictions? The significance of the study is presented along with the theoretical perspective, the researcher background and the key terminology that is used in the study and dissertation.Chapter 2 explores the current literature related to knowledge mobilization.

## Chapter 2: Literature Review

## Introduction

What follows is a review of the literature including a rationale for this study. The chapter is divided into three main parts. The first part is a discussion of the major competing typologies of leadership. The second part delves into the role the College of Alberta School Superintendents plays with regard to building system leadership capacity, and focuses specifically on CASS's *Alberta Framework for School System Success* (College of Alberta School Superintendents, 2011). The third and largest portion explores the knowledge mobilization research including knowledge-to-action processes.

## Leadership

"There are more than 350 definitions of leadership but no clear and unequivocal understanding as to what distinguishes leaders from non-leaders" (Cuban, 1988, p. 190). Most of these definitions seem to link it to influence, indirectly suggesting that it is a process which leads to the achievement of a desired purpose, and involves inspiring and supporting others towards the achievement of a vision (Bush & Glover, 2003). A review of the literature reveals a number of competing models or typologies of leadership that are often referenced when talking about educational leadership. Leithwood, Jantzi, and Steinbach (1999) attempted to summarize leadership within a number of models: managerial, interpersonal, moral, servant, instructional, participative, transformational, and contingent. They differentiate among these based on the purpose for which leaders exercise their influence.

During the 1960s and 1970s, leadership styles were largely categorized as managerial. Similar to the formal model of management, managerial leaders implemented government initiatives and focused on tasks and behaviours assuming that "the behavior of organizational

members is largely rational and that influence is exerted through positional authority within the organizational hierarchy" (Bush & Glover, 2003, p. 20). Another form of leadership prevalent during this time was interpersonal leadership. Interpersonal leaders (West-Burnham, 2001) focused on values, ethics, and relationships with teachers, students, and others connected with the school and have "advanced personal skills which enable them to operate effectively with internal and external stakeholders" (Bush & Glover, 2003, p. 21).

Moral leadership, popularized by Sergiovanni (1992), also focuses on the values and beliefs of leaders but moves beyond management and simply enhancing relationships by "providing the school with a clear sense of purpose" (Bush & Glover, 2003, p. 17).

Servant leadership, popularized by Greenleaf (1977), harnesses the innate feeling of wanting to serve, consciously linking it to aspiring to lead. A servant leader is "sharply different from one who is a leader first, perhaps because of the need to assuage an unusual power drive or to acquire material possession" (Greenleaf, 1970, p. 13) .

By the mid-1980s, the emphasis on the leader shifted towards instruction, and this introduced the notion of instructional leadership. Instructional leaders focus on teaching and learning and specifically teachers' behaviours that directly affect the growth of students (Leithwood et al., 1999). "The emphasis is on the direction and impact of influence rather than the influence process itself" (Bush & Glover, 2003, p. 12). While the focus brought about change, it often failed to change standard operating procedures vital to the survival of the change. The concept of instructional leader also failed to acknowledge the size and complexity of secondary schools and administrative practice within these schools. Large secondary schools simply have too many teachers and too much complex curriculum for school leaders to be an

instructional leader with expertise in all of the pedagogical content knowledge (Leithwood et al., 1999, p. 25).

For sustainable school improvement to occur, schools require informal leaders at all levels of the organization (Elmore, 2000). This form of leadership, known as participative leadership, emerged in the context of site-based management and focuses on the decision-making process of the group, with the goal of increasing accountability and efficiency and the hope of an eventual pay off for students. Supporting the importance that shared leadership and decision-making play in supporting student learning and organizational capacity, participatory leadership leads to enhanced outcomes via greater commitment to the implementation of decisions (Bush & Glover, 2003).

During the 1990s, Leithwood's transformational leadership model, which was adapted from Burns (1978), emerged in conjunction with the standards-based reform movement. New standards forced school leaders to examine what was going on in classrooms given that they were held accountable for student performance. During this time, school leaders became responsible for the initiation of change, not just the implementation of change, and principals began to enlist support from teachers and other stakeholders to partake in identifying and attending to school goals (Bush & Glover, 2003). With the advent of the learning-centered principal came a shift from focus on teaching (instructional leader) to a focus on learning. (Dufour, 2002). Bass (1990) and Leithwood (1999) are key proponents of transformational leadership and described the influence process as focusing on increasing the commitments of followers to organizational goals. Leaders seek to engage the support of teachers for their vision for the school and to enhance their capacities to contribute to goal achievement. "Its focus is on this process rather than on particular types of outcome" (Bush & Glover, 2003, p. 15).

These different leadership styles are not distinct from one another. In many cases there is considerable overlap due to wide variation in school contexts. In fact, Yukl (1981) stated that leaders' jobs are complex and require them to read situations and adapt their behavior. This adaptation to context can be called contingent leadership as it focuses on how leaders respond to the unique organizational circumstances or problems they face and "adapt their approaches to the particular requirements of the school, and of the situation or event requiring attention" (Bush & Glover, 2003, p. 22). Furthermore, leadership styles are not mutually exclusive, as one can find leaders that operate within each of the different styles in Alberta schools.

Much of the leadership literature has grounded leadership in leaders and followers and has failed to recognize that leadership is not merely the act of influencing but rather is "embedded in a complex interplay of numerous interacting forces" (Uhl-Bien, Marion, & McKelvey, 2007, p. 302). Forces that include mutual influence and contexts in which the ontology of leaders and followers fails to account for all of the phenomena (Drath et al., 2008). The debate over which leadership typology affords maximum leverage for contributing to learning has diminished in recent years. There is an increasing recognition that leaders need to adapt the characteristics of more than one typology to be effective. Leaders include middle managers, school leaders, and teacher leaders as their strategic influence arises from their ability to mediate between internal and external social networks (Floyd & Wooldridge, 1997). Building on the notion of contingent leadership and embracing a more multidimensional approach, leadership for learning and student-centered leadership focus on influences that impact students' achievement, "knowing what to do and how to do it" (Robinson, 2011, p. 16). These new typologies rely heavily on features of instructional leadership, transformational leadership, and shared leadership (Hallinger, 2003; Heck & Hallinger, 2009). Instructional leadership focuses the

behavior on student learning, transformational leadership increases the commitment of followers and shared leadership imparts a shared responsibility for achieving a common outcome. Together these three sides of the leadership triangle point the way to improved student learning.

The theoretical literature on leadership is brimming with unidimensional perspectives on leadership that provide a limited view, dwelling excessively on some aspects while ignoring others. The typologies summarized within this chapter show that the concepts of school leadership are complex and diverse. Most typologies can be framed as either taking a managerial, instructional, or transformational focus. Managerial typologies focus on the implementation of practices that are typically limited to resolving social and educational problems efficiently and effectively. Instructional typologies shift the focus from the process of influence to the direction being influenced while transformational typologies focus on the initiation of change, not just the implementation of change (Bush & Glover, 2003). As leaders interact within their complex systems, they should have a clear focus on learning, develop a clear vision for their jurisdiction, and take a participative, collaborative approach that includes management as well as a diverse portfolio of leadership styles, and practices for them to draw upon. The theoretical literature on leadership and change makes the case that not all change is of the same magnitude and that order of magnitudes will change for each individual or group (Waters, Marzano, & McNulty, 2003). Thus, in addition to changing leadership foci, leaders must understand the order of change they are leading and tailor their own practices accordingly.

When reviewing the literature on leadership, many authors write about the general term, leadership, not distinguishing between whether it is as the school or jurisdiction level. Marzano and Waters (2006, 2009) addressed jurisdiction-level leadership. Through meta-analysis, they examined previously published studies containing information about the relationship between

overall jurisdiction-level leadership and student achievement. Analyzing these documents, Marzano and Waters make the claim that while jurisdiction-level leadership is complex, the correlation between jurisdiction leadership and student achievement is statistically significant. While there are many current examples of how educational groups are addressing the complexity of jurisdiction-level leadership, an Alberta example of implementing leadership practices is CASS's work regarding the *Alberta Framework for School System Success* (College of Alberta School Superintendents, 2011). "The essence of a profession lies in its members' commitment to using what they commonly understand to be good practice" (Levin, 2010, p. 306). The *Framework* is grounded in the notion of knowledge mobilization and idea of improvement. By conceptualizing the framework in relation to ontology, the focus shifts onto "learning professional ways of being, that is, becoming the professionals in question. In other words, it places emphasis on enabling [educators] to integrate [research into] their ways of knowing, acting and being professionals" (Dall'Alba, 2009, p. 44).

## Alberta Framework for School System Success

Over the last decade, CASS has proactively positioned itself as a professional organization that is grounded in the belief that "behind excellent teaching and excellent schools is excellent leadership" (The Wallace Foundation, 2006, p. 1). Innovation and advancement does not emerge from the insular minds of individuals (Uhl-Bien et al., 2007). Harnessing the power of its 300 members and outside experts, CASS's aim is to foster good leadership practices. By assisting jurisdiction leaders to reflect upon ways to improve their own leadership skills and those of their colleagues, CASS hopes to build the capacity of its members and better prepare them to facilitate alignment of the efforts of all stakeholders, including Alberta Education, parents, teachers, school boards, communities, and system leaders. Through its mentorship work

and professional learning opportunities, CASS's aim is to empower its members to create and lead positive changes in practice for the betterment of student learning. CASS is exploiting the potential of networks, a process that Levy (2000) calls collective intelligence, where "everyone knows something, nobody knows everything, and what any one person knows can be tapped by the group as a whole" (Jenkins, 2006, p. 106). Within such complex systems, context is not an "antecedent, mediator, or moderator variable; rather, it is the ambiance that spawns a given system's dynamic persona … the nature of interactions and interdependencies among agents (people, ideas, etc.), hierarchical divisions, organizations, and environments" (Uhl-Bien et al., 2007, p. 299).

Most independent research shows that only about three out of every ten initiatives give the return on investment that is forecast (Miller, 2001). Leaders need to explore which competencies, capabilities, resources, and assets set one system up for success while making another stumble (Levy, 2000). Uhl-Bien, et al. (2007) state that this is due to the fact that problem solving is often performed by groups coordinated by centralized authorities instead of social networks that are better able to deal with high-level abstract concepts and complex interactions between organizations and their changing environment. "Complexity theory attempts to reconcile the essential unpredictability of non- linear dynamic systems [which often creates obstacles to change] with a sense of underlying order and structure" (Levy, 2000, p. 73).

The *Alberta Framework for School System Success* (College of Alberta School Superintendents, 2009) attempts to support change efforts that often fall short in adopting supportive, well-aligned practices, and are typically insufficiently differentiated to allow systems to choose or adapt programs to improve leadership that fit their own particular context. The framework embraces the intrinsic concept of reflection, dialogue, sharing, and collaborating in

21

both formal and informal ways. It attempts to address common concerns and observations that

most initiatives have not paid sufficient attention to, including how to create a framework for

implementation that leaders can utilize to induce changes in practice (Hopkins & Levin, 2000;

The Wallace Foundation, 2006). In my previously published article, *Mobilizing the CASS*

*Framework for School System Success* (Tymensen, 2014), I provided a conceptual model,

adapted from the Wallace Foundation (2006), that hypothesized that a more coordinated

approach at the provincial and jurisdictions level with regard to policies, practices, standards,

training, and conditions would better support leaders to improve instruction and student

achievement. The model places CASS as the intermediary between provincial and jurisdiction

roles, and leverages the framework as a powerful driver for student improvement.

In a knowledge economy effective leaders need to be skilled at mobilizing knowledge to

address social and educational challenges. They must do more than simply bring the best

research findings to the table. Such findings must be acted upon and used if leaders want to

shape, guide, and create change. CASS is attempting to build leaders' capacity with regard to the

development of a knowledge mindset, a mindset that values knowledge, which is distinct from

opinion, notion, personality, or sentiment. Leaders need to know how to distinguish meaningful

and substantive content from findings that lack integrity and substance. CASS is endeavouring to

develop such a knowledge mindset within jurisdiction leaders and is harnessing the power of its

networks to address the fact that knowledge mobilization cannot be carried out by a single

leader. It is the leader's role to encourage a holistic approach where each individual who plays a

key role in the creation of a social problem has a key role in its resolution.

CASS recognizes that formal research and evidence about effective practice plays far too

small a role in policy and in school improvement. As such, the *Alberta Framework for School*

*System Success,* also referred to as *Moving and Improving* and *Leadership Learning,* is built upon research and harnesses sound jurisdiction leadership practices that have been shown to be instrumental to creating the conditions for student and school system staff to succeed (College of Alberta School Superintendents, 2009). Transforming Alberta's complex educational system requires leadership, effective planning, and commitment to goals and strategies that are informed by research.

CASS's goal continues to emphasize helping school jurisdictions improve student learning through leadership development, as actions at the jurisdiction level, such as enhancing leadership capacity, are essential to improving schools and student learning (College of Alberta School Superintendents, 2009; Pont, Nusche, & Moorman, 2008). Containing 11 dimensions organized under five key themes, CASS's framework has undergone continual modification and was officially released as a second edition in 2013. The new *Framework* contains a twelfth dimension related to leveraging technology and has restructured the themes and dimensions (see Appendix A). The framework is grounding CASS's work with regard to maximizing mobilizing knowledge. As a learning system, CASS members as system leaders are part of a complex knowledge-producing and knowledge-disseminating system that must understand the role information plays and how it moves between, and interacts with, its members, jurisdictions, the Alberta School Board Association, Alberta Education and other external stakeholders.

### Knowledge Mobilization

The ineffective practice of simply acquiring or sharing information about research findings remains an all-too-common practice employed by leaders to bring about change. Such an endeavour does little to change teacher's behavior (Bhattacharyya, Reeves, & Zwarenstein, 2009). In this section, the body of literature pertaining to knowledge mobilization and its role in

aligning research and good learning practice is discussed. This is particularly important given that our perspectives about how research, policy and practice inform and interact with each other dramatically shapes our efforts to mobilize knowledge (Best & Holmes, 2010). Particular attention was given to linkages with the work currently underway within the College of Alberta School Superintendents, since the objective of my study was to explore how Alberta school jurisdiction leaders mobilize knowledge to align research and learning practices within school jurisdictions. Drawing upon complexity theory, the intent was to understand how systems can learn and co-create change more effectively given that "successful and sustainable improvement can never be done to or even for teachers. It can only ever be achieved by and with them" (Hargreaves & Fullan, 2012, p. 45).

Research in the area of knowledge mobilization, while not novel, is a relatively new concept, with no current consensus on an official term with which it should be labeled. Within the literature there are over 25 terms used to refer to some aspect of the concept of knowledge to action, including implementation research, knowledge building, knowledge animation, knowledge mobilization, knowledge translation, and knowledge transfer being some of the more common terms (see Appendix B). Knowledge mobilization describes the elements of efforts to go from knowledge to action (Graham et al., 2006). It refers to understanding how research makes its way into organizations and provides guidance for system leaders to implement intentional efforts that result in changes in ideas, policies and practices within the education sector. Knowledge mobilization builds on the *research utilization* work of Weiss (1979). What is new within educational change efforts is the emphasis that research plays in informing leaders about change. Increasingly, research is viewed as being the vehicle through which we can transition from practices where individuals gain knowledge *about*, declarative knowledge you

can recall, to practices where individuals gain knowledge *of*, which implies the ability to do (Scardamalia & Bereiter, 2006).

"Education is among the most complex of human enterprises" (Davis & Sumara, 2010, p. 856). Leaders must be attentive to context, connections, contingency with a focus on listening, participating, and engaging, as improvement is not as simple as instructing about optimal practices (Davis & Sumara, 2010). They must also understand teacher efficacy for high-quality professional behavior stems from and results in high levels of teacher efficacy (Waterhouse, 2014). Furthermore, "teacher efficacy has proved to be powerfully related to many meaningful educational outcomes such as teachers' persistence, enthusiasm, commitment and instructional behavior, as well as student outcomes such as achievement, motivation, and self-efficacy beliefs" (Tschannen-Moran & Hoy, 2001). Knowledge mobilization is not as simple as disseminating knowledge; just because people are exposed to research does not mean they will implement it within their practice. Leaders must provide ongoing support to teachers during their professional learning in order to maximize efforts to improve student success. Only when they understand the complex array of interactions that have a bearing on why some teachers choose to use the learning they are exposed to, and others opt not to, or fail to implement their learning, can leaders maximize their efforts to change instructional practice.

Little consideration regarding the complexity of knowledge mobilization has been taken into account within the current research on knowledge mobilization. The intent of this study was to examine the role jurisdiction and school leaders play in mobilizing knowledge about good learning practices and to explore the complementarities and synergies between knowledge mobilization and complexity theory and determine how a systems or complexity approach can

play a role in understanding and enhancing the mobilization of knowledge regarding the alignment of research and learning practice.

Framing problems and introducing interventions that design and implement appropriate responses aimed at changing practices "takes place in the context of a complex array of institutional arrangements, interests, and ideas that are animated by individuals and occasionally profoundly influenced by external events" (Lavis, 2006, p. 39). Research and jurisdiction change processes such as policy revision or creation and improving instructional practice are often distinct and asynchronous processes, having little to do with one another (see Figure 1, scenario A). It is rare that research findings are published at the exact time that jurisdictions are working on related change processes. Often, policy and instructional practice improvements are built in isolation from research but, when interconnected, they are more likely to be fortuitous (see Figure 1, scenario B). Lee Jong-wook stated that "there is a gap between today's scientific advances and their application: between what we know and what is actually being done" (World Health Organization, 2006, p. 1). One possible explanation for this gap is the cultural gap between educational professionals and university researchers (Cooper & Levin, 2010). Knowledge mobilization provides the capacity to build a bridge between these two autonomous practices with the support of mobilization strategies within a social context (see Figure 2). Early efforts to bridge this gap were largely passive, focusing on diffusion and dissemination of research. Through more focused, systemic, and strategic practices that are built around contextual variables, a deliberate link can be formed that enhances uptake and aligns research, policy, and practice.
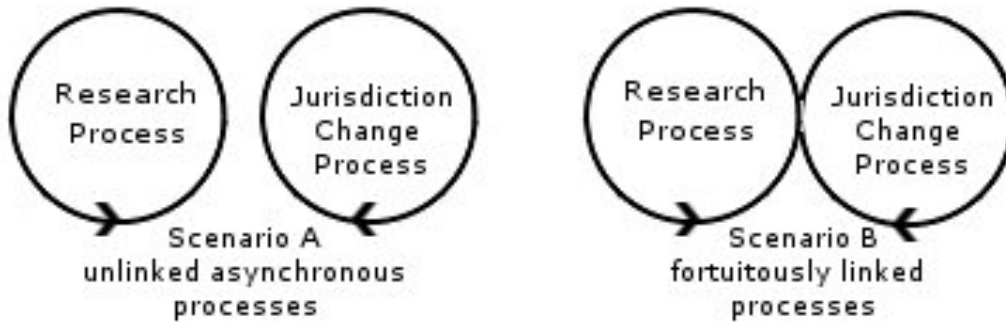
*Figure 1.* Research and the jurisdiction change processes typically occur asynchronously and when linked are often merely fortuitously linked.

The knowledge-doing gap described by the World Health Organization (2006) is actually twofold and includes: the gap from research to policy and the gap from knowledge to action. This second knowledge-to-action gap includes organizational members' awareness of and understanding of policy, as well as their ability to mobilize policy guidelines and procedures into action. Moreover, it includes organizational members' ability to utilize research to bring about improvement in personal practice whether policy does or does not exist. When research is utilized to inform policy one must be wary of the diminution of research findings by those who are merely directed by school and/or jurisdiction leaders to access and act upon the research findings. Such compliance-by-direction only further reduces the research and policy impact upon their practice as they fail to take ownership of the research to improve their practice.
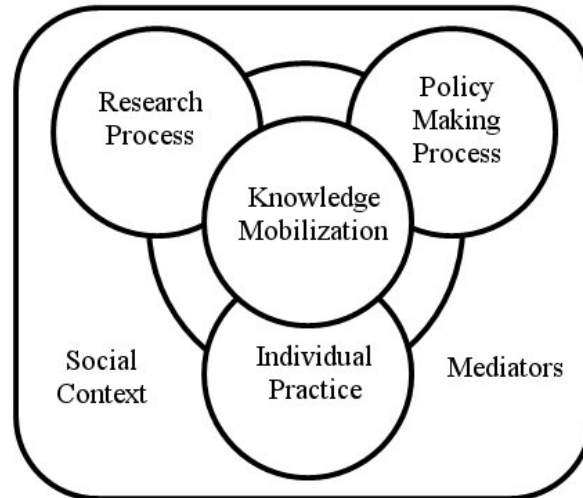
*Figure 2.* Mobilizing Knowledge is the purposeful linkage of research, policy, and practice within a social context, often supported through the work of mediators.

From a jurisdictional perspective, there are five organizational variables that have an impact on knowledge mobilization: absorptive capacity, the extent to which capacity for finding and implementing research is developed; organization culture, the extent to which research is the preferred source of information; adaptation efforts, the efforts to acquire research and adapt the research products to the jurisdiction; learning, the percentage of time allocated to finding and implementing research; and facilitation mechanisms, the intensity of links between research suppliers and users (Belkhodja, Amara, Landry, & Ouimet, 2007, p. 393). The second variable, organizational culture includes: a lack of available time, access to current research literature, critical appraisal skills, and decision-making authority to implement research results. It also includes work environments and jurisdictional decision-making processes that do not support research transfer and uptake, resistance to change, and limited resources for implementation (Dobbins, Rosenbaum, Plews, Law, & Fysh, 2007). While this list is extensive, I would add two more variables: the content of the research findings and the attitude of practitioners. The first

28

relates to the characteristics of the research, which has an impact on its adoption in practice. Characteristics such as the compatibility with teachers' values, the complexity of the research findings, the degree to which benefits can be observed, the relative advantage over other approaches, and the ability to test the practice before adopting it all factor into research uptake (Sanson-Fisher, 2004). The latter centers on teachers' preexisting behavioral routines; do they lack self-efficacy or lack of motivation to change? (Cabana et al., 1999).

System leaders along with school leaders and teachers can employ three usages of research and policy: (a) instrumental use – acting on research results in specific, direct ways, (b) conceptual use – using research results for general enlightenment; and/or (c) symbolic use – using research results to legitimate and sustain pre-determined positions (Pelz, 1978). The degree to which individuals enact levels of usage is further complicated by the characteristics of the research findings. Compatibility, complexity, observability, trialability, validity, reliability, credibility, dependability, and applicability, play a significant role in uptake (Cooper & Levin, 2010, pp. 359-357). Along with research characteristics, context and the individual's interaction with the research and policy's theoretical perspective also play a significant role in alignment of research and good learning practice.

## Resistance to Knowledge Mobilization

Knowledge mobilization involves understanding and attempting to address the complex needs of jurisdiction personnel in order to bring about enhancements in practice. While some individuals readily seek out and adopt research findings, others are more skeptical and hesitant to change their practice. This hesitation may be due to teachers' reluctance to move away from what is familiar and safe. Teachers are understandably resistant to research that is critical of what they have been doing (Campbell, 1969), does not agree with their expectations, values, and

29

experience (Weiss & Bucuvalas, 1980), or threaten the stability of cherished beliefs and viewpoints (Zusman, 1976). Reluctance may also be due to a fear of or lack of actual support for implementing change. Because participation in research is positively linked to knowledge mobilization, the degree to which educators embrace or resist change, or create positive or negative emotional bonds to research or changes in practice, depends upon whether educators were involved in the research (Pelz, 1978). This reference to direct involvement supports the success that the action research of various AISI projects has had on changing practice. Reluctance to implement research findings also depend upon the motives educators have to resist research (Pelz, 1978). When not directly involved in the research, educators' behavior has four components that relate to knowledge mobilization: cognitions, which elements of situations educators see as relevant to their situation; feelings, expressed as values educators place on the research; choices, interrelate with cognition and feelings through the choices educators make; and actions, the conscious or unconscious behaviours educators engage in to implement their choices (Beyer & Trice, 1982).

To further support the notion of complexity with regard to knowledge mobilization, it is important to recognize that what may be perceived as a resistance to change may in fact be a desire to persist, to embody one's history and to preserve those patterns of actions and interpretations that have served one well. When it comes to a systems or complexity approach to knowledge mobilization there is never an optimal or best solution. Some may look at sufficiency, good-enough, or adequacy while others may assert a "why fix what's not broken" way of being. Patterns of activity often persist until they present a threat to the viability of the complex form. For teachers and leaders, the challenge that is presented involves a shift in their own mindsets –

away from overcoming resistances toward demonstrating the lack of viability of current foci, actions, are interpretations.

One of the most noteworthy findings is that knowledge mobilization is more contingent on factors related to the behavior of the researchers and educators' context than on the attributes of the research (Landry, Amara, & Lamari, 2001). For instance, researchers may actually do little to share their findings besides publishing them in obscure journals. This find supports the fact that alignment of research and learning practice is actually a social function that is deeply affected by jurisdiction characteristics that are typically reflective of where and how jurisdiction leaders focus their efforts (Cooper & Levin, 2010, p. 358).

### Knowledge to Action Processes

The knowledge-action gap can be broken down into knowledge creation and action (see Figure 3). Knowledge creation represented by the inverted triangle within figure 3 symbolizes the fact that knowledge "becomes more distilled and refined and presumably more useful to stakeholders" (Graham et al., 2006, p. 18). Knowledge application is a cyclical process built while meeting a need through planning, implementing, evaluating, and revising. As leaders strive to successfully align research, policy, and practice they need to be cognizant of how the following components work in harmony to impact the relationship between knowledge creation and action: assessing the barriers and supports within the jurisdiction environment, culture, structure, and human resources; monitoring the intervention of knowledge mobilization strategies, and the degree of use and adoption of research; and evaluating the outcomes of research, policy, and practice alignment (Logan & Graham, 1998; Syed-Ikhsan & Rowland, 2004).
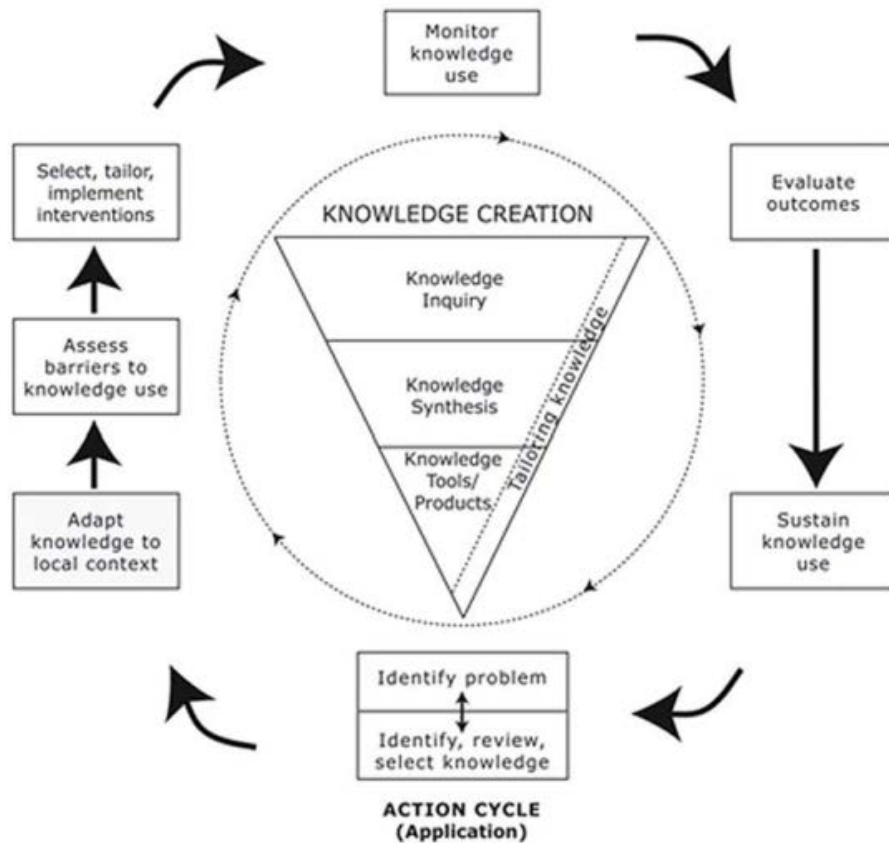
*Figure 3.* Knowledge to Action Process. From "Lost in Knowledge Translation: Time for a Map?" by Graham et al., 2006.

External factors such as regulation and public pressure often act as catalysts and provide incentives that enhance knowledge mobilization. At other times these factors may run counterproductive to what is within the research. What is evident about knowledge mobilization, besides its complexity, is that systemic push (how researchers communicate their findings) and pull activities (uptake strategies undertaken by policy makers and practitioners) that target its supply and demand sides and enhance exchange can strategically address the research-policy-knowledge gap in a variety of settings (World Health Organization, 2006).

Historically, researchers' push efforts have been relatively small within the social sciences. When research is communicated it is often through passive strategies such publishing research articles in journals (Cooper & Levin, 2010). "Attempts to communicate must also compete for the attention of (educators), who are likely to be overloaded with other information" (Pelz, 1978, p. 606). It is paradoxical that the research that addresses knowledge mobilization is often itself not very mobilized. Empirical studies on knowledge mobilization are scattered through the journals of diverse disciplines (Cooper & Levin, 2010; Landry et al., 2001). This dearth of visible research means that the proverbial wheel is continually reinvented as researchers conduct similar studies, or jurisdictions try parallel strategies to the same effect, instead of learning from each other's failures and successes. Whatever researchers or their institutions may do to share their work, the critical point is whether and how research is actually used by policy makers and practitioners to inform and impact practice.

It is important to note that knowledge is not a static entity that is merely disseminated unchanged. Rather it is "dynamic, constantly changing as it is interpreted based on prior experience, recombined with other information and knowledge, and passed on through interactions with others" (O'Day, 2002, p. 299). Greenhalgh, Robert, Macfarlane, Bate and Kyriakidou (2004) developed a unifying conceptual model "intended mainly as a memory aide for considering the different aspects of a complex situation and their many interactions" (p. 594). The model (see figure 4) is divided into six broad categories: (1) the innovation itself; (2) the adoption/assimilation process; (3) communication and influence (social networks that form channels for diffusion and dissemination); (4) inner organizational context; (5) outer organizational context; and (6) the implementation process.

SYSTEM ANTECEDENTS FOR INNOVATION

THE INNOVATION
Relative advantage
Compatibility
Low complexity
Trialability
Observability
Potential for reinvention
Fuzzy boundaries
Risk
Task issues
Nature of knowledge
   required (tacit/explicit)
Technical support

Structure
   Size/maturity
   Formalization
   Differentiation
   Decentralization
   Slack resources

Absorptive capacity for new knowledge
   Preexisting knowledge/skills base
   Ability to find, interpret, recodify,
   and integrate new knowledge
   Enablement of knowledge sharing
   via internal and external networks

Receptive context for change
   Leadership and vision
   Good managerial relations
   Risk-taking climate
   Clear goals and priorities
   High-quality data capture

SYSTEM READINESS
FOR INNOVATION

Tension for change
Innovation-system fit
Power balances
   (supporters v. opponents)
Assessment of implications
Dedicated time/resources
Monitoring and feedback

COMMUNICATION
AND INFLUENCE

DIFFUSION
(informal, unplanned)

   Social networks
   Homophily
   Peer opinion
   Marketing
   Expert opinion
   Champions
   Boundary spanners
   Change agents

DISSEMINATION
(formal, planned)

Resource system

LINKAGE

The innovation

Knowledge purveyors

Diffusion

Dissemination

Change agency

LINKAGE

Outer context

User system

System antecedents

System readiness

Adoption/assimilation

Implementation

Consequences

ADOPTER
Needs
Motivation
Values and goals
Skills
Learning style
Social networks

ASSIMILATION
Complex, nonlinear
   process
"Soft periphery" elements

IMPLEMENTATION
PROCESS
Decision making devolved
   to frontline teams
Hands-on approach by
   leaders and managers
Human resource issues,
   especially training
Dedicated resources
Internal communication
External collaboration
Reinvention/development
Feedback on progress

OUTER CONTEXT
Sociopolitical climate
Incentives and mandates
Interorganizational
   norm-setting and
   networks
Environmental stability

LINKAGE
Design stage
   Shared meanings and mission
   Effective knowledge transfer
   User involvement in specification
   Capture of user-led innovation

Implementation stage
   Communication and information
   User orientation
   Product augmentation, e.g. technical help
   Project management support

*Figure 4. Conceptual Model for Considering the Determinants of Diffusion, Dissemination, and Implementation of Innovations.* From "Diffusion of Innovations in Service Organizations: Systemic Review and Recommendations by Greenhalgh et al., 2004.

Information does not automatically lead to change. Individuals must first have access to it; they must attend to it, and have sufficient expertise to interpret it. Furthermore, action does not necessarily follow. Often motivation, resources, and support are needed (O'Day, 2002). Motivation will not produce results if educators do not know what actions need to be taken.

**Chapter Summary**

If one of the primary ways for system leaders to improve student success is to build the capacity of their teachers to institutionalize best practices, then leaders need to familiarize themselves with how they can mobilization knowledge. They need to know where to find relevant research, understand the research, and understand how it will impact their jurisdiction. They need to know what barriers may impact the uptake of the research findings, including why individuals within their jurisdiction may choose to accept some research and not others, and they need to understand how to overcome these barriers. They need to ensure teachers "receive adequate amounts of information, can interpret that information, and have the ability to focus on what is most appropriate for improving teaching and learning" (O'Day, 2002, p. 302). For there to be a positive learning impact at the student level, leaders should know what to do and how to do it. Leaders will need to apply relevant knowledge and build relational trust while solving complex problems (Robinson, 2011).

Improvement is based on the interpretations and dispersal of information through patterns of interactions as well as on the invention, selection, and recombination of information and strategies to produce improvement. Change research often focuses more on the knowledge and skills a leader needs to bring about change, and less on the behaviors that bring about enhanced teaching and learning. Leaders also need to know how to do what they need to do to have a positive impact on learning at the student level (Robinson, 2011). While much is known about learning, current research has given little consideration regarding the complexity of the knowledge mobilization process. This lack of attention to the complexity of this crucial aspect of organizational change is a critical gap that needs to be explored if jurisdiction leaders want to maximize efforts to transform education.

<center>**Chapter 3: Methodology and Methods**</center>

The purpose of Chapter 3 is to outline the methodology and methods that were used in this study. Grounded in complexity theory, this multiple-case study of four high-performing Alberta school jurisdictions examined the role jurisdiction and school leaders[1] play in mobilizing knowledge about good learning practices within their complex social systems. Through an exploration of the complementarities and synergies between knowledge mobilization and complexity theory, I hoped to determine how a systems or complexity approach can play a role in understanding and enhancing the mobilization of knowledge regarding the alignment of research and learning practice. This chapter describes complexity theory, and the qualitative approach employing the methods and techniques of grounded theory within a multiple-case study. Further detail related to data collection, participant selection, research assumptions, standards for establishing confidence in results, and ethics are also presented.

<center>**Methodology**</center>

While methodology is the discipline or body of knowledge to systematically solve a research problem, methods are the specific research techniques or processes by which to conduct

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[1] The term *jurisdiction leaders* include individuals associated with the jurisdiction central office such as superintendents and midlevel leaders: deputy superintendents, associate superintendents, and assistant superintendents. It is used interchangeably with the term *system leaders*. It differs from the term *midlevel leaders* in that the superintendent is included in the term jurisdiction leaders but not the term midlevel leaders. School leaders includes principals, vice principals, and assistant principals. When referring to all of the above the term *leader* is often used.

<center>36</center>

the research. I took a grounded theory methodological approach, a specific form of ethnographic inquiry that moves beyond mere description of a process, action, or interaction. Grounded theory "serves as a way to learn about the worlds we study and a method for developing theories to understand them" (Charmaz, 2006, p. 10). I believe that existing research and theories about knowledge mobilization do not adequately address the problems faced by jurisdiction leaders as they strive to align research, policy, and practice. Grounded theory, a qualitative research design, facilitates the systematic discovery of concepts and relationships in a variety of data to generate a theory that explains a process, an action or interaction about a substantive topic (Charmaz, 2006; Corbin & Strauss, 2008; Creswell, 2012; Glaser & Strauss, 1967). Rather than taking a fully iterative grounded theory approach, I utilized the constant comparative method which involved the researcher moving in and out of the data collection, coding, and analysis process. I examined the role jurisdiction and school leaders play in mobilizing knowledge about good leaning practices, and explored the complementarities and synergies between knowledge mobilization and complexity theory to determine if this kind of exploration can help us to understand and enhance the mobilization of knowledge regarding the alignment of research and learning practice. My intent was that my research will not only explain the actions of system and school leaders but their interactions among people and events: How leaders take into account the information, its existence, usage, how it travels through complex systems, and the role that this information plays as it moves among, and interacts with, agents and subunits.

While grounded theory was conceived by Glaser and Strauss (1967), the systemic design for grounded research that I draw on is from the later work of Charmaz (1995, 2000), who adopts the methods of grounded theory as useful tools, not as rigid prescriptions that must adhere to Glaser and Strauss' objectivist, positivist assumptions (Jørgensen, 2001). While still

incorporating Corbin and Strauss' (2008) data analysis steps of open coding and axial coding, I

placed priority on the studied phenomenon rather than the methods of studying the phenomenon.

This coding process began with open coding, the creation of initial categories. Then, in order to

develop a theory that interrelates these categories, it proceeded with axial coding, the

identification of a core category and its causal conditions, intervening and contextual categories,

strategies, and consequences (Creswell, 2012). Through this coding process I attempted to

capture what is happening in jurisdictions, constantly being aware that I need to know what

things mean to participants in order to truly understand what they are saying. I was also

cognizant of the fact that what people say is often different from what they do. Furthermore, I

was cognizant that the standpoint from which I started shaped what I saw and what I viewed as

truth and that "the very process of categorizing and coding that lays the basis for the analysis,

also shatters the data and disembodies it from the person who produced it" (Conrad, 1990, p.

1258).This complexity about truth was to be addressed through data triangulation. Gaining

multiple views of the phenomenon strengthened the power of my claims and uncovered hidden

meanings that allowed me to gain deeper understanding of the phenomenon (Charmaz, 2004).

## Complexity Theory

The traditional paradigm of leadership focuses on management and is committed to the

need for control and for predicting the nature and direction of change. This concept of leadership

is built on the notion that systems are machines that can be understood by analyzing and studying

their parts. As public education readies for transformation, models and insights from complexity

theory compel us to rethink some of our core ideas about leadership. For example, complexity

theory calls for a shift "away from individual, controlled views, and towards a perspective of

organizations as complex adaptive systems that enable continuous creation and capture of

38

knowledge” (Uhl-Bien et al., 2007, p. 301). Complexity theory focuses on observing and describing self-organizing, self-maintaining, adaptive, learning systems (Davis & Sumara, 2006). Within such a system, leadership moves from the “isolated, role based actions of an individual to the innovative, contextual interactions that occur across an entire system” (Lichtenstein et al., 2006, p. 2). Leadership is an emergent event, an outcome of relational interaction, where leaders are people who influence the process of transformation by fostering conditions rather than mandating change. Leaders recognize that commitment, creativity, and innovation require support from others and that relationships are paramount in building that support (Keene, 2000). Change within schools and jurisdictions results from dynamic interactions in which teachers and leaders play a prominent role in creating that change – a world where leaders mobilize people to seize new opportunities and tackle tough problems, such as improving instructional practice. Whilst providing direction, leaders facilitate and create opportunities that make it possible for agents and subunits in the system to co-create the route taken to achieve a vision. Mobilizing knowledge to align research and learning practice becomes fundamental as systems co-create organizational change.

By understanding network theory, school leaders can see how relationships are configured in order to mobilize knowledge. Network theory, a branch of complexity research, focuses on the relational dynamics and communication patterns within adaptive, learning forms (Barabasi, 2003). Comparisons of the inner connectivity of many different complex unities have revealed four general categories of networks: centralized, distributed, decentralized, and fragmented (see Figure 5). Each network has a specific shape, advantage, and disadvantage. The centralized network is efficient at communication but is only as robust as the central hub. The distributed network has tight local connectivity but no systemic connectivity and, thus, is highly

resistant to change and inefficient at communication. Fragmented networks lack a meta-connectivity and, as such, are typically ignored in discussions of system dynamics. Decentralized networks are the most important structure with regard to discussions of learning as this "structure manifests in all complex living/learning systems" (Davis et al., 2012, p. 377). As such, in order to mobilize knowledge to align research and learning practice, Alberta school jurisdiction leaders need to ensure movement towards rather than away from decentralized networks (see Figure 6).
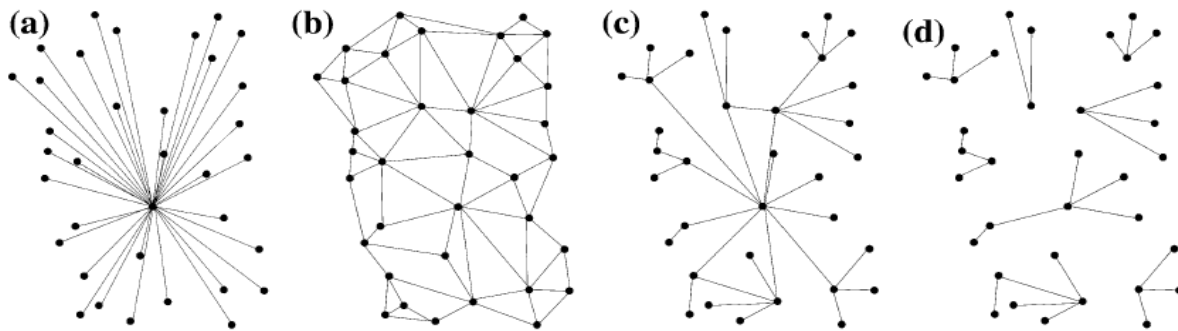


*Figure 5.* Four Types of Network Structures: (a) centralized, (b) distributed, (c) decentralized, and (d) fragmented. From "Understanding school districts as learning systems: Some lessons from three cases of complex transformation," by Davis et al., 2012, p. 376. Used with the authors' permission.

Decentralized networks face an ever present possibility of transfiguration into another network structure as a result of trigger pressures, such as inadequate or overabundant resourcing, lack of accountability, and erosion of collective purpose, to name a few. However, trigger pressures are also necessary, as they cause the disequilibrium that compels decentralized networks to adapt and learn.

I believe network structures, the patterns of interaction and the relationships between individuals and organizational goals and change is part of a larger complex adaptive system. This

system needs to be more fully understood if Alberta school jurisdiction leaders are to create and mobilize knowledge to align research and learning practice within school jurisdictions.
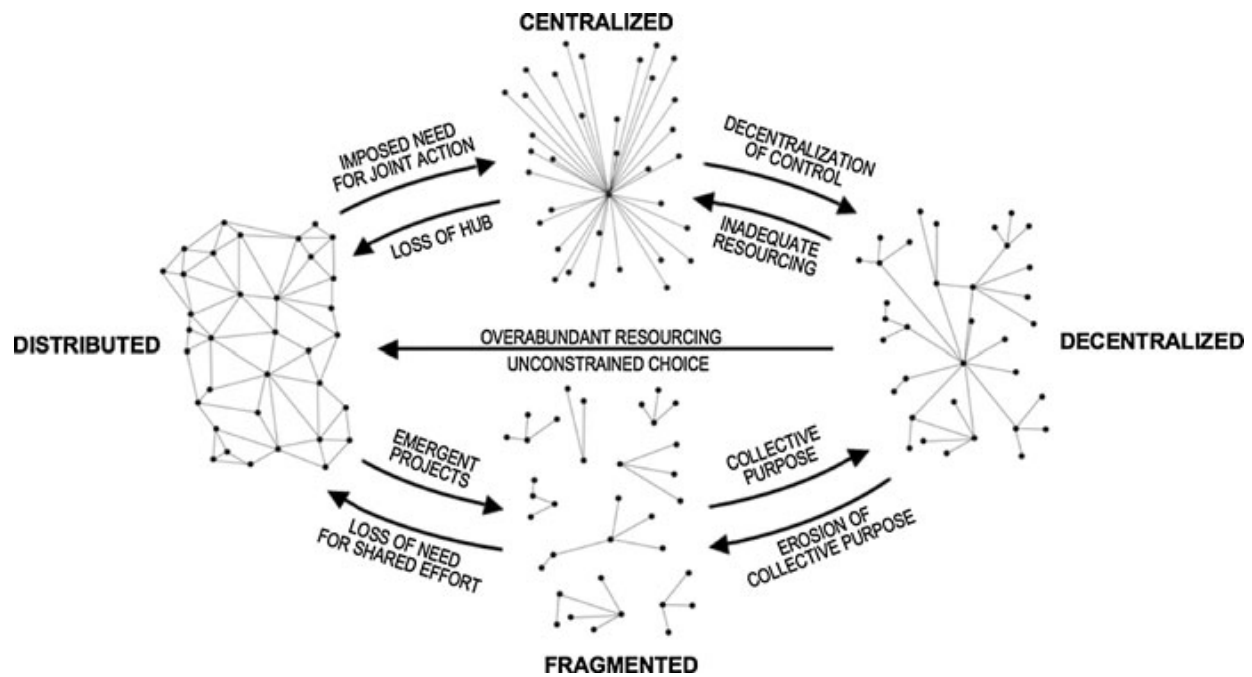


*Figure 6.* Triggers for Movement among Different Network Structures. From "Understanding school districts as learning systems: Some lessons from three cases of complex transformation," by Davis et al., 2012, p. 376. Used with the authors' permission.

While an understanding of the professional learning networks is vital to system improvement, "no single theoretical model, among those currently available, is a sufficiently powerful, descriptively, rhetorically, inferentially or in its application to real contexts, to provide a framework" (De Laat & Lally, 2003, p. 7). If one were to ignore the complex nature of praxis in a networked environment and simplify a jurisdiction's learning process, the process would start with a gap between theory and praxis that emerges into a problem for teachers, principals, or system leaders. The problem may involve a lack of knowing on the part of either teachers or school and jurisdiction leaders regarding what actions to take in order to resolve the problem.

Typically, leaders within the system bring principals and or teachers together to attempt to address a problem, often formulating or sharing knowledge claims (conjectures, assertions, arguments, or theories) regarding resolutions to the problem. These claims may be integrated into principals' and/or teachers' practice or may lead to organizational learning when the claims are shared, vetted, and evaluated collaboratively by jurisdiction teachers in a theory-praxis conversation. These conversations may lead to rejection of implicit or explicit theories of action that are then manifested in the values and norms that people within the jurisdiction use to direct their attention and action in their daily work (Argyris, 1995; McElroy, 2003). While I have simplified the process of professional learning within a school jurisdiction, the complexity of praxis has a significant impact on how jurisdiction leaders produce and integrate knowledge into their organization. Given this complexity, jurisdiction leaders need to take a multi-method approach to converge theory and praxis, which includes implementing actions that mobilize knowledge. They also need to take into account the following principles that allow for system expectations and school variability:

- Instructional improvement is primarily about the depth and quality of student work.

- Common work among principals and teachers across schools is a source of powerful norms about system-wide instructional improvement.

- Sustained instructional improvement is a process of bilateral negotiation between system-level administrators and principals.

- Each school possesses a unique bundle of attributes that manifest as instructional improvement problems.

- Principals are the key actors in instructional improvement.

- Jurisdiction leaders need to exercise control in areas that are central to the decentralized strategy.

- Jurisdiction leaders need consistency of focus over time with regard to detailed strategies of instructional improvement (Elmore & Burney, 1997, pp. 17-21).

The focus of professional learning networks must remain on instructional improvement that manifests in system wide improvement. Such learning, involving awareness, planning, implementation, and reflection within a collaborative environment, drives instructional change. Jurisdiction leaders need to set clear expectations, and then decentralize, intentionally blurring the space between management of the system and the activities of staff development (Elmore & Burney, 1997). Such a complex and evolving harmony between central authority and school site authority allows for control in areas that are essential to the decentralized strategy. Effective professional learning networks maintain consistency of focus over time, and couple data-driven decisions with focused interaction and capacity-building of people and groups, while recognizing the uniqueness of each site. "Even though a decentralized system of schools no longer mandates programs for every school to implement, it still maintains a strong interest in spawning innovations and diffusing effective improvement efforts" (Bryk, Sebring, Kerbow, Rollow, & Easton, 1998, p. 281). Even though individual schools name the problem, plan solutions, and gain local support, professional learning still requires a systemic approach that is based on the assumption that policies and practices in one level of the system affect others (Fullan, 2000).

To develop an investigation that seeks such a deep and complex understanding of individuals, events, policies, and places, I used case study, an ideographic research strategy. When considering the selection of an appropriate research strategy "one should consider the repertoire of empirical research strategies from a pluralistic rather than a hierarchical perspective

as each strategy is best suited to a different set of conditions" (Yin, 1981, p. 98). Different

strategies will therefore be favoured under different conditions. The need to use case study arises

whenever "an empirical inquiry must examine a contemporary phenomenon in its real-life

context, especially when the boundaries between phenomena and context are not clearly evident"

(Yin, 1981, p. 98). Case study is also best suited to practical issues where the experience of the

subjects is central and the context of the experience is decisive (Benbasat, 1984). Case studies

provide the opportunity to collect detailed descriptions of situations, events, people, interactions,

and behaviours in context and, thus, have the potential to help the researcher understand how

and/or why things happen (Gagnon, 2010). While the findings from case studies are not normally

generalizable, they can refine theories by adding details and establishing limits of a

generalization (Gagnon, 2010). These benefits of case study make this design particularly

relevant to my research topic because the phenomenon of knowledge mobilization is a real life,

practical problem experienced by educators in a context within which it is both a feature and an

effect. The details about complex system conditions and leader interactions that I identified

through this approach helped me to understand how knowledge is mobilized to align research

learning practice in high-performing school jurisdictions.

Two types of case study are possible for exploratory purposes: single and multiple-case

designs. Multiple-case designs are appropriate when the same phenomenon exists in a variety of

situations and provides a basis for replicating and confirming results, thereby enhancing

credibility and dependability (Yin, 1981). Thus, this study looked at four Alberta school

jurisdictions that mobilize knowledge to align research and learning practices. I believe that a

better understanding of this phenomenon will allow jurisdiction leaders to carry out their

objectives of improving staff learning and student success with a more informed perspective. In

hopes of bringing to light differences, relationships, and patterns related to the phenomenon of

knowledge mobilization for research and learning alignment, I took a qualitative, logico-

inductive approach to analysis (Mertler & Charles, 2005). My objective was to enhance

transferability: How and in what ways is knowledge mobilized effectively and, then, how can the

findings of my study be applied in similar contexts and settings (Bloomberg & Volpe, 2012).

The following section of this chapter describes case and multi-case study methodology and is

followed by an explanation of specific methods and research considerations, including

description of participants, data collection, data analysis, and issues related to trustworthiness

and ethics.

## Case Study

As an educational leader, I utilize research and inquiry so that my practice will benefit.

Stake (1978) states that one of the more effective means of adding to understanding is through

the words, illustrations that capture the natural experience acquired by ordinary people. "In

addressing holism, complexity theory suggests the need for case study methodology, qualitative

research and participatory, multi-perspectival and collaborative (self-organized), partnership-

based forms of research, premised on interactionist, qualitative and interpretive accounts"

(Lewin & Regine, 2003). In this sense, complexity theory is premised upon the view that our

reality is socially constructed. It assumes that an individual's constructs are influenced by his or

her context, and are subject to influence by prior knowledge, peers, learning experiences, and

interactions with others. Given that I accept that a particularly powerful way to understand the

phenomenon of knowledge mobilization is through the lived experience of participants, a

qualitative case study approach was an appropriate design for the research I proposed.

Specifically, case studies allow researchers the ability to maintain the holistic and meaningful

45

characteristics of real-life events, policies, and practices and, by their nature, are sensitive to historical specificity and highlight complexity, diversity, and uniqueness (Verschuren, 2003).

The methodological status of the case study is still somewhat suspect (Gerring, 2007; Verschuren, 2003; Yin, 2003). Furthermore, there is lack of agreement on the relative strengths and weaknesses of case study research, despite the fact that both positivist-orientated researchers such as Yin (2003) and interpretivist-orientated researchers such as Merriam (1998) strongly support and utilize case study. The greatest advantage of case study research is the possibility of its depth, resulting in a rich holistic account of a phenomenon or entity (Ary, Jacobs, Razavieh, & Sorensen, 1996; Merriam, 1998). On the other hand, this advantage may also be considered its weakness. Although case studies typically have depth, they may ultimately lack breadth (Ary et al., 1996). Ironically, while there are questions regarding case study data legitimacy, "much of what we know about the empirical world has been generated by case studies, and case studies continue to constitute a large portion of the work generated by the social science disciplines" (Gerring, 2007, p. 8). Given that case studies add to existing experiential and humanistic understanding, they are not only likely to continue but will continue to have an epistemological advantage over other inquiry methods (Stake, 1978).

Many criticisms of case study are based on incorrect assumptions and on misconceptions and ambiguities that originate from a lack of clarity of its purpose and confusion over what constitutes a case study (Stoecker, 1991). The problem with defining case study is, in part, due to the fact that case study may refer to several very different epistemological entities including methodology, method, approach, the empirical object of a case study, the way we look at it, the research methods that are used, and the adequacy of the results obtained (Bassey, 2003; Verschuren, 2003). Some understand it as a study of a single case, rather than as a way of doing

the research. Wolcott (2002) argues that case study is neither a method nor a design feature, and identifies it as a form of reporting. Stoecker (1991) classifies case study as a design feature or frame that determines the boundaries of information gathering regarding a certain historical period of a particular social unit. In this view, it is important to note that holism means looking at the whole object, and not at the object as a whole. For others, holism revolves around the examination of a phenomenon or entity in its entirety. For Yin (2003), holism is related to the number of units of analysis. Those who oppose holism, such as Swanborn (1996), argue that there are many things in case studies that will not be of use or interest to the researcher and, therefore, holism is not a key characteristic of case study design. My view of case study aligns more closely with Yin's (2003) definition which situates case study as a research method arising out of the need to understand complex social phenomenon, in this situation, how jurisdictions mobilize knowledge.

Regardless of this contention related to definitions and purposes, the most frequently heard objection to case study is its low generalizability due to its focus on only one or two cases (Merriam, 1998; Verschuren, 2003; Yin, 2003). Bishop (2010) asserts that approaching case study using multiple cases addresses this concern because the researcher's objective is to gather similar (and potentially generalizable) findings across settings. Miles and Huberman (1994) assert that multiple-case sampling provides more compelling evidence:

> By looking at a range of similar and contrasting cases, we can understand a single-case finding, grounding it by specifying how and where and, if possible, why it carries on as it does. We can strengthen the precision, the validity, and the stability of the findings. (p. 29)

Providing information from a number of sources and over a period of time thus permits a more

holistic study of complex social networks and of complexes of social action and social meanings

(Kennedy & Luzar, 1999).

The lack of consensus that exists in defining case study is interwoven with confusion

over the purpose of case study research (Stoecker, 1991; Verschuren, 2003). I tend to align with

Yin (2003), who suggests three purposes: exploratory, explanatory, and descriptive. This is

somewhat similar to Stake (1995) who identifies case studies as intrinsic, instrumental, or

collective. Stake (1995), uses the term intrinsic in regard to better understanding a particular

case, whereas instrumental is used to accomplish something other than understanding a particular

situation. It provides insight into an issue, explanation, or helps to refine a theory. In this context,

the case is of secondary interest; it plays a supportive role, facilitating our understanding of

something else. Kennedy and Luzar (1999) contend that case studies can be utilized for two

additional purposes: prediction and understanding. Prediction differs from explanation in that

"prediction only requires a correlation, whereas explanation cries out for something more . . . . It

is only too obvious that it is perfectly possible to predict well without explaining anything"

(Blaug, 1992, p. 4). Explanations are usually established within the framework of general laws

and involve the same rules of logical inference as prediction. Explanations, however, come after

events while predictions occur before events (Blaug, 1992; Kennedy & Luzar, 1999). It is the

growing demand for understanding that drives exploratory, explanatory, and descriptive case

study. As Houle (1986) acknowledges, "the known explanatory theories, much envied by the

social sciences, were all preceded by descriptive theories upon which they could base

themselves" (p. 45). As a result, case studies are increasingly accepted and utilized by

researchers, not as a replacement for theoretical or statistical approaches or more generalizable

explanatory or predictive research, but as contextual complementary research that enhances understanding (Kennedy & Luzar, 1999). If researchers fall back on their concerns and circumvent case study, they would be retreating to methodological monism and limiting research methodology to those approaches that value tools and prediction over explanation or understanding.

Reviewing criticisms of case study, one can conclude that the primary concern comes from two directions: the lack of protocols available for conducting good case studies, and the lack of provision for scientific generalization, which I believe I have addressed through the use of a multiple-case study approach; mainly the involvement of four school jurisdictions as described in the research method section below (Kennedy & Luzar, 1999). My intention was that, by addressing proper protocols, I would demonstrate that case study[2] is a legitimate research methodology. As cited earlier, case study is the method of choice when the phenomenon under study is not readily distinguishable from its context. The inclusion of context means that the study has more variables than data points. Thus, I did not rely on a single data collection method but needed to use multiple sources of evidence that would ultimately converge in data triangulation (Kennedy & Luzar, 1999).

The criticism relating to the investigator's failure to develop sufficient operational standards aligns with criticisms relating to lack of rigor in the collection, construction, and analysis of the empirical materials. This lack of rigor is often linked to the problem of bias (Kennedy & Luzar, 1999; Yin, 2003). Case studies use replication logic, not sampling logic, as

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[2] From this point forward the term *case study* and *multiple-case study* are used interchangeably.

relevance rather than representation should be the criteria for case selection. When this occurs, case studies, like scientific experiments, are generalizable to theoretical propositions (Yin, 2003).

The next section on methods, identifies the appropriate operational procedures and the domain toward which the study's results are generalized (transferability), and demonstrates that the findings are credible and can be repeated with the same results (dependability). Yin (2003) identifies five components of case study research design that I focused on: a study's question(s), a study's propositions, a study's unit(s) of analysis, the logic linking the data to the proposition, and the criteria for interpreting findings.

## Research Methods

There are two important aspects of case study design: the case study protocol and the data collection processes (Yin, 2003). The protocol includes the purpose, the questions, key features of the case study method (the instrument, procedures, and general rules that should be followed in using the instrument), and the organization of the protocol (procedure of how to carry out the field work and the analysis plan). While the protocol increases the dependability of the case study, it also reminds the investigator what the case study is about and helps the investigator to carry out the case study (Kuo, Dunn, & Randhawa, 1999; Yin, 2003).

I used grounded theory research methodology to study data from the case study and to drive data acquisition activities within and outside the case study. The methods of grounded theory offer the researcher systematic and flexible guidelines for collecting and analyzing data to construct theory grounded in the data itself (Corbin & Strauss, 2008; Glaser & Strauss, 1967). I decided to use Glaser's (1992) *emerging* grounded theory approach, which focuses on creating conceptual frameworks or theories through the connection of categories from the data. Hence, the categories are directly 'grounded' in the data. This approach is different from an *objectivist*

50

grounded theory approach, in which the researcher takes the role of a dispassionate, neutral observer who remains separate from the research participants and analyzes their world as an outside expert (pp. 187-188).

Beginning with my prior knowledge and expertise, I reviewed the literature on knowledge mobilization and complexity theory. From there, data collection occurred in stages and was analyzed using the tools of emergent grounded theory. Initial codes were created, a theory was constructed, and further review of the literature was completed and compared to the findings. Finally, a grounded theory was presented to explain how Alberta school jurisdiction leaders mobilize knowledge to align research and learning practice within school jurisdictions.

The following section outlines the key components of the proposed grounded theory research method, including data collection procedures and sources. Interviews, surveys, document analysis, and field notes played a prominent role in the data collection and analysis phases, and in the conception of the findings of the research. At the end of the chapter I delved into how considerations of trustworthiness and ethics relate to the entire study.

**Data Collection**

A major strength of the case study approach is that it provides the researcher the opportunity and flexibility to use many different sources of evidence (Yin, 1981). In my research, two types of data were collected from three groups of participants (see Table 1). Interviews and surveys focused on the complexity of knowledge mobilization, the culture the jurisdiction leaders are attempting to foster, and how they identify, implement, and support the ethos of the preferred culture.

Table 1

Data Sources and Participant Type

| Data Sources | Interview | Survey |
|---|---|---|
| Superintendent | X | |
| Midlevel Leaders | X | |
| Principals | | X |

*Note. Proposed data source collection from three groups of participants with midlevel leaders being comprised of deputy superintendents, associate superintendents, and assistant superintendents.*

I collected field notes related to my experience and perceptions and to the formalized documents found on jurisdiction websites. This allowed for the triangulation of data. The analysis of documents, such as vision and mission statements, policies, administrative procedures, three-year jurisdiction plans, annual education results reports, organizational structure charts, and documentation on professional learning within the jurisdiction, as well as communication to staff and stakeholders, such as website messaging, provided clarity in terms of linkages to research, the preferred culture, and knowledge mobilization as identified in the interviews and surveys. Document content was explored to see how it related to the ethos of the jurisdiction. I asked: does the content within the documents align with the knowledge mobilization culture within the jurisdiction and, if so, how? What value do documents bring to the culture? Are they frameworks that provide structures and guidelines that enhance knowledge mobilization, or are they communication tools that contain descriptions of the culture and communicate what the desired ethos is or should be?

**Research Participants**

The participants involved in the research were purposely selected from four Alberta school jurisdictions. In order to recruit educational leader participants from a cross section of the Alberta education system, superintendents, midlevel leaders (deputy superintendents, associate superintendents, and assistant superintendents), and school-based principals were invited to be part of the research. It was my assumption that these participants would provide insight into the workings of their respective jurisdiction. The prospective participants weren't in any way intended to be representative of a broader population, rather, they were agents within a larger provincial system.

**Method of Jurisdiction Selection**

To determine the four sample school jurisdictions, I employed a purposeful non-probability sampling method. First, I acquired a list of jurisdictions that employ active CASS members. Second, I used the October, 2012 provincial accountability pillar results to select high-achieving and improving jurisdictions to ensure data-rich case samples (see Appendix C). The provincial accountability pillar evaluates jurisdictions based on the following provincial goals: high-quality learning opportunities, excellence in student learning outcomes, and highly responsive and responsible education systems. These goals contain measures regarding: safe and caring schools; student learning opportunities; student learning achievement; preparation for lifelong learning, world of work, and citizenship; parental involvement; and continuous improvement. All of the accountability pillar measures are analyzed and reported in terms of both overall achievement and improvement as compared to provincial results and the jurisdiction's previous performance. Starting with all 62 Alberta Jurisdictions, the 2012 provincial accountability pillar's measure category evaluations were used to eliminate those

Jurisdictions with evaluations that were not good or excellent. This list was further refined using achievement and improvement measures in order to ensure that the selected sample contains not only high-performing jurisdictions but also jurisdictions that have improved significantly. These two types of jurisdictions were chosen because of my research's intent to understand the knowledge mobilization phenomena. The 2013 provincial accountability pillar results were used to confirm that the four sample school jurisdictions continued to contain high to very high achievement and continued to show improvement or significant improvement. The 2013 accountability pillar was not used as the primary data for sample selection as grade nine Provincial Achievement Tests and Diploma exams were significantly impacted due to the June 2013 flood. Third, to ensure appropriate sample selection, Alberta Education officials were identified and contacted and asked to provide a list of jurisdictions that they felt effectively align research, policy, and practice. The list I created in steps one and two above and the list I was provided with in step three were compared to see which jurisdictions appeared on both lists. More than four jurisdictions were identified; the five that ranked highest on accountability pillar results were selected. While the provincial accountability pillar may not be ideal in identifying jurisdictions that excel at knowledge mobilization, I was compelled to utilize it given the lack of other sources that provide evidence of jurisdictions' knowledge mobilization. Once jurisdictions were selected, jurisdiction superintendents were contacted to elicit permission for jurisdictional involvement in the study. One superintendent opted not to have his jurisdiction involved, while the remaining four provided permission for jurisdictional involvement. Following approval, interview requests were sent to superintendents, and midlevel leaders. Survey requests were sent to principals. All participants signed consent to participate forms. Interview and survey response was received form two of the four jurisdictions and this data were used to create a portrait of

these two jurisdictions. Interview responses from the superintendent and system leaders of the remaining two jurisdictions were used to support and challenge findings from the other two jurisdictions.

**Interview and Survey Questions**

Since this study investigated the complexity of overlapping roles and responsibilities between jurisdiction and school leaders, targeted interview questions for superintendents (see Appendix D), midlevel leaders (see Appendix E), and survey questions for school-based principals (see Appendix F) were utilized.

**Data Collection Timeline**

The preliminary planning, including jurisdiction and research participant selection and interview and survey question development was finalized by September 2014. The preliminary planning also included acquiring approval through the Conjoint Faculties Research Ethics Board of the University of Calgary. Once ethics approval was received, I requested approval from the four superintendents to conduct research within their respective jurisdictions, via telephone. Written follow up included a letter of introduction to the research. Following superintendent approval, I acquired midlevel and school leader email and telephone contact information from the superintendent. I then contacted midlevel and school leaders via email and telephone, to solicit involvement in the study in the fall of 2014. The purpose of the study and my plans for using the results from interviews and survey were shared with all participants. Informed consent was collected prior to conducting interviews and collected from survey participants as part of the online survey.

Interviews took place at a time and in a location free from distraction and convenient for participants. Interviews were digitally recorded for later transcription. Surveys were also

completed in the fall of 2014 at the participants' convenience. The survey consisted of an electronic questionnaire developed and administered through SurveyMonkey.com, a leading provider of web-based survey solutions. Participants were made aware of the Patriot Act as the contents of SurveyMonkey are housed in the United States. The link for the surveys was sent via email as part of the Principal Invitation to Participate in Research letter. A follow up phone conversations occurred where uptake was not sufficient. Due to limited response from two jurisdictions a descriptive portrait was only developed for two of the four jurisdictions. The winter was spent collecting documents and analyzing the data.

**Data Analysis**

The first task in data collection and analysis is to determine and define the units of analysis for investigation. This was done by reflecting on the core purpose of my study: by examining the role jurisdiction and school leaders play in mobilizing knowledge about good learning practices and exploring the complementarities and synergies between knowledge mobilization and complexity theory to determine how a systems or complexity approach can play a role in understanding and enhancing the mobilization of knowledge regarding the alignment of research and learning practice within the Alberta context.

Given that I am interested in questions of culture, particularly shared patterns of behavior and belief about transformational change within school jurisdictions and, more specifically, themes related to the work of leaders in aligning research and learning practice, it makes sense to use grounded theory methods to collect and analyze case study data. The interview and survey data, field notes, and documentation collected in this study were limited by the short period of time I had to undertake the research. Data was analyzed through a multi-step process that began with summarizing the demographic information of participating school jurisdictions (see

Appendix H). Interview data was then prepared by transcribing the text. Verbatim transcripts, survey responses, and raw field notes constituted the raw data, the unprocessed complexity of the study. Data analysis began with a review of the data, which involved reading to obtain a general sense of the data, collecting key ideas, and organizing the data; coding, interpretation, and determining which of the findings I would present in the dissertation.

By coding I refer to the process by which words, phrases, and paragraphs within the text obtained through the interviews, surveys, field notes, and documents are broken down, examined, compared, conceptualized, and categorized through the isolation and labeling of key descriptors to form common thoughts and broad themes. These broken down words were analyzed for meaning via segmentation based on questions such as: what is being communicated here and what does this mean?

The codes represented relationships, commonalities, patterns, and differences across the data, and evolved as I reflected upon the quintessence of the language used, the redundancy of language, and the power of the language. The quintessence of the language represents beliefs and practice while the substance of the language represents similar ideas which are used repeatedly. In this vein, repetitions communicated on numerous occasions in a similar manner using varied words were considered redundant thoughts. The power of the language used signified the intensity of the belief or practice being described or interpreted. I used the codes to develop a more general picture of the data by searching for connecting threads and patterns among the excerpts within those categories and for connections among the various themes. This process allowed me to juxtapose and reduce codes until I synthesized an adequate description of where the interviewee or individual being surveyed was coming from and their perspectives about their work and the work and culture of the jurisdiction. Juxtapose refers more to the physical

manipulation of data, while synthesis implies conceptual interpretation. This finalized meaning was a resultant synthesis of the interpretation of the collection of data as it relates to the research question.

Qualitative research is inductive and conclusions and themes emerge through the course of data collection and analysis. Sergiovanni (1995) cautions that even if jurisdictions and or schools adopt innovations, there is no assurance that they adopt them in more than just name. In addition, schools often adopt innovations that are not implemented, or are fashioned so that they are not different from the way things were, thus making the change hardly noticeable. It was my intention to fully explore the phenomenon of knowledge mobilization, in hopes of not only determining what leadership strategies are effective in aligning research and learning practice, but also to learn about how leadership strategies can avoid such superficial implementation and, ideally, strengthen capacity throughout complex and distributive educational networks.

### Researcher Assumptions

This section lists the assumptions I brought to the study and understand to be true. While I took them for granted, explicitly stating them provides relevant context.

- The constructivist philosophical stance informed this multiple-case study. It provided a foundation for the process and it grounded the methodological logic and criteria.
  - A system's knowledge arises in its history of interactions within a grander context. Thus, much of human knowledge is socially constructed and contingent upon human practice.
- Those jurisdictions identified as being high performing were open to participating in the study and participants engaged thoroughly and honestly in the interview and the survey.

- Jurisdiction leader participants are cognizant of the dimensions within CASS's *Alberta Framework for School System Success* and used them to inform their practice.

- Study participants considered transferring explicit and tacit knowledge as an important process for improving staff learning and student success.

- Key documents were posted on jurisdiction websites.

- Documents containing organizational vision, goals, strategies, and procedures represented realities within the jurisdiction and guided the work of the jurisdiction.

## Trustworthiness

As a qualitative researcher I sought to understand social phenomena and represented it in a transparent and credible fashion. While the trustworthiness of quantitative research is determined primarily by assessing its validity and reliability, the trustworthiness of qualitative research is ascertained by assessing its credibility and dependability (Bloomberg & Volpe, 2012; Elder & Miller, 1995; Mertler & Charles, 2005). Credibility parallels internal validity and addresses the inquirer's success at providing assurances that his or her presentations and reconstructions are congruent with those of the participants' views. It can be enhanced via prolonged engagement; triangulation of sources, method, and theory; and peer debriefing. Care was taken to include an appropriate amount of direct quotations in the findings so that readers would see that interpretations followed from interviews and surveys. Dependability parallels reliability and requires the inquirer to demonstrate that the research process is logical, traceable, documented, and that it accounts for the variability in findings. Lincoln and Guba (1985) add two criteria one can use to determine the trustworthiness of qualitative inquiry: transferability and confirmability. Transferability parallels external validity and addresses the issue of generalization by ascertaining whether the researcher has provided sufficient information to

allow subsequent readers to judge the applicability and degree of similarity of the current study to other cases where the findings might be transferred. Finally, confirmability is synonymous with the traditional notion of objectivity and calls for the researcher to establish that the data accurately represents the views of the participants and that the data is not merely a figment of the researcher's imagination (Guba & Lincoln, 1994, p. 114). As the researcher, these components were paramount in my interpretations and development of trustworthy findings that, ultimately, can be utilized by leaders as they attempt to mobilize knowledge.

## Ethical Considerations

Given my previous role as a director on the CASS executive, a key criterion of trustworthiness that impacted my ethical considerations was my inability to remain neutral, free from bias in the research (Sandelowski, 1986). Neutrality refers to the degree to which the findings are a function solely of the informants and conditions of the research and not of other biases, motivations, and perspectives (Guba, 1981). CASS is organized into six zones, representing different geographic regions of the province, and my director role was to represent zone six (CASSIX). While jurisdiction autonomy and self-governance outside of CASS membership adds to the level of neutrality that complexity science accepts; my participation in the provincial knowledge-producing system and CASS's Alberta Framework for School System Success must be taken into account. In fact, as a complexity researcher, I have an obligation to be attentive to my complicity in the phenomena being studied (Davis, 2008).

My study promoted research integrity and accountability by ensuring: a high level of rigour; complete and accurate records of data, methodologies, and findings; thorough and accurate references; obtainment, where applicable, of permission for the use of all published and

unpublished work; acknowledgement of all contributors; and management of any real, potential or perceived conflict of interest (Council of Canadian Academies, 2010).

This study was guided by the ethical principles of the Tri-Council Ethics Framework and expressed the common standards, values and aspirations of the research community across disciplines. In anticipation of submitting an application for ethics approval to the University of Calgary's Conjoint Faculties Research Ethics Board (CFREB), I completed the mandatory *Ethical Conduct for Research Involving Humans* online tutorial. I attached my certificate of completion to my ethics application form when I submitted it prior to beginning my field research.

All interviews and surveys were guided by the following ethical principles from the Tri-Council Ethics Framework: respect for human dignity, respect for free and informed consent, respect for vulnerable persons, respect for privacy and confidentiality, respect for justice and inclusiveness, and balancing harms and benefits (Canadian Institutes of Health Research, Natural Sciences and Engineering Research Council of Canada, & Social Sciences and Humanities Research Council of Canada, 2010).

With regard to seeking prospective participants, the term "consent" means free, informed, and ongoing consent. It preceded collection of and access to research data in order to maintain respect for persons. Such respect for persons honoured the commitment to protect the anonymity and confidentiality of participants and ensured that the principles set out in this proposal were not compromised.

Confidentiality of data was maintained throughout the study. Only my dissertation supervisor and I had access to raw data. The data gathered in the study was securely stored at a location, to which only I had access. All data gathered was kept in strict confidence, and utilized

only for the express purpose of the study. It may be kept for up to five years for the potential of publication beyond my dissertation, which may include articles in journals and reports in professional and/or academic presentations, web postings reports, articles, or book chapters. Electronic data will be permanently deleted and paper data will be shredded to safeguard privacy and confidentiality.

To ensure anonymity, where possible, data was aggregated across participants and jurisdictions to protect the identity of participants and jurisdictions and pseudonyms were used in all published materials. Respect for persons also extended to informing participants about what information would be collected and for what purposes, indicating who would have access to the information collected, and describing how confidentiality and anonymity would be ensured. Such information included a statement that informed participants that I would be publishing findings in my dissertation and potentially in journals and in reports for professional and/or academic presentations, web postings reports, articles, or book chapters, and that I would acknowledge their contributions (Council of Canadian Academies, 2010).

## Chapter Summary

Alberta school jurisdictions are complex social systems that require a holistic approach for understanding their phenomenon in context. This chapter began with explaining how and to what extent school jurisdictions might be understood as complex systems, how network theory offers value to interpreting and informing organizational change, and how professional learning can create dynamic interactions that play a prominent role in innovation. The chapter has highlighted grounded theory methodology and the rationale for choosing a multi-case study within a qualitative framework. The methods section explained that the cases are four high-achieving Alberta school jurisdictions, and participants included superintendents; midlevel

leaders and principals. I wrote about how data was collected through interviews with central office leaders, surveys of principals, examination of formalized documents available on jurisdiction websites, and field notes. My research assumptions were explicitly stated to provide relevant contextual understanding. The chapter closed with a description of practices to safeguard ethics and considerations that strengthening the research credibility and dependability.

While the participants' perspectives cannot be generalized to all jurisdictions, their stories can inform others of the contextual interactions that occur across an entire system and influence the process that fosters the co-creation of organizational change. The following two chapters present the context and findings of the study. Chapter 4 begins with an overview of each school jurisdiction.

**Chapter 4: The Cases**

This chapter describes the four high-performing Alberta school jurisdictions comprising the cases within this study given that the unit of analysis is at the level of the jurisdiction. I have taken proactive care to protect the confidentiality of the school jurisdictions and the individuals who contributed to this research. As such, each jurisdiction has been given a pseudonym based on Dutch cities, near my place of birth: Amersfoort, Hoogland, Leusden, and Utrecht. My portrait of Amersfoort and Hoogland goes into greater depth in Chapter 5 given the additional data collected from principal surveys. Superintendent interviews of Leusden and Utrecht are used to support and challenge the findings brought forth from interviews, surveys, and data analysis of Amersfoort and Hoogland. I have included a brief description of Leusden and Utrecht in Chapter 4 as well. Interviewees were given pseudonyms to maintain confidentiality with the first letter of the name corresponding to the first letter of the jurisdiction for ease of reading (see Table 2). From this point forward, any specific reference to the school jurisdictions or quotes from jurisdiction leaders will reflect the aforementioned pseudonyms. The following section will include a description of the school jurisdiction's settings, and portrayal of the participants who volunteered their time for this study. Data such as the number of schools, staff, and students have been rounded to the nearest ten, 100, and 1000 respectively, to assist in protecting confidentiality. Further details related to demographic data and participant profiles are listed in Appendix H.

For this study, the superintendent of all four jurisdictions was interviewed. As the highest ranking official in a jurisdiction, the superintendent is largely a short-term tenure, partly because the position is largely filled by senior educators, many of whom acquire the position when they are over the age of 50 and are thus close to or eligible for retirement. Within Alberta's 61 school

jurisdictions, the majority of superintendents have less than five years' experience, and according

to the executive director of the College of Alberta School Superintendents, 40 of the 61 current

superintendents have been hired after September 2010 (B. Litun, personal communication,

November 5, 2014). Of these 40 new hires, 14 superintendents were hired in the 2010-11 school

year and on November 7, 2014; the College of Alberta School Superintendents website contained

27 announcements of new superintendent and midlevel leaders being hired during January 2014

and November 2014. Due to the ageing workforce and high retirement rates it's not surprising

that each of the four jurisdictions has a relatively new superintendent, ranging from two to five

years' experience within their role as superintendent.

Table 2

Interviewee Pseudonyms

| Jurisdiction | Position | Pseudonym |
|---|---|---|
| Amersfoort | Superintendent | Abraham |
| | Associate Superintendent | Amber |
| | Associate Superintendent | Adam |
| | Associate Superintendent | Aaron |
| | Associate Superintendent | Ann |
| Hoogland | Superintendent | Harper |
| | Associate Superintendent | Henry |
| | Associate Superintendent | Harold |
| Leusden | Superintendent | Larry |
| Utrecht | Superintendent | Ulysses |

Directors are classified as midlevel leaders in some jurisdictions, in others they are

subject to an applicable collective agreement and the teacher's contract of employment. Given

this detail, the fact that none of Hoogland's directors volunteered to be interviewed, and the fact

that Amersfoort did not have any directors employed within their jurisdiction, I opted not to

include them in the study's findings. Four midlevel leaders from Amersfoort and two midlevel

leaders from Hoogland were interviewed (see Table 2). Amersfoort and Hoogland midlevel

leader roles and responsibilities can be grouped into four main categories: human resources, curriculum and instruction, student services, and secretary-treasurer with Catholic jurisdictions giving prominent attention to one further area, religious education or faith leadership. Midlevel leaders whose roles were related to curriculum and instruction, had responsibilities associated with providing professional development around programs of study, assisting schools in the implementation of district goals and priorities, and supporting teaching and learning. Midlevel leaders responsible for student services focused on inclusive education and working with schools to provide individual student assessments, programming, and universal, targeted, and specialized support. Those midlevel leaders responsible for human resources were involved in the hiring, supervision, and evaluation of teachers. Secretary-treasurers are typically not educators within Alberta school jurisdictions. Rather they are business professionals that oversee the financial and operational requirements of the jurisdiction. Several midlevel leaders in this study had responsibilities across multiple areas of responsibility and most talked about collaborating and working as a collective senior administrative leadership team to bridge areas of responsibility and move forward as a unified team in pursuit of a common vision.

All school based principals from the four case studies were invited to complete an online survey. While no Leusden and Utrecth principals completed surveys, there was an overall return rate of 15 percent from Amersfoort and Hoogland, six completed surveys from Amersfoort and three from Hoogland. Six respondents chose to complete the survey in full and three answered some of the questions and submitted an incomplete survey. The majority of the survey respondents, five of the nine, indicated they were male, possessed a Masters of Education, and were principals in schools with a student enrollment of 250 to 500. All indicated that they have at least 60 percent administrative time. Six out of nine also indicated that they have worked for

their respective jurisdiction for the last 10 to 19 years. Five of nine indicated that they have been in their current position for two to four years, two of nine for five to nine years, and one for 10 to 19 years.

<div align="center">**Amersfoort School Jurisdiction**</div>

**The Jurisdiction**

Amersfoort, the larger of the four jurisdictions in this study, serves approximately 10,000 students in 15 communities throughout the province of Alberta. Amersfoort's 600 teachers and 700 support staff provides education to students in approximately 40 schools across a mixture of school configurations. The prevailing culture, based on interviews, is one of a sense of collaboration and transparency. In part due to the superintendent's ongoing efforts to engage all stakeholders in open and transparent conversations. The Board, superintendent and midlevel leaders regularly meet with students, parents, support staff, and teachers to facilitate communication and ongoing discussion. These meetings typically involve conversations about what the jurisdiction has accomplished, where they are trying to go, and attempt to seek feedback regarding what stakeholders see as challenges and issues, and what jurisdictional leaders should consider as they move forward. Meetings also include discussion around topics brought forth by the stakeholders themselves and have assisted in uniting efforts around the jurisdiction's vision.

**The Participants**

Amersfoort has no directors. Amersfoort however has five associate superintendents; all but the associate superintendent of corporate services were interviewed (see Table 3). The superintendent was hired from another Alberta jurisdiction five years ago and came to Amersfoort with one year experience as a deputy superintendent, eight years' experience as an assistant superintendent, as well as school administrative experience.

The associate superintendent of learning services, the associate superintendent of student services, and the associate superintendent of system services were all hired four years ago. The associate superintendent of learning services possesses a Doctorate and was promoted from within, previously holding a director position, which no longer exists. Having 23 years of educational experience in Alberta, largely in central office, as well as experience in Saskatchewan, the associate superintendent of learning services was hired into her current role partially because of her relationship building skills and her ability to align research and learning practice. The associate superintendent of system services has been with the jurisdiction for over 20 years, while the associate superintendent of student services was hired from another Alberta school jurisdiction where she held a central office role for 12 years.

Table 3

Midlevel Leaders in Amersfoort School Jurisdiction

| Title | Areas of Responsibility | Interviewed |
| --- | --- | --- |
| Associate Superintendent | Human Resources | Yes |
| Associate Superintendent | Learning Services | Yes |
| Associate Superintendent | Student Services | Yes |
| Associate Superintendent | System Services | Yes |
| Associate Superintendent | Corporate Services | No |

## Hoogland School Jurisdiction

### The Jurisdiction

Serving approximately 8000 students in eight communities throughout the province of Alberta, Hoogland's 400 teachers and 300 support staff provide authentic Catholic education to students in 20 schools. As with many rural school jurisdictions, community populations vary, from 1000 to 25,000, with each community having its own unique profile. The majority of

Hoogland's students attend schools within its two largest communities with the remainder attending schools within the smaller communities, many of which contain schools designated as *small school by necessity*[3]. The Jurisdiction has seen extensive growth in English language learners (ELL) which has resulted in the development and expansion of ELL programs within schools. Hoogland is also experiencing extreme population growth. As such securing short-term space and new school facility acquisition is a top priority for its board.

**The Participants**

The Hoogland division office employs educators that directly support administrators and teachers in instructional improvement efforts, and the entire senior administrative leadership team is relatively new. Possessing a Doctorate, the superintendent, only has two years in his role as superintendent, but has spent 20 years working within Hoogland as a teacher, school based administrator, and division office mid-level leader before moving into his current role. While not interviewed, the deputy superintendent has two years' experience in his role, having been promoted from within and previously worked as a principal, division principal, and associate superintendent within Hoogland. Similarly, the associate superintendent of corporate services, secretary-treasurer, also has two years' experience and is an educator, which as mentioned

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[3] In order for schools to qualify as *small school by necessity*, a school must be located at a distance where transportation to another school is not practical (defined as 25 km by road in rural areas and 6 km in metro-urban and urban areas). If there are no schools within the minimum distance that can accommodate the additional students, due to capacity or grade level considerations, a school will be considered *necessary*.

previously, is not common within Alberta. The Superintendent commented that this strengthens the connection between the financial and student based decisions. The associate superintendent of corporate services was interviewed and brings with him, school based leadership experience, a Hoogland veteran high school principals, as well as college and university teaching experience. The other associate superintendent is also new to his position having only one year of experience in that role. Specific information regarding mid-level leaders and their roles can be found in Table 4.

Table 4

Midlevel Leaders in Hoogland School Jurisdiction

| Title | Areas of Responsibility | Interviewed |
|---|---|---|
| Deputy Superintendent | Human Resources | No |
| Associate Superintendent | Curriculum and Instruction and Faith Leader | Yes |
| Associate Superintendent | Corporate Services / Secretary Treasurer | Yes |

**Additional School Jurisdictions**

To support and challenge the findings brought forth from interviews, surveys, and data analysis of Amersfoort and Hoogland interviews from Leusden and Utrecht's Superintendents were analyzed. The following provides a brief portrait of these two jurisdictions.

**Leusden School Jurisdiction**

**The Jurisdiction**

Serving approximately 3000 students in seven communities throughout the province of Alberta, Leusden's 200 teachers and 200 support staff provides Catholic education to students in ten schools. Similar to the majority of rural school jurisdictions, each community within Leusden has their own unique profile. Leusden overlaps five public schools jurisdictions which require

significant commitments of time and collaboration on the part of Leusden to align school calendars and coordinate transportation for its students. Leusden has seen unprecedented growth over the last number of years and contains one of the fastest growing cities in Canada. Leusden has almost doubled their student population in the last five years and continues to endeavour to resolve a serious lack of student spaces in several of its communities.

**The Participants**

Leusden employs a small number of educators within division office that directly support administrators and teachers in instructional improvement efforts. The only individual interviewed was the superintendent. Possessing a Doctorate, the superintendent is relatively new to his role, having been hired from within two years ago following a four year term as assistant superintendent. His background over the last 20 years is varied having worked within three other Alberta jurisdictions and includes international educational experience as both a teacher and school based administrator. While not interviewed, Leusden has three educational midlevel leaders, two assistant superintendents, learning services, and human resources and technology, and a secretary-treasurer.

<div align="center">

**Utrecht School Jurisdiction**

</div>

**The Jurisdiction**

Serving approximately 6000 students in three communities throughout the province of Alberta, Utrecht's 300 teachers and 200 support staff provides Catholic education to students in approximately 20 schools ranging in size from 175 to 750 students. Approximately 70 percent of the jurisdiction is urban, being essentially a bedroom community to one of Alberta's larger cities.

Similar to Hoogland, Utrecht defines itself by its Catholic identity, stressing that their moral imperative and calling is to serve children. This belief not only drives the faith dimension

of their work, but appears to also be the heart of their passion and motivation to apply research based professional practice.

**The Participants**

Utrecht's superintendent has been with the jurisdiction for six years and was a superintendent for five years in another Alberta school jurisdiction before coming to Utrecht. Prior to his previous superintendent position, he was the superintendent of another Alberta school jurisdiction for two additional years, having been promoted from his deputy superintendent in that same jurisdiction. In total, Utrecht's superintendent has 17 years of central office experience.

Utrecht's senior administrative leadership team consists of the superintendent, and two assistant superintendents, one, human resources and leadership services, the other, learning services, an associate superintendent of student services and a secretary-treasurer is also employed with Utrecht.

<center>**Chapter Summary**</center>

The intent of Chapter 4 was to provide an overview of the four school jurisdictions and the participants within this study. The priority, as communicated by those surveyed, from all jurisdictions, was improving teaching and learning for students. Challenges focused primarily around student enrollment growth and included challenges associated with providing educational leadership within a large geographical area and working with diverse and unique community needs. A description of the superintendent and their midlevel leader's roles and responsibilities was included. Midlevel leader's roles revolved around four main areas: human resources, curriculum and instruction, student services, and secretary-treasurer with Catholic jurisdictions giving prominent attention to one further area, religious education or faith leadership. Chapter 5

provides a more detailed portrait of Amersfoort and Hoogland and includes commentary from the interviews with Leusden and Utrecht's superintendents to support and challenge the perspectives that emerged with regard to how Alberta school jurisdiction leaders mobilize knowledge to align research and learning practice within school jurisdictions. Chapter 5 presents the findings from the four superintendent and six midlevel leader interviews and from the nine principals who completed the survey questionnaire. Chapter 6 delves into discussion, implications, and conceptual refinement of the findings.

## Chapter 5: Presentation of Findings

### Introduction

The purpose of this study is to determine how a systems or complexity approach can play a role in understanding the unpredictability of organizational change and thereby enhance the mobilization of knowledge regarding the alignment of research and learning practice. The guiding question for this research was: How do Alberta school jurisdiction leaders mobilize knowledge to align research and learning practice within school jurisdictions? This chapter presents findings, guided by the preliminary complexity theory conceptual frameworks outlined in Chapter 3. As described in Chapter 4, the data were acquired from four high-performing Alberta school jurisdictions. Interviews were conducted with two superintendents and six midlevel leaders: deputy, associate, and assistant superintendents from Amersfoort and Hoogland as well as two superintendents from two additional high-performing Alberta school jurisdictions, Leusden and Utrecht, in order to challenge or support findings from Amersfoort and Hoogland. Only principals from Amersfoort and Hoogland's 60 schools responded to an online survey. Nine submitted the survey, six submitted fully complete surveys and three submitted partially complete surveys. Three-year education plans, annual education results reports, and additional jurisdiction created documents available on jurisdiction websites were analyzed to corroborate and support comments made by the superintendents, midlevel leaders, and principals and assist in examining converging lines of inquiry. The analysis of each jurisdiction's plans, reports, and jurisdiction-created documents assisted me in understanding the context and focus of each jurisdiction. Jurisdiction education plans were useful as they described the mission, vision, beliefs, values, goals, and strategies of the jurisdiction. What follows is an in-depth portrait of two of the four jurisdictions, Amersfoort and Hoogland, following a detailed look across

multiple levels of these complex organizations. This complexity research provided the nuances to acquire a portrait of the jurisdictions including how they pursued priorities, and goals. This is not to say that these jurisdictions or complexity can be reduced to these aspects, but that these aspects are useful in describing complex structures and dynamics. Other jurisdiction and school based planning documents available on Amersfoort and Leusden's websites used to create their portrait included: learning frameworks grounded in research, as well as board strategic plans. All of which provided a deeper understanding of the ethos within both jurisdictions. Three key facets from the findings of these two jurisdictions emerged around their core work and in response to the question that guided this research:

- Enhancing Student Learning – in all cases, leaders described the jurisdiction's core work as enhancing student learning.

- Ensuring best practice and research – jurisdiction leaders play a key role, not in bringing innovations or new ideas to the jurisdiction, but rather in the real work of mobilizing the jurisdiction and implementing best practice and research.

- Establishing relational trust – as positive relationships built upon trust are fostered and students, staff, and stakeholders are engaged around the core work via a collaborative process so too does the commitment to achieving the goal of enhancing student learning.

This aligns with the responses of Leusden and Utrecht's superintendents and with the work of Viviane Robinson (2011) who found that:

> the big message from the research on how leaders make an educational difference can be summed up as follows: 'the more leaders focus their relationships, their work, and their learning on the core business of teaching and learning, the greater will be their influence on student outcomes.' (p. 15)

As jurisdiction leaders strive to enhance student learning, they need to know what to do and how to do it. Distinguishing between leaders' core work and the dimensions that aid in this work can enhance their understanding of, and ability to, begin the demanding work of knowledge mobilization and research-policy-practice alignment. Leaders need to understand the importance of the interplay of leadership dimensions and their manifestations within the interactions around the core work of the jurisdiction, as these interactions respond to and influence the contextually complex environment within which leaders function. Five further findings emerged from the research question, how Alberta school jurisdiction leaders mobilize knowledge to align research and learning practice within school jurisdictions (see Table 5). These dimensions address how jurisdiction leaders go about bringing their core work to fruition.

Table 5

Five Key Dimensions Emerging from the Findings

| Number | Finding | Description | Key Markers |
|---|---|---|---|
| One | Efficaciously Decentralizing: Attending to Both Redundancy and Diversity | • Alignment, all work is to achieve a desired effect.<br>• Schools are headed in the same direction, within a common focus.<br>• Undiluted focus with no distractors.<br>• Flexibility to allow for diversity. | • Shift from fragmented to decentralized network<br>• Alignment<br>• Flexibility<br>• Diversity<br>• Actively promote goals |
| Two | Explicitly Focusing: Identifying Sites of Redundancy | • Specificity of focus around quality teaching and quality learning environments.<br>• Focus on fewer things, do them more deeply and effectively, in a more structured, purposeful, and collaborative way, within a supportive environment. | • Specificity of focus<br>• Fewer goals<br>• Prioritizing and filtering out lower priorities<br>• Simplification<br>• Modeling<br>• Relentless/unwavering and sustained commitment to the plan |
| Number | Finding | Description | Key Markers |
| Three | Enacting | • A clear vision sets the direction. | • Commitment |

| | | | |
|---|---|---|---|
| | Expectations: Implementing Strategies for Redundancy | • Ongoing transparent conversations around expectations and the core work.<br>• Accountability, clarity around the achievability and progress of the process.<br>• Aiding this achievability is ongoing jurisdictional support,<br>• Commitment as opposed to compliance. | • Transparency<br>• Accountability |
| Four | Engaging Expertise: Identifying Sites of Diversity | • Grass roots contributions and ongoing collaboration and feedback made by students, parents, teachers, staff, and other stakeholders with regards to the jurisdiction's educational plan and its core goals.<br>• Strengthening and building trusting relationships.<br>• Ownership of one's learning and overall commitment, as opposed to compliance. | • Collaboration<br>• Trusting relationships<br>• Ownership of learning |
| Five | Ensuring Efficacy: Implementing Strategies for Diversity | • Committed to instructional leadership, jurisdiction leaders focused on building teacher capacity and improving teacher practice/efficacy through ongoing professional learning built upon research and strategic support.<br>• Focus on enhancing efficacy, a culture where learning is the work and student success the outcome. | • Instructional leadership<br>• Research<br>• Support |

The remainder of Chapter 5 is a more in depth portrait of Amersfoort and Hoogland, which brings forth the description of the five key findings that support the jurisdiction's work to enhancing student learning, ensuring best practice and research, and establishing relational trust. Illustrative quotes from those interviewed and surveyed are used to let participants speak for

themselves, portray perspectives through thick descriptors, and capture the richness and complexity of the jurisdiction. Where applicable, reference to documentation is woven in to augment and solidify discussion.

## Efficaciously Decentralizing: Attending to Both Redundancy and Diversity

**Conceptual overview**

The portrait of Amersfoort and Hoogland that is developed throughout this section is that leaders within high-performing Alberta school jurisdictions attend to redundancy and diversity. These two elements of complex learning systems need to be attended to simultaneously within efficacious decentralized networks; networks where the educational whole is greater than the sum of the parts. While redundancy lays the foundation for the web-like connections within decentralized networks, these connections between hubs create opportunities for undiluted efforts and the development of common foci and foster the development of a system where all efforts are strategically enacted to achieve the desired goal. While redundancy strengthens the commitment and progress towards the goals, diversity addresses the local context and allows for flexibility that prompts the emergence of a social collectivity that strengthens the commitment and progress towards the grandeur system's foci.

**Amersfoort**

When interviewees were asked if they would describe their jurisdiction as a centralized or decentralized network, without the prevision of a predefined definition of either, many interviewees paused, sought clarity or were hesitant to answer. Some inquired as to, "In what regard" (Abraham)? Others asked, "In what aspect" (Aaron)? The majority of participants communicated that their jurisdiction and the work being done within it had undergone a shift towards a more centralized network structure. "It is centralized because we are all in but it is not

centralized because there is one guy in the office controlling the purse strings and pushing things

out" (Adam). As conversations progressed, opportunities manifested were the evidence that was

shared did not support the notion of centralization. Rather, the reference to a shift in network

structure was more congruent with a shift from a fragmented network to a decentralized network.

> I would say that it is more centralized in the nature of collaboration, transparency and
>
> support rather than power and authority. If you would have asked me that question 15
>
> years ago as a principal I would have talked about centralization as someone controlling
>
> me and there is power and authority and now I think we are more centralized but it is in
>
> the spirit of collaboration and transparency. (Adam)

Further evidence of such a shift included the notion of attending to a complex balance between

providing sufficient redundancy and opportunities for diversity. Amersfoort's jurisdiction leaders

spoke of their work with regard to moving towards a collective purpose where hierarchies are

articulated in terms of collective responsibility around a core purpose, not power or authority.

This concept of collective responsibility was also communicated by principals. "Strong admin

group that works together trying to get schools on the same page" (Amersfoort Principal). With

regard to the need to attend to redundancy and diversity, Ann for instance, initially stated, "We

are centralization but when it comes to making decisions our schools still have a lot of

autonomy." She later reinforced this notion by stating that within Amersfoort, schools are still

empowered to make decisions with regard to how they achieve jurisdiction goals and referenced

decentralized networks, "We are probably shifting more towards decentralized. …We are still in

that mode where we do empower our schools to make a lot of the decisions." Ann also stated,

When I came to the division 4 years ago there was more fragmentation than I see now.

…We have spent a lot of time getting them to understand how important it is to get the

whole division moving forward in a common direction. (Ann)

This notion of shifting from a fragmented to decentralized network is further illustrated by

Adam's comment about facilitating change and putting structures in place that ensure practices

are taken up.

When I hear you say, 'Let it happen.' What I think of is a jurisdiction that says, 'It is up

to the schools.' And the school will decide what is next and you let the school just

navigate wherever they want. It would be very difficult for a school to say, 'We are not

interested in a quality learning environment.' It would be very difficult for that to happen

with all that we have laid out with our expectations. … We are facilitating change. We

are facilitating what happens, but we are also flexible.

Abraham philosophically spoke of a shift to a more decentralized network even though he

referenced it as a shift towards centralization because in his mind it is a shift away from

fragmentation.

I would say it is much more centralized. However, we respect that you have a different

context. …We allow them to do a lot. …We have just shifted the continuum a little bit

more to the center. …We have not gotten into micro-management.

It is clear that within Amersfoort, there is a shift away from the Superintendent as the

sole power and authority within the network structure; a shift that is accompanied by a

transformation of the superintendent's leadership style. Adam exposed this shift in leadership

style when he spoke about the jurisdiction's grassroots literacy movement. "Literacy is, I would

say, an appropriate and timely grassroots movement and is clearly coming from classrooms.

Teachers, when we ask them, 'Hey what are you digging into?' They are nuts about literacy and now it is our priority"

Fragmented networks can be linked to the notion of site-based management, which was popularized in the mid-1990s. At that time strong supporters of site-based management advocated that those closest to the student are in the best position to make the right decisions. Abraham spoke about the flaw in this characteristic of fragmented networks, "the people closest to the kids make the best decision is actually quite flawed, it may be true in some cases, but it is not true in every case." Abraham and Adam talked about the complexity of the jurisdictional context, network structures, and external factors that impact change. Both used specific examples to speak about the antecedents that prevent change at a local level due to how they impact local decision making. The specific example, both Abraham and Adam spoke about was in relation to Amersfoort's shift in practice with regard to how allocations of funds changed from a formula based model to a needs based model. Adam spoke about "uncovering many, many inequities, and many inefficiencies" and practices at the local level that resulted in "money just being thrown away" (Abraham) in the old model because of local pressure that prevented changes from being made or taking effect.

Amersfoort's leaders repeatedly commented about a strong sense of connection to one another. "All the initiatives that we are doing do align nicely" (Adam). When these leaders spoke of connections to one another they did not talk of rigid expectations, rather they discussed opportunities for innovation that addressed diversity and the practice of adapting strategies that are used in order to achieve jurisdiction goals while addressing the local context. They also spoke about shifting network structures and the importance of fostering the intertwinement of practices as doing so improves student learning and improves the context of learning. Ann spoke

81

specifically about how attending to redundancy and diversity impacts learning and teaching, "We have found that with our focus on a quality learning environment, which schools played a large part in developing, that we are now finding that there is more alignment in where we are going, not necessary how we are getting there." Quotes from other leaders within Amersfoort that support this attention to sufficient redundancy and diversity include:

There is a mantra of alignment. I use a word of the year for the last few years and for the last two years it has been alignment. To see how all the pieces fit together. …I think that alignment has been the key part of our success. Alignment means that what is happening in the classroom and what is happening to the teacher, the administrator, and central office leadership team align. You should see alignment in all of the things that are doing done. Every single employee in the division is doing a growth plan. Every administrator is working to support their teachers to support this instructional leadership approach. There is real power in alignment. … Alignment is key. We are on the same page. I think you will hear that repeatedly from people. They won't say that when you talk to [the superintendent] they hear one thing and when they talk to [the associate superintendents] they hear another. They get the same message from all of us. … That has been absolutely huge. (Abraham)

We are close together. I think propinquity is the name for it. I have … worked in this school division under a number of different superintendents and at times we worked in silos and didn't know what the other people were doing. That is not the case now. We are very much a team. … We are all aligned. We are aligned as a central office leadership team. I think our school administrators are aligned and teachers and staff at schools are

82

aligned and work through a growth plan process that lies out and works on the direction

we are heading. (Aaron)

We are all on the same page. We expect our schools to be focused on literacy. This is

what you guys [teachers, staff] said is an issue for kids. We [jurisdiction leaders] see it as

an issue. You guys brought it forward; we are here to support you, so let's stick with the

plan. Everything we do aligns with our focus on creating a quality learning environment.

…There is no shiny fish hook; we are not getting distracted by other things. …

Everything aligns. Everything is tight. Everything revolves around our work on creating a

quality learning environment. …We are sticking to the plan but not sticking to the plan to

the point that we are going to ignore innovation, but it is going to have to fit with the

direction that we want to go." (Amber)

Abraham and Amber address the notion of redundancy nicely when they describe alignment.

Amber extends this discussion and brings in diversity and reveals that this shift to a more

decentralized network provides schools with flexibility to address diverse site based contexts.

"There is some flexibility, it is not so rigid that 'thou shall' but here is our direction. …It is not

prescriptive. There is room for school context and room for individual practice but still tightly

connected to research" (Amber). Aaron too connects redundancy to diversity, "Schools will have

school goals that align with the division but there might be some variation. …There is the school

aspect, where they have time to address specific school contexts. … There is flexibility" (Aaron).

Within Amersfoort's network structure, it appears that there is active communication

with respect to the goals themselves and the progress being made towards achieving them.

Communication emphasizes the interactions and interdependencies among nested systems and

system components and strengthens redundancy so as not to detract from the collective efforts.

Amersfoort's midlevel leaders, Abraham and Amber, articulated this notion well when they stated:

> We want all of our people to be able to pass that white paper test that if you just sat them down and asked, 'What is the school division trying to do?' Most of them could actually answer the question. (Abraham)

> We want everyone to know what we are up to and what my team mates are up to, so that when we go out into the field and someone corners us or questions us that we are able to speak knowledgably and in support of the direction that we are going. (Amber)

**Hoogland**

Attending to redundancy and diversity is not just the mantra of Amersfoort's leaders, but also manifests in Hoogland jurisdiction leaders' interviews and school leaders' survey responses. In many ways redundancy is akin to alignment in that efforts are aimed repeatedly at a common goal.

> There is a common thread to all of our discussions throughout the year and when principals return to our schools there is an understanding as to the way things work. …There is an understanding that it has to fit with our district goals, fit with where we are going as a district and as a school. (Harold)

All of Hoogland's principals who completed the survey also spoke of redundancy/alignment. For instance, all principals strongly agreed that their school's goals aligned with jurisdiction goals. One of Hoogland's principals explicitly shared what the core goal that binds all schools was, "Everything connects to student achievement. It's all about maximizing student achievement and student success" (Hoogland principal). All of the surveyed Hoogland principals also indicated that they frequently or regularly monitor and assess their teachers' practice within their school

for both alignment with research and emerging trends and to ensure that practices align and support the jurisdiction goals and jurisdiction policies. All surveyed Hoogland principals also indicated that they had implemented a school education plan designed to align school and teacher practice with jurisdiction goals. The following Hoogland principal comments further support Hoogland's practice of attending to redundancy. "Team goals must be aligned to district goals", "professional learning days are intentionally designed around divisional goals", and "retreats allow teams to develop common language and approaches to new initiatives and/or other district projects." This notion of redundancy is exemplified by the following quote.

> There is definitely a pressure to align and I don't mean that in a negative sense. That is the way things work around here, in our district. It definitely informs my decision in terms of where I pay attention with discussions with teachers. (Hoogland principal)

All participants spoke about the jurisdiction work and the importance of redundancy. Their comments paralleled Hoogland superintendent's comments, "We don't dabble out in a whole bunch of different directions. … We are not big on branching out into a million different programs" (Harper). Hoogland's superintendent also spoke of attending to diversity, "At the end of the day we don't micromanage. … We are different and if you try and micromanage it is not going to work" (Harper). The practice of strategically attending to redundancy and diversity around a common goal or focus connects to local decision making at the school level as such decisions allow for local contexts to be taken into account. As such, Hoogland leaders' expectations are more about direction and parameters on focus, effort, and practice. Quotes from Hoogland's leaders that would support the notion of attending to diversity include: "P.L.C.s [Professional learning communities] have incredible autonomy and power but we centralize what they focus on" (Harper), and

85

The schools have an awful lot of autonomy to say we like to pursue this….They are not allowed to abandon jurisdiction ideals. …They might say, 'this is the direction I want to go.' They must justify it but principals make the final decision. (Henry)

All of Hoogland's principals who submitted surveys also strongly agreed that attending to diversity was part of their culture. All indicated that they had considerable opportunity to use personal initiative and judgment in carrying out the goals of the jurisdiction. Opportunity for personal initiative and judgment draws a parallel with diversity. Hoogland principals' comments that further demonstrate a culture that respects diversity include: "We have a lot of latitude and ownership over how things are implemented within our schools" and "We are free to focus on school goals but there is an expectation that we were going to follow a professional learning approach, using data to make decisions." All of Hoogland's surveyed principals believed that jurisdiction leaders frequently or regularly provide a safe haven for school experimentation with regard to how they pursue jurisdictional goals and how they go about aligning practice. One Hoogland principal specifically stated, "As a school based administrator we do have some breathing room, some ability to take risks, to modify things as to what fits best for our context." It is clear that within Hoogland, efficacious decentralization is about attending to redundancy so as to move forward with an emergent social collectivity that possesses enough diversity as not to clash with local contexts; diversity that avoids rigid prescriptive approaches to change.

Similar to Amersfoort, Hoogland utilizes extensive communication strategies to support redundancy and diversity. According to all of school principals surveyed within Hoogland, jurisdiction's goals are consistently communicated and referenced by jurisdiction leaders. Within Hoogland, the three-year education plan is not merely a compliance document; it is the jurisdiction's plan for improvement and is regularly referenced and used as a guide for the work

86

undertaken within the jurisdiction. All of Hoogland principals surveyed stated that jurisdiction leaders frequently or regularly referenced or discussed the three-year education plan and jurisdiction goals at jurisdictional meetings including administrative meetings. Principals also commented that they engaged in conversations about the contents of jurisdiction and school plans with their school staff. All of Hoogland's principals do so frequently or regularly at school staff meetings, and school council meetings, and two out of three principals do so frequently or regularly at school professional learning opportunities and during informal opportunities during the school day. One Hoogland principal went so far as to say that communications is the most important factor when implementing change, "The principal and school based learning team and their efficacy at delivering and 'selling' the information, are the most significant factors in the implementation of research based practices."

**Leusden and Utrecht**

While interviews and surveys were not collected to create as vivid a portrait of either Leusden or Utrecht as compared to Amersfoort and Hoogland, interviews with their superintendents did allow for commentary that both support and challenge the findings from Amersfoort and Hoogland's interviews and survey. Similar to both Amersfoort and Hoogland, the need to provide clarity and contextual stipulations regarding network structures was also evident within both Leusden and Utrecht. When asked to define the jurisdiction's network structure for instance, Leusden's superintendent stated, "It's a relative question as it depends on what we're talking about" (Larry). Similarly, references to shifting network structures were also present in both Leusden and Utrecht superintendent's comments. Utrecht's superintendent spoke about a shift towards centralization of the budget, "We have centralized our budget. …they have a pencil and paper budget and our principals like this as they have the time to address the

instructional leadership demands that we are placing upon them" (Ulysses). Utrecht's

superintendent, also spoke of shifting network structures around the notion of empowerment and

levels of decision making; essentially a shift from fragmented site-based decision making to

decentralized student-based decision making that is grounded in a common purpose. "We have

moved from a school that functions under the notion of site based decision making and site based

management to …student based decision making. … Our common core radiates out into schools

and staff … we animate their skills and talents and unique circumstance within a common

framework for everybody" (Ulysses). Within Leusden the superintendent also communicated this

shift from a fragmented to a decentralized network structure by referencing a shift towards more

centralization with attention to diversity.

> There has been a move towards centralization. Up until five years ago … each school was
>
> doing their own thing. …What it has done is helped to put us on a common path. I don't
>
> believe we would all be on the journey that we are on if we did not become more
>
> centralized. But at the same time we have a very healthy respect for the autonomy of
>
> schools. (Larry)

When speaking of Leusden's network structure, Larry addressed the notion of efficacious

decentralization when he stated, "I see the jurisdiction like a web and I am the part that stitches

everything together. I'm caught in having to negotiate a balance between multiple groups and

stakeholders", "We try to have those various stakeholders coalesce around a common agenda",

and "The specific interventions will look different but the common principals are going to look

the same". At times it goes well; at times it is a place of tension."

**Summary**

This section has outlined the role that efficacious decentralized networks play in attending to both redundancy and diversity, first within Amersfoort, and then within Hoogland. I then brought forth supporting and challenging findings from Leusden and Utrecht's superintendents. Findings included the notion of redundancy among agents in the system, deployed in a manner that enables, or better, compels, the emergence of diverse activity. When redundant efforts are united with adequate freedom to address diversity, knowledge is more readily and effectively mobilized and school efforts to achieve alignment of research and learning practice are more likely to come to fruition across the whole jurisdiction rather than in isolated pockets. Both Amersfoort and Hoogland have made progressive efforts to move away from their fragmented networks which manifested in the site based management movement of the 1990s within Alberta; as have Leusden and Utrecht. The importance of this shift towards decentralization was discussed as were the factors that contribute to decentralized network's success, mainly sufficient redundancy among agents and subunits for them to work together and cohere, so all work aids in achieving the jurisdictions' core purpose. Factors also included sufficient diversity to adapt to variety and respecting and acknowledging school contexts when bringing about change. Lastly, I gave a specific example of redundancy, mainly how leaders build commitment within their staff and stakeholders with regard to jurisdiction's goals by regular and ongoing communication. The next section will specifically discuss sites of redundancy and how an explicit focus contributes to aligning research and learning practice within jurisdictions.

**Explicitly Focusing: Identifying Sites of Redundancy**

**Conceptual overview**

One of the core features of an efficacious decentralized learning network is its ability to provide sites of redundancy. Within Amersfoort and Hoogland's complex structures and dynamics there exists a specificity of focus around quality teaching and the creation of a quality learning environment. Jurisdiction leaders are not distracted from their work, they possess an explicit focus, focus on fewer things, do them more deeply and effectively, in a more structured, purposeful, and collaborative way, within a supportive environment. Sites of redundancy are strategically implemented and extensively utilized by leaders. Efforts are prioritized and priorities filter, shape, and guide future actions and efforts which are then pursued in a relentless fashion. When these redundancies around the jurisdiction's explicit foci are built upon and supported by clear and unambiguous advantages for the system, they are more easily adopted and implemented. While organizations are never immune to competing interests within the workplace, leaders do need to be highly intentional and redundant in their efforts and communicate what is worth doing, how it is being prioritized, who is responsible for doing it, and they need to ensure it is seen to completion. While a relative advantage, either for teachers or students' learning does not guarantee adoption, the flexibility of a decentralized network and its ability to self-organize and emerge into various social groups that adapt to diverse local contexts does increase the likelihood of, and success of, uptake. The following sections continue to describe a complex portrait of Amersfoort and Hoogland, specifically with regard to how both jurisdictions mobilize knowledge that aligns research and learning practice using sites of redundancy.

**Amersfoort**

Within Amersfoort, leaders communicated that extensive efforts are undertaken and pursued in order to achieve their collectively created jurisdiction goals. As themes emerged from the conversations with Amersfoort's leaders, sites of redundancy started to manifest. Aaron for instance, commented on Amersfoort's explicit focus and spoke specifically to a focus for action that brings about efforts directed towards enhancing the jurisdiction goal; a site of redundancy pursued by the senior leadership team.

> As a central office leadership team we have an impact on improving student achievement results across the division. We are focused on the actions we do and trying to have a positive impact on student achievement and of course to improve student achievement.

Adam also spoke about strategies for systemic redundancy. Specifically the notion of filtering and how failing to do so within the past led to practices within Amersfoort that diverted leaders from their true work. "We went through a time period where we were chasing shiny fish hooks and not digging down to what is really, really important." Ann spoke about her efforts to sustain Amersfoort's focus, "We help move, guide, and support the work in our core areas and will be working on it for the next year or two." Amber's comments about Amersfoort's focus on quality learning, exemplified this notion of explicit focus, "Everything we have done has been guided by the quality learning environment, the quality learning environment; that is our touchstone." As interviews progressed, it quickly became clear that Amersfoort's leaders' touchstone was their pursuit of the quality learning environment. All interviewees articulated the importance of the quality learning environment and verbalized that all efforts were hinged on Amersfoort's quality

learning environment framework[4]. In essence, Amersfoort's leaders used their quality learning

environment framework as the springboard for systemic redundancy:

> In the past, people would sometimes say, 'Ok, we are a response to intervention division
>
> now.' We don't say that anymore, we focus on the quality learning environment and if
>
> there is research that helps move that along than it naturally fits in. The quality learning
>
> environment is like a shield. Whatever we are doing or looking at, whether it is
>
> educational research, a tool, initiative, or program with a registered trademark, if it can't
>
> support and pass through the lens of the quality learning environment than it is probably
>
> not going to help us. (Adam)
>
> What we do is really intense. Everything has to go through our filter. We call it the
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> quality learning environment. It has to be based on research and any focus or any
>
> professional development that we attend to or that the schools move forward with goes

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[4] Amersfoort's quality learning environment framework was developed collaboratively by

all stakeholders within Amersfoort and is based on a set of beliefs and assumptions which

have been drawn from research on teaching and learning; cultures of literacy, numeracy,

and inclusion; and engagement through learning communities. Its purpose is to guide

continuous school improvement and enhance the quality of instruction in classrooms. It is

focused on instruction and grounded in improving learning for all students. Built upon

relationships and student engagement, the framework outlines four high leverage points

around instruction: clearly identified key outcomes, balanced assessment practices,

purposeful instructional strategies, and personalization of learning.

through that lens. …There is a clear planning process that happens and the administrators have the supports they need to move those plans forward within their schools. (Ann) Amersfoort jurisdiction leaders' comments are congruent with principal comments with regard to explicitly focusing on sites of redundancy. One Amersfoort principal for instance stated that, "Division office references consistently, so we all have a clear path and understand the plan to get us there" (Amersfoort Principal). Another spoke of consistent opportunities. "Consistent opportunities and support for sharing and collaborating" (Amersfoort Principal). While another principal spoke of multiple opportunities for learning. "Division provides multiple opportunities for teachers to improve their teaching and learn about new practices. Mentorship for new teachers, instructional leadership visits, peer observations, cohorts, PLCs, and learning support teams all offer support and guidance to teachers regarding their practices" (Amersfoort Principal).

Sites of redundancy are more complex than merely narrowing one's focus, possessing an explicit focus, or merely using core goals as agents for prioritizing and filtering; Sites of redundancy guide the work, they act similar to sailor's sextants[5], guiding jurisdictional efforts forward along a path that leads to their end goal. "When a teacher says, 'what do you expect me to do?' There it is; a beautiful target and everything builds around that target" (Abraham). Similar to a sailor's sextant, Amersfoort's leaders have strategic tools that they use to keep people focused on priorities. Within Amersfoort, it is the professional growth plan which

[5] Sextants determine the angle between an astronomical object and the horizon for the purposes of celestial navigation. The device was used by early mariners/sailors to ensure their path was correct.

empowers their site of redundancy. Amersfoort professional growth plan template links back to the *Teaching quality standard applicable to the provision of basic education in Alberta* (Alberta. Lesislative Assembly, 1997), the *Principal Quality Practice Guideline: Promoting Successful School Leadership in Alberta* (Alberta. Alberta Education, 2009), and the jurisdiction's quality learning environment framework. All professional growth plans within Amersfoort are structured around a guiding question, and possess an individual and team goal with strategies, indicators and measures of success, room for reflection, and show linkages to the jurisdiction's explicit foci, their core goals and include efforts to achieve these goals.

> A good example is our professional learning guide, we have a little template for folks and we actually link our learning guide right back to those components of the principal quality standards and teacher quality standards. (Adam)

Principals also spoke about how jurisdiction leaders guide the work they undertake within their schools. "Division office staff are in classrooms, helping teachers make changes, referencing the goals and vision and looking at data on how the school is doing" (Amersfoort Principal). Another principal spoke more specifically about how the quality learning environment framework lays the foundation for redundancy. "The creation of our quality learning environment is the basis for every discussion we make and provides continuity; no new 'things' helps. Even the transportation department refers to the quality learning environment when making decisions during meetings" (Amersfoort principal).

Identifying sites of redundancy, explicitly focusing, the notion of prioritizing and filtering when pursuing jurisdiction endeavours, was clearly communicated by principals. All of Amersfoort's surveyed principals strongly agreed or agreed that their jurisdiction's goals and strategies influence the work that occurs within their school with regard to changing teacher's

practice. While the presence of an explicit focus was clearly evident, there was also leader commentary that the focus should not be overly intricate.

> We try to keep it simple. We believe strongly about the whole less is more, the two or three things, we are going to do them well, and do it well over a long period of time. A shiny fish hook is only going to work here if it fits with our long term vision. (Abraham)

When leaders speak of specificity of focus, they also speak of relentless and sustained focus, an unwavering commitment to the jurisdiction's plan and its core goals. Abraham conveyed how this commitment is a site of redundancy given that jurisdiction leaders continually inquire about progress, "This is the fourth year we have been doing this. We keep telling them, 'You know we are going to keep coming. We are not going away.'" Abraham also spoke about how their core focus is not an initiative, as initiatives end. Rather he stressed that, "We don't call it an initiative. We call it our plan and we are sticking to it. … They also really appreciate of the fact that we are not going to change on the latest dime." Aaron also spoke of redundancy with regard to an explicit focus over time, "Our goals have been pretty consistent over the years. … Improving teaching and learning for students. That is really what everything in our three-year education plan is focused around."

**Hoogland**

Hoogland's leaders spoke extensively about sites of redundancy including specificity of focus, and similar to Amersfoort, specifically commented on how a strategic plan with fewer goals narrowed their focus and grounded their work. Hoogland's superintendent stated,

> We are really cautious of initiative fatigue. The biggest thing we do is that we say straight up to them, 'This is our focus and it is not our focus for three days or three months but it is our focus for three years.' We let them know that we will be relentlessly consistent and

95

stick with these major initiatives. We say, 'This is new but you are not going to get a million new things. You will have the ability to focus'. …Focus. It's the biggest part; we've always been focused on results, and focused on doing fewer things and doing them better. …We focus on the big questions. How do modern kids learn? How do we know if they have learned? What do we do if they don't? (Harper)

Henry supported the superintendent's sentiment regarding sites of redundancy and the importance of not being distracted from the jurisdiction's core goals, "Typically the superintendent says, 'Let's just not go off on ten different directions.' We don't turn into ten different directions. …We stick to tried and true practices and just make sure that we do them really, really well." In harmony with redundancy, Hoogland simplified their jurisdiction and school based plans and jurisdiction goals, they no longer attempt to implement a multitude of initiatives simultaneously; rather they focus on fewer initiatives and implement them with depth instead of breadth. Henry spoke about this concept when he stated that his "jurisdiction's goals are pretty simple." Harper also spoke about simplification, "I tell them straight up, you are not going to get inundated. We are not going to wade into 100 areas." Simplification does not mean that the goal is easy. Rather it is narrow and fervidly pursued. Simplicity, according to Hoogland's superintendent, enhances the likelihood of achieving the goal, "I joke with my admin that the likelihood of the success of any plan is inversely related to how big it is" (Harper). Harold also spoke of simplification and touched upon how such plans are intentional and finely tuned to a singular purpose,

We take our time and we get it right. … With that comes a simplicity that we don't have to uproot everything that we know works and that we have been doing for a number of years. The innovation is we will do it carefully and intentionally and we are not going to

96

flip everything upside down, we are going to innovate around the core, not necessarily

the core itself.

These system leader comments are congruent with Hoogland's principal comments. All of

Hoogland's principals who responded to the survey for instance found their jurisdiction's three

year plans to be clear with regard to the provincial goals and jurisdictional strategies they

contained. One principal stated that a factor that accounted for the success and impacted the

adoption, dissemination, and implementation of research based practices was the alignment of

jurisdiction goals, goals which are "clear and consistently repeated" (Amersfoort Principal).

Through sites of redundancy and specificity of focus, leaders are able to leverage three-year

education plans and the jurisdiction's goals contained within them and use these plans as a lens

that assists in maintaining continuity.

Strategies for systemic redundancy, explicit focus, also includes the practice of filtering

out lower priorities in order to maintain the jurisdiction's focus and sustain efforts on achieving

core goals. Leaders within Hoogland used their jurisdictions' goals as filters and as a shield that

deflects distractions and limits interruptions. "We spend time in those areas we value, areas

within our plan" (Amersfoort Principal). Another Amersfoort principal stated that "Team goals

mirror department and district goals". Hoogland principal's comments were congruent with

jurisdiction leaders' comments, in that consistent messaging about priorities and the practice of

using goals as filters was a key approach used by leaders and was used to influence the work

within schools. Henry spoke specifically about the use of goals as a lens that guided the work

within Hoogland, "We try not to move forward without giving [new initiatives or ideas] careful

thought through the lens of our goals."

Closely connected to the notion of explicit focus is the notion of sustained focus.

Hoogland's superintendent spoke extensively about sustained timeframes and staying the course.

> We really do try to limit it and stay focused on our core priorities for multiple years. …
> We try to minimize our initiates to major initiatives and then sustain them for multiple
> years … and put all our energy there. … It is as important to remain continuity with the
> past as it is to embrace the innovation. … It is about remembering that here is where we
> are going and stay focused on it. … As a leadership team, we really encourage our people
> to stay the course and not jump on every initiative or fad. I think that we have done a
> good job on that. Let's be reflective when we see a change in education because too often
> we jump onto fads in education and too often they are destructive. (Harper)

Harold described staying the course as follows,

> Relentless consistency describes our intentional planning. … We are not going to change
> the foundation of what we are doing. …Consistency is a big part of it. It is a consistent
> message and consistent focus versus; you know, try something and then flip to something
> else that is new and more current.

Principals also spoke about sustained focus: One principal described it this way: "I have used the term 'relentless consistency' to describe how the message of priorities from the jurisdiction is communicated to all staff. … Organizational focus and goals are clearly stated and regularly repeated" (Hoogland principal). Another Hoogland principal declared that, "consistency and repeating the message are probably the most important ways for successful adoption, dissemination, and implementation of research based practices." Within Hoogland, expectations for implementation are linked to accountability; "teacher supervision and growth 'inspects what you expect' by measuring effectiveness on teaching" (Amersfoort Principal). When sites of

98

redundancy include an explicit focus, schools and jurisdictions develop a culture that further focuses people on learning and growth. A "culture which values student achievement means all those who come on stream must also value it to fit in, and student achievement benefits as a result" (Amersfoort Principal).

**Leusden and Utrecht**

As is the case for Amersfoort and Hoogland, sites of redundancy also relate to explicit focus within Leusden and Utrecht. Leusden's superintendent for instance stated,

Education plans are only modified and tweaked and readjusted. I don't think we have ever radically departed from our core focus. … As the old aboriginal saying goes, you chase two rabbits, they both get away. So this is the rabbit we have decided to chase and we try to keep a laser like focus on it. (Larry)

Leusden and Utrecht's leaders maintain explicit focus through the practice of filtering out lower priorities similar to Amersfoort and Hoogland.

Using our plans as filters, if the Board comes to me and says, 'We want to do X' I can say, 'We have already identified what our positive path forward is …we have identified the priorities. …How does it align with what we have identified?' (Larry)

Sites of redundancy also reminds diverse social collectives and nested systems of the grandeur system's focus which further aids in efforts to mobilize knowledge and align research and learning practice. The notion of connecting subunits and agents within a complex system is an ongoing challenge for Leusden's superintendent.

If anything, our weakness is that our priorities become too diffuse, too spread out and they end up becoming all things to all people. One of the things that I am trying to do is

to have greater alignment so that we are not running around in a hundred different

directions. (Larry)

This notion of too many directions was also communicated by Utrecht's superintendent. Ulysses spoke of reducing breadth of focus using a mile wide and an inch deep analogy to underscore the importance of focus and its impact on redundancy.

My key bias is that our principals don't need to be planning for and have goals for every

area where the evidence would indicate we are being very successful. They need to be

spending their time in areas where the evidence says they have the opportunity to grow

and then plans need to be brief in scope, heavy in involvement. It's not a mile wide and

an inch deep; it's an inch wide and a mile deep. So there is deep learning around few and

focused priorities … very narrow in scope and deep in learning.

Ulysses went on to say that, "you should be able to print your priorities on a t-shirt and wear it around and allow others to witness your priority and see what you say, what you know, what you value, and what you do."

Leusden and Utrecht's superintendent comments about spending one's time in priority areas is congruent with Amersfoort and Hoogland leaders' comments about filtering. "What you are choosing to talk about also sends a message. … I can't say, 'response to intervention is important' and then when we have principal meetings, never talking about it" (Larry). In fact, Larry makes a direct connection between goals and filters. "Goals serve as a filter." To exemplify this connection, Utrecht's superintendent gave a concrete example about how specificity of focus in practice exemplifies the notion of filtering when he spoke about building his jurisdiction's monthly administrator meeting agenda, "You can't get an item on our admin meeting agenda if you can't demonstrate that it is linked to our education plan" (Ulysses).

What is evident from Leusden and Utrecht superintendent's comments is that sites of redundancy and explicit focus is not the sole domain of Amersfoort and Hoogland's leaders but a stable strategy employed by all four high-performing Alberta school jurisdictions.

**Summary**

This section discussed identifying sites for systemic redundancy. It acknowledged the importance of being explicit with regard to the work that needs to be undertaken by the jurisdiction to mobilizing knowledge and align research and learning practice. Through strategically implemented sites of redundancy, leaders build upon and enhance staffs' commitment to an explicit, collective focus. There is a relationship between the number of goals, their complexity, and the likelihood of successful implementation. Leaders within Amersfoort, Hoogland, Leusden, and Utrecht approached redundancy through their explicit focus on simplified goals that allowed for diversity, as such, redundancy is more in alignment with Darwinian dynamics than Newtonian mechanics. The very notion of redundancy means that jurisdictions embrace simplification by not having too many goals. Leaders should not water down people's efforts, or create distractions via unrelated and unlinked goals. Leaders need to develop and utilize strategic plans with goals in order to bring about change, these goals must not only be explicit and focused, but efforts to implement them must be sustained. Within this section, I described how leaders use sites of redundancy with regard to jurisdiction goals to filter and prevent distractors from taking hold. I spoke about how leaders used goals as lenses and guides that kept staff focused and committed on the right efforts and on the right work. The notion of structure determinism would stress that within these sites of redundancy, it is the system and not the system's context that determines how it will respond to emerging conditions. As such, leaders must strike a balance between too rigid to allow for innovative responses and

structures that are too loose to enable coherent activity (Davis & Sumara, 2006). The next

section will discuss how strategies for redundancy, enacting expectations, contributes to

knowledge mobilization that aligns research and learning practice within jurisdictions.

<div align="center">**Enacting Expectations: Implementing Strategies for Redundancy**</div>

**Conceptual overview**

Influence via expectations is an integral part of most definitions of leadership and an

essential part of attaining goals. Specifically it is high-performance expectations around the

shared vision, a vision that guides the development of goals that enhances the attainment of the

vision and goals. "There is no more powerful engine driving an organization toward excellence

and long range success than an attractive, worthwhile, and achievable vision of the future, widely

shared" (Nanus, 1992, as cited in Leithwood et al., 1999, p. 58). When leaders take a

transformational approach, they create a vision that creates purpose and excites staff to change

their practice to align their practice with the jurisdiction's vision. Transformational leaders relate

the work to the larger jurisdiction mission. While transformational leaders enhance commitment

to the vision, leaders must be grounded in students, that is, be student-centered. When one

explores the diverse leadership typologies, one will notice that most are about the relationships

between the adults, that is, the leaders and the followers. Leaders need to focus their expectations

for teachers' learning and teaching on the needs of students if they want the impact to affect

students. Such student-centered expectations initiate action and progress towards achieving the

core focus or priority. Students, staff, and stakeholders need to become aware of, empowered to,

and engaged in the work of the jurisdiction through collaborative work that is undertaken in

pursuit of common goals around enhancing student learning. Collaborative endeavours to create

jurisdiction goals and collaborative efforts to achieve them aid in creating a collective

responsibility for achieving the jurisdiction's goals and shared commitment to undertake the work required to bring goals to fruition. It is the redundant strategies within the internal culture, not the external impetus that most determines the focus of, and progress made in the work within the jurisdiction. A culture of high expectations and commitment, rather than mere compliance, built upon transparent practices and accountability was evident within both Amersfoort and Hoogland and aided in the adoption of jurisdictional practices that align research and learning practice.

**Amersfoort**

Amersfoort's superintendent spoke extensively about strategies for redundancy including the importance of possessing high expectations.

> We really send a really loud and clear message around good results. … We talk about instructional leadership. … Visibility of administrators in classrooms was one of our key expectations this year. … We said to our administrators we are all in, we are not taking any passengers. You are either in or you are out. … The right people need to be in the right seats…but we have not done it in a way where it is top down." (Abraham)

Adam also spoke about enacting expectations. "We've communicated our expectations quite clearly to our school leaders and our staff members and just recently we have renewed our vows. We have renewed those expectations with administrators. …The expectations are clear. Those expectations have been set out." Ann too, commented on the notion of enacting expectations as a strategy for redundancy. She asks ongoing questions of school leaders about their work, and its connection with jurisdiction goals. "We continually ask, 'How does this align with our jurisdiction goals?'" The following two comments from Amersfoort's leaders further exemplify how leaders enact expectations, including expectations related to accountability. The comments

also illustrate how leaders use strategic conversations and ongoing feedback to communicate their expectations.

> We ask them to provide evidence…they need to show us what they have done. Their goals and what they have committed to and what they have done to improve teaching in their school. … If we have a school that is not in alignment with where we are going than we have a conversation as to why. …Everyone is aligned and moving forward. …If not we would certainly ask the question as to why are they not heading in this direction. (Aaron)

> The board fully expects a school principal to be able to talk about their school, their movement towards a quality learning environment. What they are doing to challenge and encourage and move towards our vision and mission. … What have you done the last 30 days to meet your school goals? Your own personal goals? Because we come each month and we ask, 'What have you done?' because the previous month we talked to them and may have made some commitments and so we ask, 'How did that go? (Adam)

Amersfoort jurisdiction leaders' expectations include holding principals accountable for moving forward. This expectation was confirmed by principal comments and as one Amersfoort principal put it; jurisdiction leaders "look for commitments and follow up. … [They ask], what will you do in the next 30 days? … [and then] make sure you follow through" (Amersfoort principal).

As jurisdiction leaders utilize strategies for redundancy such as enacting high expectations, they also challenge the status quo and put pressure on school leaders and teachers, pressure that brings about action for change. Amersfoort's superintendent used an analogy to

104

convey the importance of such pressure and talked about placing expectations and pressure strategically to create action in the right areas.

> A Ph.D. student studies alcoholics and had this idea that if they had relaxation therapy they would probably drink less. … Low and behold, after a certain amount of time, they felt really relaxed, they definitely made head way in making the drunks feel more relaxed, but the drunks weren't drinking any less. So they had a bunch of relaxed drunks… are we just making teachers feel better, or are we really making a difference with student learning?" (Abraham)

Making people feel good is not part of Amersfoort's core goal. Rather Amersfoort's leaders expect people to feel a sense of accomplishment when the jurisdiction's goals are achieved or when progress towards those goals is made. Strategies for redundancy such as enacting expectations bring their own challenges however, and at times require leaders to make difficult decisions, especially when teacher practice does not align with research or the core goals of the jurisdiction.

> From where we were four years ago and where we are now, there is way more weaker teachers being challenged or being moved out the door than ever before, and I think that is a good thing. … [We have] expectations for administrators regarding what we hope that they are doing or what we want them to be doing. (Abraham)

Within Amersfoort, there are high expectations for teachers and those that are unwilling to work towards meeting jurisdictional expectations are often removed from the jurisdiction. Even though expectations for improvement are being placed upon teachers and those that are unwilling or unable to meet those expectations are being evaluated or pressured to resign when there is no sign of growth, there is a concerted effort to build relational trust within the jurisdiction. Trust

105

and support from jurisdiction leaders means that school leaders feel more confident acting on the expectations placed upon them by jurisdiction leaders. One way Amersfoort's jurisdiction leaders build relational trust is by enhancing transparency. Amersfoort's superintendent is pretty transparent about his views on transparency and spoke about how it resolves and prevents undesirable practices.

> We make it very transparent and we tell everyone. …Prior to my arrival there were favourites, funds were given to people who [division office] appreciated and taken away, in a punitive way, from those who were not towing the line. In the past [jurisdiction leaders] could deal cards under the table and nobody knew. (Abraham)

Abraham goes on to say that he is "devoted to building relationships and doing what we said we would do and being transparent about it. We no longer play games." Comments from Amersfoort's other jurisdictional leaders supported the jurisdiction's transparent practice with specific examples linked to expectations. Amber talked about how transparency creates commitment to jurisdiction goals because people see how their contributions and perspectives shape and influence the jurisdiction's focus.

> I truly wanted their feedback and I took their feedback and showed them that there was a difference as we made [our quality learning framework]. So I had a transparent process set up and after each piece of feedback they could see the changes that were made.

Adam spoke of transparency with regard to school three year plans and how this strategy for redundancy acts as a powerful motivator for action.

> I bring everyone together to share what their school goals are, what their key strategies are and then we spend from January to April having those schools share their goals with

the school board. When people know what you say you're going to do, you're more

likely to do it.

Adam also spoke specifically about his expectations around budgetary transparency and commented that such transparency removes opportunities for making decisions that are not student-centered or not grounded in the jurisdiction's priorities.

We have gone to a funding and budgetary model where we share everything. We go into a room with all our principals and we decide how we are going to divvy up the money. Right down to 'Gee should we put a teacher in this school or this one?' 'Who needs more teacher time?' The process is much more effective than it was in the past because it is so transparent and we do it together. … My favorite example that highlights the benefits of our transparency … under the new system the school says, with everyone present, 'We need an extra $100,000, beyond what we are given.' So you physically go to the school and you look at it, teacher by teacher, and you find out that the reason that they are hoping for an extra $100,000 is because they have [x] and he is not teaching a class but is in charge of a program … because [x] can't teach in the classroom. …In the old system they got it and now it just won't pass through the transparent eyes of the whole room."

Adam provided a specific example about how Amersfoort's jurisdiction leaders used a question box activity to highlight how the jurisdiction makes their practice more transparent for teachers and how such transparency exposes how decisions and actions are grounded in the jurisdiction's priorities and how actions and efforts are redundant and interconnected.

When you go to a community and you walk in and you have all the educators and teachers and support staff from that community and you can spend an hour and 15 minutes with them and engage in conversation and talk about our vision, mission, and

107

goals. …You get pretty amazing information. They come in and we have a question box

activity. … You are literally picking up a piece of paper out of a box and answering it in

front of all the teachers and those teachers are then going to go back and tell other staff

what your answer is. …It has been fantastic to find out what is under the rug. I think we

have addressed a lot of questions and clarified things for people and made it better.

It is worth noting that Amersfoort's principals spoke about staff's resistance to change.

Mainly, they alluded to the fact that alignment of research and learning practice can be,

"hindered by historic structures and beliefs about successful teaching that prevent teachers from

moving ahead" (Amersfoort principal). Strategies for redundancy such as clear and explicitly

stated expectations around practice and expectations around research alignment linked with

transparent accountability practices is one way that Amersfoort is attempting to overcome this

resistance to change and mobilize knowledge that aligns research and learning practice.

**Hoogland**

Similar to Amersfoort, Hoogland utilizes strategies for redundancy to mobilize

knowledge and align research and learning practice. Amersfoort's superintendent spoke about

the provincial accountability pillar and his expectations about the role it plays with regard to

enacting expectations within the jurisdiction. He spoke specifically about how there needs to be

redundancy around school and jurisdiction goals; goals that are built to address areas of

weakness as determined by the provincial accountability pillar. "We are pretty focused on the

accountability pillar surveys and all goals that are local are related to the accountability pillar"

(Harper). When Harper speaks of accountability, he references the provincial accountability

pillar and the vast amount of data that it provides about the strengths and weaknesses of the

jurisdiction and of individual schools; data, which is based upon student, parent, and teacher

feedback and student achievement. Henry also commented on the jurisdiction's reliance on student achievement data.

> One of our measures is achievement tests and diploma exams because that is a pretty legitimate test of the curriculum. …On top of that we do place a fair bit of value on the accountability pillar and in particular the surveys to parents.

Henry's expectation of school leaders is more than simply having their students achieve good results on the accountability pillar. He also uses the accountability pillar results to spark dialogue about current teaching practice and expectations regarding teacher improvement and leverages the data to discuss ways to enhance knowledge mobilization and research-practice alignment.

> I would say between looking at provincial tests and surveys we have lots of discussion, lots of frank discussion. We get lots of feedback about what is working and what do we need to work on. … How do we get people to stop going off on tangents? The answer is that it starts with discussions and an opportunity to try things but there is monitoring in a collaborative sense from the whole group and ongoing discussion with the senior administration.

Henry's comment about dialoguing with colleagues about current practices and expectations regarding teaching and learning improvements and leveraging data is supported by principals' comments. Two of the three principals surveyed within Hoogland frequently or regularly reference and discuss their school's progress towards meeting jurisdictional and school goals with division office staff, fellow principals, and teachers within their own school. Hoogland principals spoke of the prominent role their school provincial accountability pillar played in their practice, "Our direction is set based on our accountability pillar" (Hoogland principal). Hoogland principals also spoke about how their jurisdiction's culture impacts school expectations and

109

teacher practice, "Our culture which values student achievement means all those who come on stream must also value it if they want to fit in, and student achievement benefits as a result" (Hoogland principal). Hoogland principals commented on the expectations jurisdictional leaders have with regard to holding teachers accountable, "New teacher supervision and growth plays a large role in establishing culture", and how jurisdiction leaders "inspect what they expect" and "measure effectiveness of teaching strategies that are supported by research." Such comments clearly demonstrate that high expectations are a major leveraging strategy for redundancy and lay the foundation for mobilizing knowledge and aligning research and learning practice within Hoogland.

**Leusden and Utrecht**

Similar to Amersfoort and Hoogland, Leusden's superintendent articulated the importance of having high expectations and verbalized how such expectations bring about a collective responsibility that strengthens redundancy. "Collective responsibility, philosophically we are trying to get all schools…moving in that direction. …The idea that as a group of teachers we are all responsible for the students in our schools, not just the kids in our own classroom is what we expect" (Larry). Accountability including the linkage of expectations to measures of success plays a key role in Leusden. Leusden's superintendent for instance, connects accountability to data but utilizes ongoing purposeful conversations to encourage and guide changes in practice. Purposeful conversations that include asking targeted questions and inquiries about evidence of growth beyond that identifiable via the accountability pillar.

> I am there to hold them accountable but I am coming at it from more of a coaching
> model. …I found it was not purposeful to show up and not have an agenda. Just be
> present, press the flesh and check out how people are doing. Make small chat, what not. I

110

found that didn't take me too long that I found that I wanted these visits to be more

purposeful. Now I would argue that they are purposeful. For instance, one of the things

that we do is something called continuous school improvement meetings. I've come up

with a standing agenda for visits that aligns with our work priorities. (Larry)

The use of formal expectations and reliance on and usage of accountability procedures was also

verbalized by Utrecht's superintendent.

While unpredictable, it is through the process of being accountable that progress is made.

We have school result reviews and our entire district team meets with our principals

about the education plans so that we can understand it. We especially hone in on the in-

year indicators of success. … Between January and May we go to our schools to do

learning walks with our principals and to provide coaching feedback to them based upon

whether those indicators of success that they spoke to are being realized. So I'll show up

in January, here is what you have communicated to me in your plan. What would you

expect that you would see when you are going into classrooms? (Ulysses)

The notion of high expectations and transparent practices that reveal the progress being made

towards achieving jurisdiction expectations is also a redundant strategy used within Utrecht.

I report back to the board on a monthly basis with respect to our quality indicators. … We

have 2 diagnostic tools in place here to gage the organizational health of the system …

what research indicates need to be in place in order for a person to be able to make a

positive difference in their work and achieve organizational outcomes. … What I am

doing is not about pleasing principals it's about getting the best that we can with regard to

learning for our students and continue to work with those principals who are not yet

meeting expectations. (Ulysses)

It is evident from Larry and Ulysses' comments that jurisdiction leaders have ongoing frank conversations, ask targeted questions, and inquire about evidence of growth beyond the accountability pillar; a practice that aids in mobilizing knowledge.

**Summary**

This section has outlined strategies for redundancy, specifically the concept of enacting expectations; the importance of unambiguous expectations, and how accountability and transparency play a role when mobilizing knowledge and aligning research and learning practice. As Amersfoort, Hoogland, Leusden, and Utrecht's leaders foster a culture of learning and address strategies of redundancy, the jurisdictional ability to align research and learning practice is strengthened. Leaders within the case studies strive to create a more unifying and explicit focus and followed through on clearly articulated high expectations; enacting expectations that include accountability and feedback strategies to maintain sufficient systemic redundancy. Accountability has been a staple of the Alberta Education system since the early 1980s and the leaders within these high performing Alberta school jurisdictions rely heavily on their provincial accountability pillar results to measure their success and goal achievement.

As leaders implemented transparent practices, such practices allow students, staff, and stakeholders to see and understand why decisions are being made, and how decisions align with the vision, mission, and goals of the jurisdiction. Such transparency strengthens commitment towards jurisdictional goals and builds momentum with regard to the work undertaken to enhance student learning. It creates collective responsibility with regard to meeting the expectations espoused by leaders, expectations that include the alignment of research and learning practice.

The next section will discuss sites of diversity; how engaging experts creates opportunities for collaboration, strengthens commitment and fosters ownership of the efforts around aligning research and learning practice within jurisdictions while allowing for diversity that takes local context into account.

## Engaging Expertise: Identifying Sites of Diversity

**Conceptual overview**

One of the preliminary issues that must be addressed before speaking about the potential contributions of complexity thinking to current knowledge mobilizing efforts is that people are not passive recipients of new knowledge or of jurisdiction and school leaders' efforts to achieve jurisdiction goals. Rather, adoption, diffusion, implementation, and assimilation are complex interactive processes that may or may not start with teachers seeking out best practices and/or research. Prior to being able to contribute to change in organizational practices, knowledge, whether based on practice or research, must be mobilized via formal and/or emergent social networks. The more widespread the involvement of staff at all levels of the jurisdiction within these nested social networks, the more successful the implementation. Implementation includes creation and uptake of complex collective knowledge and the more widespread, the more likely the jurisdiction will achieve its goals. With regard to new knowledge, school leaders, and/or teachers must

> experiment with them, evaluate them, find (or fail to find) meaning in them, develop feelings (positive or negative) about them, challenge them, worry about them, complain about them, 'work-around' them, gain experience with them, modify them to fit particular tasks, and try to improve or redesign them. (Greenhalgh et al., 2004, p. 598)

113

Rather than exploring specific attributes and characteristic of the sites of diversity and the efforts that jurisdictions undertake with regard to goal achievement, it is the engagement, the interactions themselves that occur within complex jurisdiction networks that matter. This section will portray Amersfoort and Hoogland's ethos of learning, where collaboration, commitment, empowerment, and engagement in personal ownership of one's learning is the norm. Personal ownership and its alignment with the jurisdiction's goals as opposed to compliance.

**Amersfoort**

Amersfoort's jurisdiction leaders foster an ever evolving culture built upon ongoing engagement; with interactions and feedback loops aimed at collaborative and intertwined endeavours in order to meet jurisdiction goals. It is evident from leaders' comments that collaboration plays a pivotal role within Amersfoort. "We have many *matters* committees, teachers matter, support staff matter, division office matters, parents matter, and students matter. 80 percent of my time is spent in collaboration or collaborative efforts with leaders of the school or central office" (Adam). As Amber explains, matter groups are opportunities for everyone's voices to be heard. "There are so many networks set up to hear the voice of everyone in this school jurisdiction; we are constantly doing that dip sticking in terms of how is our work moving forward."

Jurisdiction leaders also drew attention to system diversity and its relation to engagement. People are collective creatures and their identity, preferences, and abilities are significantly impacted by and dependent on context. Amersfoort's superintendent exemplifies this concept when he stated,

> We go out in teams of two and visit with every single school. … We spend a lot of time
> engaging. …Taking every opportunity to build and enhance relationships at every level

114

within the jurisdiction. …There is a difference between compliance and commitment. I think we have a lot more commitment than compliance because of how we have handled our engagement efforts. (Abraham)

The following comments from Aaron and Ann further lend credence to this idea.

We get out and talk to teachers on a formal basis. Every year we meet with every community; all the staff. …It was through this collaboration with all the stakeholders and teachers and many different groups that we were able to develop [our plan]. It wasn't [x] who developed a model and tried to shove it down everyone's throat. It was developed collaboratively. They develop it together as a team. (Aaron)

We have committees that connect people. Our teachers matter committee is very powerful. …We talk about what we are thinking; we bounce ideas around, what we are moving forward with. We listen to their voice, their input. So if we are going down a road and we think it is brilliant and they tell us that we need to think that though again as it is not going to be very effective in our schools. If it is not going to fly … they give us input on how to move forward … they give us very solid feedback and get us steering in the right direction. (Ann)

Within Amersfoort, jurisdiction leaders make it a priority to work collaboratively and to regularly engage school leaders and staff in strategic conversations grounded in the jurisdiction's goals. Aaron described what this process looks like in Amersfoort and stressed the need for attending to diversity when having conversations.

We go out in teams of two on a monthly basis and what we discuss is each of those meetings is the same, we work collaboratively as a senior leadership team to put together a ... not necessary a script but what are the key things we are going to focus on and

115

question and work with administrators on each month. So we are pretty consistent in what we do. We are very consistent in that we focus on the same aspects. We develop the questions that we are going to talk about in those instructional leadership visits based on the goals and directions that we are heading.

Adam also speaks about engaging staff and like Aaron, asks strategic questions and lets others do most of the talking as a way of engaging people in the work of the jurisdiction.

We make sure the right hand knows what the left hand is doing and we also find opportunities to work together and help each other to serve our schools. …We are in the schools asking the questions, talking to principals, helping them plan. Where challenges exist, we are working collaboratively to help the school move forward with their own goals and plans.

Adam also spoke about principals' engagement; in this case citing principals' engagement in school professional learning communities.

We want our administrators working right in the middle of their learning community. We want them blended in with that. Not just creating a team of teachers that help teachers within the school and then dust themselves off. They need to be part of the learning support team. …Teachers really appreciate that it is done with them. Not to them.

It is through strategic sites of diversity such as engaging with stakeholders, that influence is exerted on the beliefs and actions of those that interact within and between these complex networks. Amersfoort's superintendent spoke about this notion of diverse strategic engagement when he spoke about opinion leaders.

We bring in what we call opinion leaders, people who are really well respected in the school. People who are not afraid to speak and they come together with a few board

members and the local Alberta Teachers' Association president. They help us move

forward as they influence us and others. (Abraham)

Such strategic engagement not only facilitates collaboration, but opportunities for

communication and influence with regard to diffusion and dissemination of new knowledge. The

following quotes from Amber, Aaron, and Ann exemplify this.

I think that we have developed a level of trust in this district and we have proven

ourselves over time as a team, that we can be trusted and that we are trustworthy, and if

you disagree with us that it is OK. …I probably sound like a broken record but I do think

that our success goes back to that trust. (Amber)

We have had a real focus on relationships, positive relationships at every level of the

organization. …There is a high level of trust at all levels of the organization which allows

us to have open and transparent conversations which allows us to move forward. (Aaron)

I think I would be remiss if I did not say that there was a lot of credit that goes to our

superintendent and his leadership style. He is very transparent and very open and puts

himself out there in places where it is pretty tough for superintendents to go sometimes.

…People trust him and he spends a great deal of time building that trust and making sure

that he is out in schools. … He honours and respects the people who we are serving.

(Ann)

Principals also spoke of the importance of engagement and trusting relationships. For

example, principals stated, "relationships are central to moving forward" (Amersfoort principal)

and "the vision and mission was done through a highly collaborative process that included all

stakeholders" (Amersfoort principal). Amersfoort's Principals also spoke about the fact that

jurisdiction leaders did not simply assign or delegate tasks to school leaders; rather they share in

117

the daily work and play a role in achieving jurisdiction goals. One principal stated that "I believe the jurisdiction's ability to connect directly with the teaching force versus relying completely on school administration for transference is vital" (Amersfoort principal). Another principal defined efforts as collaborative and very much working together to get schools on the same page. This Amersfoort principal stressed that "the organization's design plays a crucial role". Another Amersfoort principal stated that, "An effective team of central office leaders working with synergy versus departments meeting their own goals is more effective" and "senior administrators who are in schools frequently doing the most important work, supporting teachers" enhances knowledge mobilization and alignment of research and learning practice. Aaron supports this detail when he states.

> We certainly want to create a culture where everyone feels that we are in this together, as one large team, a culture that is one, where we are all in it together, and how are we going to get there is as a group. …It is not developed from the top down. It is developed by working with professionals and multiple stakeholders so that we are developing a common vision and goals and then people take ownership and work towards that.

Amersfoort leaders' efforts to address sites of diversity make it impossible to attribute authorship of particular understandings to any one specific person. This fact encourages systemic ownership of efforts and strategies to attain jurisdiction goals.

> It took a year of working with every school and every teacher to create what we call the quality learning environment. The ownership and buy in has been tremendous. …It is not driven from me … They are still digging in deep and they are saying, you know what we are also curious about? They are driving that work forward and we are encouraging them to go deep. (Amber)

Adoption of new knowledge by individuals within Amersfoort is powerfully influenced by the structure and quality of the social networks they engage with. These influences can be either positive or negative and leaders need to be aware of the complex interaction and influence engagement has on staff. "Jurisdiction engages and empowers teachers effectively, but disconnect around timelines needed for change are tightened which causes teachers to wait it out until the next big thing" (Amersfoort Principal).

**Hoogland**

Similar to Amersfoort's leaders, Hoogland's leaders also engaged staff and other stakeholders to create new knowledge. Hoogland's superintendent, for instance stated, "We create teams of teachers and have pretty robust conversations about how to get to where we are going" (Harper). Henry also spoke of engagement, "We have collaborative and discussion oriented meetings rather than being top down. We get buy in and there is legitimate peer discussion so that everyone helps come up with the plan and they influence the direction." One principal echoes these jurisdictional leaders' sentiments when he stated, "I try to get out for sustained conversations with other school administrators and take advantage of my time and visit classrooms and visit teachers" (Hoogland principal). Engagement within Hoogland is about going to the people, rather than having them come to you. "We have always told our principals that your work is best done outside of your office when you are in the hallways and classrooms" (Harper).

The surveyed principals supported Hoogland system leaders' comments about stakeholder engagement. All of Hoogland's principals that responded to the survey strongly agreed that senior administration valued their participation in creating jurisdiction goals, and responded that senior administration considered principals an information source with regard to

119

creating, implementing, and measuring jurisdiction goals. All of Hoogland's principals that

responded to the surveyed indicated that they frequently or regularly worked collaboratively with

teachers in their school and supported teachers to change practice. Principals indicated that

collaboration often extended to other schools with two out of three principals indicating that they

frequently or regularly worked collaboratively with other schools and supported these schools in

their implementation of jurisdiction goals. One principal specifically commented that, "we have

ongoing collaboration time; this allocation of meaningful collaboration time at each of our

schools and monthly professional development is a primary reason why we are able to make

such progress towards aligning our practice with our goals" (Hoogland principal).

## Leusden and Utrecht

Leusden's superintendent also spoke about engagement and talked specifically about how

school leaders are key boundary spanners[6] that bridge efforts between the jurisdictional work

and the work done within the school. "I'm a big believer that the biggest ally to getting this thing

off the ground is getting the principal on board. We did not go stingy on getting the principals on

board" (Larry). Larry went on to state:

> We have a full community planning day that I facilitate and we bring all of our
>
> community stakeholders. It is our senior administration, all principals, all of our parish

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[6] Boundary Spanners are individuals who span boundaries outside and across the

jurisdiction. The identification of boundary spanners naturally implies multi-

memberships across multiple social networks and communities of practice. Given that the

focus is on their influence, it is more appropriate to delineate boundary spanning in terms

of the activities and functions they play rather than as an assigned role.

priests, all of the trustees and school council chairs, and some high school students that

join us as well. … We also have a Council of School Councils. All trustees, principals,

and schools council chairs come together. We talk about division successes, challenges,

and what help school councils need from us. … We also bring all of these people together

for our annual three-year education planning day." (Larry)

This aligns with the commentary from Utrecht's superintendent,

We need to have meaningful time to talk about those things that are important and share

plans that are in place and make improvements if necessary. … We need to engage

people to enable them to get better at what they do. My key role is to help principals be

better instructional leaders and our principals have a role …to help make teachers be

better teachers. (Ulysses)

**Summary**

This section addressed the findings around sites of diversity. It focused on the importance

of engaging stakeholders and ensuring that subsystems and stakeholders feel that their

contributions matter. The leader's work includes the need to address redundancy; that is,

enabling constraints. While this is a critical component of complex emergence, leaders must

reference sources of coherence that allow the jurisdiction to maintain focus while linking them to

diversity as sources of disruption and randomness compels jurisdictions to constantly adjust and

adapt. The section explored the role engagement played when building trusting relationships, and

how individuals must take ownership of their own learning and how these factors impact social

networks and influence the adoption, assimilation, and implementation of new knowledge. When

leaders are engaged and engage others, their influence plays an essential role in mobilizing

knowledge, as adoption is more likely if key individuals in people's social networks are willing

to support the innovation. Sites of diversity create opportunities for social networks that foster

trusting relationships. All of the leaders within this study feel that trusting relationships

strengthen the jurisdiction's absorptive capacity for new knowledge. When the absorptive

capacity is strengthened, the antecedents and readiness for change is also strengthened. The next

section will discuss how building efficacy is a strategy for diversity and contributes to aligning

research and learning practice within jurisdictions.

## Ensuring Efficacy: Implementing Strategies for Diversity

### Conceptual overview

Within this section, efficacy is approached from a three-prong perspective: building and

acting on instructional leadership, building research capacity, and providing support. Enhancing

teaching and thus learning for all students requires teachers to be highly committed, thoroughly

prepared, and well networked with each other to maximize their own improvement (Hargreaves

& Fullan, 2012). Students and schools are diverse and thus diversity should play a prominent

role in mobilizing knowledge that respects this diversity. Efforts must recognize each local

context while still maintaining a focus on and aligned with the work of the jurisdiction.

### Amersfoort

A core practice within Amersfoort is the strategic and sustained focus on building teacher

efficacy. Learning collaboratively is a core expectation and as seen in previous leader quotes,

occurs around a common focus. Jurisdiction leaders not only focus on the importance of learning

when they engage within jurisdiction networks, but ensure that instructional leadership is

occurring within school networks as well. Like all Alberta School jurisdictions, Amersfoort has a

superintendent contract and possess policies that outline their superintendent's roles and

responsibilities. Amersfoort also has a process whereby the Board evaluates the superintendent.

This evaluation structure is based on the Alberta School Boards Association's model. This model advocates that a Superintendent's role and expectations should include: student welfare, educational leadership, fiscal responsibility, strategic planning and reporting, personnel management, policy, organizational leadership and management, leadership practices, superintendent/board relations, and communications and community relations. While mobilizing knowledge is a collective endeavour within Amersfoort, "We all have a role to play in the instructional leadership within the school division" (Aaron), all of Amersfoort's leaders that were interviewed spoke about the importance of the superintendent's educational leadership role, and specifically about the division office staff's instructional leadership role. "Division office is constantly encouraging the growth of leaders in schools" (Amersfoort Principal). "I think that one of our big levers for aligning research and learning practice is our focus on instructional leadership" (Adam). "Management is a reality of our work but we want to ensure that professional learning is the core focus" (Ann). Abraham, Amersfoort's superintendent, grounds himself in his belief around ongoing learning and enhancing teachers' efficacy. Abraham expects his senior leaders to interact in a complex, non-linear fashion and use Amersfoort's social networks to enhance leaders and teachers' professional learning. As such, professional learning that enhances teachers' efficacy is the core focus for Amersfoort's instructional leaders and it is enacted in a strategic way.

> We have an instructional leadership plan in place. …Focused questions and focused
> dialogue around: How are you doing? How are things going? What is happening with
> your education plan? Where are you at with your own learning and your own professional
> goals? Where are you at with the school goals? What support do you need? …It is very

strategic and very purposeful. It just does not happen by chance. It happens by design.

(Ann)

The following comment from Adam acknowledges this crucial component of system change, and speaks to the fact that knowledge mobilization efforts are not presented as a completed policy or curricular document that must be received, assimilated and implemented by teachers but rather as a process that involves teachers, often collectively within social networks, in order to make meaning of new knowledge.

We built [our quality learning framework] around the whole concept of teacher reflection and growth…We built it on leader reflection and growth. What did you learn about that? What did you learn about your own skills? About your school? What did you learn about what is happening in the classroom? What is the plan? How are you moving that forward? The questions come out of ponderings and truly wondering what the work in the schools look like. As you reflect on the data … what have you learned? What are you identifying as target areas? And what are some of your successes that you really like to celebrate?" (Adam)

Such conversations are less about providing direction or exploring cause and effect relationships; rather they are about exploring and reflecting on process and creating next steps. Abraham exemplifies this reflective process when he speaks about key questions he regularly asks principals, "Have you had a change to sit down and reflect on your data? What have you learned? What are you excited about right now as a teacher and what do you need help with?" As principals reflect upon these questions they take account of the diversity within their context, take ownership of the process by adapting to the diversity, and thus enhance the likelihood of aligning research and learning practice.

124

Within Amersfoort, instructional leadership plays a significant role in the day to day work of the principal. Surveyed principals indicated that instructional leadership consumes 20 to 50 percent of their administrative time. Jurisdiction's prominent practices and processes to improve the system's ability to implement and sustain practices that align with the jurisdiction's goals include, "frequent instructional leadership meetings with school admin" (Amersfoort principal). Principals also indicated that efforts were multi-year and that Amersfoort's sustained focus aided in allowing them to go deep with regard to professional learning and that sustained foci allowed time to change practice.

One principal spoke specifically about one of Amersfoort's major social networks which included outside researchers. He mentioned that two prominent University of Lethbridge researchers were heavily involved in setting up their work around enhancing efficacy using research based practices and an instructional leadership model that relied heavily on teachers' professional growth plans. "We have been part of a multi-year project designed to have administrators reflect with their teachers regarding instructional practice. This project was guided by University of Lethbridge researchers who helped ensure that it was based on sound research principles" (Amersfoort principal)

As Amersfoort incorporated research into their three-year education plans, so too, schools incorporated research into teacher's learning opportunities. Aaron stated that doing so takes time and that it should be aligned with research. "There was extensive time spent on making sure that what we are doing is backed by sound research." Aaron's comment about tight alignment with research is supported by document analysis. For instance Amersfoort's quality learning environment framework references over 30 research articles including work by Hargreaves and Fullan (2012), Hattie (2009), Marzano (2007), Mourshed Chijioke and Barber (2010), Wiggins

and McTighe (2007) and Willms (2011). Again document analysis would support Amersfoort leader's comments about strong connection to research. Similar to Amersfoort's quality learning environment, their reading framework is also built around extensive research publications and provided extensive articles regarding reading readiness. The reading framework included concepts about print, word recognition, decoding, fluency, and comprehension such as metacognitive skills, vocabulary and text structure.

> Amersfoort's superintendent also commented on research alignment.
>
> We make sure that what they are doing aligns with the research and where we are heading as a division. … We navigate and negotiate a common view with our teachers that aligns with the research … with processes that really engage people so that it is not my vision, …the vision comes from the people for the people but is really in touch with educational research. (Abraham)

The following comment from Amber supports Abraham's comment about the prominent role research plays with regard to enhancing efficacy.

> When we built [our quality learning environment framework] we had a transparent process that looked at what do we know about teaching and learning. We looked at the research on assessment, the research on personalization. We saw what was coming from the province. It has a whole research base behind it and that is what we vetted it to. We went to every staff and every individual and engaged every single staff and this transparency captured us and the meat behind it is our work. (Amber)

Adam also spoke of the ongoing use of research within Amersfoort's social networks. His comments support complexity theory's self-organization concept, emergence that can occur without the assistance of central organizers.

126

We have a literacy steering committee in our school division right now and their work is

research based more than I have ever seen a group have before. …People are spending

the time investing in the research prior to moving ahead. … Research is used heavily …

we used to pick one research and just flog it to death and we no longer do that. …We

now spend a great deal of time looking at literature and using educational research to help

guide our practice. … We've built a system where it does not matter who brings the

research to the table. …Some of our earliest conversations actually came from

classrooms where teachers were engaging and finding value in the research. …It was

teachers who felt literacy was needed. I think it is very rare that we as school division

leaders approach our school leaders and teachers and educational assistants and say here

is some research. We want you to take in this research. I would say it is almost opposite. I

would say that it is their personal pursuit for professional growth.

Emergence is directly in response to diversity and its likelihood is strengthened when network

structures are less centralized. "If we want administrators standing beside teachers then our role

as a senior administrative leadership team is to standing beside our instructional leaders in the

schools" (Abraham). Within Amersfoort, "administrator meetings focus on instructional

leadership…on supporting teachers, supporting school goals, how principals interact with their

staff, how they move forward to build their school teams" (Ann).

Support is a recurring theme within Amersfoort leaders' commentary; Adam connected

the notion of support to service.

One of the things that [the superintendent] has brought to our school division is this

notion of how do we best serve others rather than serving ourselves. …It's just a key

frame as to how do you look at something. If I am going to a school to serve myself, I

will shake hands and hold babies and do those types of things. If I am there to serve

others I'm going to ask questions as to how I can help. (Adam)

This notion of service aligns with Amersfoort associate superintendents' titles: student services, learning services, corporate services and human services. Adam also spoke of support as time. "My role is to provide support. …You can't develop growth in teachers without spending time with teachers." This is in alignment with Amersfoort's superintendent comments. "If you really want teachers to get better we just don't think that they can do it without giving them some time" (Abraham). Abraham then went on to say that support is more than just time for learning, and support in areas jurisdiction leaders feel they need support. Principals and teachers must play a role in identifying their own needs. "A big question we ask at every meeting is, 'How can I help you? How can I support you? What resources do you need?" (Abraham). Within Amersfoort, support is a collaborative endeavor, as leaders work together to achieve the jurisdiction's goals.

It is working together to provide individualized support. They will ask me, can you help

us with our planning. This is what we are trying to achieve. We are wondering about …It

looks like…it might be help with. …I then provide ongoing support (Amber).

When attempting to mobilize knowledge and align research and learning practice, support is about "standing up beside teachers not hovering above them with a stick. It is about working with them and supporting them" (Abraham). Efficacy is about learning; about identifying, capturing, interpreting, sharing, reframing, and recoding new knowledge. As Amersfoort's superintendent puts it, "The core of our work starts with a growth plan…they have lots of choice around what they really want to dig into and then other processes kick in to help" (Abraham). It is obvious from Amersfoort leaders' remarks that building efficacy is not just the provision of some encouraging words; it is sufficient redundant strategies that respect and allow diversity.

The notion of complexity also relates to sites of diversity and how leaders go about

mobilizing knowledge efficaciously. An example of just one of the complex issues to consider as

leaders attempt to address diversity is the recent provincial focus on teacher efficacy and teacher

workload. Teachers are demanding time for change. "Again, I would comment on unrealistic

timelines combined with current teacher work load. Routines are necessary for survival at this

point in the profession and if we want to change those habits we need to create flexibility and

space for new information" (Amersfoort Principal).

**Hoogland**

Efficacy was a central theme woven within Hoogland leaders' transcripts. This notion of

efficacy, building teacher capacity, was spoken of by multiple leaders including the

superintendent. "My number one joy and my main interest is instructional leadership. That has

always been my interest and my motivation for getting into senior leadership" (Harper).

Hoogland jurisdiction leaders spoke of ongoing collaboration and engagement of their teachers

when they referenced their daily work and specifically when speaking of enhancing teachers'

efficacy and aligning research and learning practice. Leaders spoke of using pressure and

support; pushing, pulling, and nudging teachers in order to bring about change. They spoke of

providing focus and flexibility, of harnessing systemic diversity, building relationships, and of

the complex social networks that exist within their jurisdiction. They spoke of how they must

engage with and interact within these networks to mobilize knowledge.

Teaching is a profession with shared purposes, collective responsibility, and mutual

learning. Teaching is no longer a job where you can hog the children all to yourself. If

that's still what you believe, then it's time to leave for another profession, because unless

129

you share the responsibility and emotional rewards with your colleagues, your no longer

really a professional at all. (Hargreaves & Fullan, 2012, p. 144)

Similar to Amersfoort, Hoogland's leaders commented on the important role research played

within their jurisdiction, how it influenced existing knowledge and drove learning and alignment

of learning practice.

> If there is something I would say I am proud about, it is our use of research. Whenever
>
> we look at a program it has to be research based. …We like to develop it in house but it's
>
> based on some kind of research. …We focus on best practice and learning from one
>
> another. (Harper)
>
> What we are doing is based on research; it is not based on the latest idea, simply a new
>
> thing, or let's just give it a try. It is research based; research, says that this is best practice,
>
> so we are going to continue to do this. We may be able to learn and do it better. …
>
> Research is heavily involved. (Henry)

Given the priority placed on building teacher efficacy, the importance of learning, and aligning

learning practice with research within both Amersfoort and Hoogland, it is not surprising that

funds within Hoogland are readily available for professional learning. Henry indicated that, "We

pour a lot of money into support"; support that is often linked to research. Like Amersfoort,

Hoogland has harnessed research to build teacher efficacy and used research findings to redefine

their professional learning structure.

> We focused on Dufour's stuff to make sure that all of our professional learning
>
> communities were set up according to the model that Dufour created and we periodically
>
> checked to make sure that we are still aligning. … These research based structures set the
>
> direction for how our administrators learn. (Harper)

One example of the research that was cited by Hoogland's superintendent is that of Drake (2002) who found that there is a pattern between teacher's capability, their commitment for change, and the stage they are in within their career. Drake found that it is often the teacher who is in the middle of their career; with between four and 20 years of experience that processes the most commitment and capability for change. As Hoogland focused on instructional leadership their focus also shifted towards enhancing efficacy of teachers in the middle of their career and specifically focused on teachers' skills and commitment in and willingness to change. The goal according to Drake is for leaders to spend most of their efforts with teachers who are still open to being committed and have the judgment and capacity to be using the new knowledge.

Principals confirmed that research plays a role within Hoogland. All of the Hoogland principals who submitted a survey strongly agreed that their jurisdiction's goals and strategies are informed by research, and all are strongly aware of the research referenced by the jurisdiction when working to change teacher practice, that is, aligning teacher practice with jurisdiction goals. Principals also commented on the importance of research within their own schools. One of principals indicated, "In-servicing is consistent with and informed by research. For example, all reading programs are based on key research findings of Richard Allington and others. One can see the focus and direction are intentionally based on research" (Amersfoort principal). Another principal within Amersfoort commented that, "teacher training and evaluation of instructional strategies are influenced by Hattie and others. We focus on instructional strategies that are shown through meta-studies to be effective." Principals also used research within their own schools to mobilize knowledge. All of the Hoogland principals who submitted a complete survey either frequently or regularly implemented and used research to bring about changes in teacher practice and incorporated research findings into their school's three-year education plan. It is evident that

there is a significant jurisdictional focus on research and collaborative efforts to enhance teacher efficacy through the mobilization of knowledge and alignment of research findings and learning practice.

As Adam mentioned in the preceding section, it is not just jurisdiction leaders who bring research to the table. Two out of three Hoogland principals frequently monitor or assess research for emerging trends or developments. Research does not merely play a role behind the scene, or secretly inform jurisdiction plans and/or decisions. Within Hoogland, research is front and center. Principals and teachers are aware that research is being used and leaders regularly cite the research within conversations. Two out of three of Hoogland's principals frequently or regularly reference and discuss research based practices that informs and supports their jurisdiction and school goals with division office staff, and two out of three frequently or regularly do so with leaders from other schools, and teachers within their school.

The *Framework for School System Success* (College of Alberta School Superintendents, 2011) speaks about the importance of having the system assume responsibility for improving instructional leadership in schools and providing extensive opportunities for staff to develop expertise relevant to achieving the jurisdiction's goals. Henry's comment about strategic resourcing decisions aligns with CASS' framework.

> An awful lot of it stems from centralized cash. When we talk about resources, for example the enhanced reading program, giving students lots of opportunity to read and promoting good literature and making sure it is accessible, than we need to add to the budget of the schools. … When we introduce anew initiative there must be a lot of professional development and so we cover all of that and make sure that we are providing opportunities at divisional professional development days for schools to meet and talk

about our common direction. There is time and money provided to the schools. … In

recent years we have a tremendous amount of time and a substantial amount of money on

literacy. This is before inspiring education. We just said that we have to make certain that

our students can read and write effectively. So we started investing time and energy into

precision reading and early intervention. All of that was based on research. (Henry)

Support does not have to solely be about allocations of dollars. It can include smaller

gestures that show your support for the direction people are going and the work they are

undertaking. Adam describes how one of Amersfoort's jurisdiction leaders does this.

When somebody shares a resource with her and five others say, 'I would love that

resource.' She just orders it. Gets it in their hands and tries to support them. Who cares

where it comes from; it's a $110 bill. Let someone get excited about a resource. Let's get

it as quickly as we can.

It is gestures such as this that strengthen relationships within and between jurisdiction's

organizational structures and social networks. When teachers receive support they are able to

enhance their learning and change their practice. Hoogland's jurisdiction leaders strongly support

the efforts of school based leaders and teachers to implement opportunities that foster deep

understandings of the research upon which jurisdiction strategies are built. When offering the

support that teachers need, Hoogland's superintendent stressed that leaders must take into

account the complexity of knowledge mobilization and the dynamics within social networks and

not forget to recognize diversity; specifically teachers' diverse current state regarding their

professional practice.

We don't treat them as if they are deficient and they are all wrong and now you have to

change. What we are saying is you are right and should continue to do those things but

133

we can probably tweak things to make education better incrementally by looking at

things. (Harper)

Harold's comments substantiate that support is a strong component within Hoogland. "The

district supports and provides what teachers need. …There is no hesitation to do really good in

servicing to administrators who are interested." Principal survey results also substantiate the

importance of support. All of Hoogland's principals surveyed strongly agreed that adequate

jurisdiction support and resources are provided to bring about change in teachers practice within

their schools. As support is provided from the jurisdiction to build principal efficacy, so too must

principals support teachers in order to build teachers efficacy and teachers' ability to meet

jurisdiction goals. All of Hoogland's principals who submitted surveys frequently or regularly

provided resources and support for jurisdictional goals that require a change in teachers practice

and one of Hoogland's principals spoke about how Hoogland uses time as a key lever to support,

"time is provided for teachers to provide professional development and support to other teachers

in research based teaching practices within our jurisdiction."

**Leusden and Utrecht**

Ensuring efficacy, implementing strategies for diversity, aligns with Leusden's practice

of allocating sufficient funds towards key priorities. "We've spent a fortune sending staff to

response to intervention workshops and professional development both in Alberta and the USA

to get access to the latest research" (Larry). As previously stated, ensuring efficacy, is more than

merely providing opportunities for professional learning; it includes providing opportunities that

allow for diversity while still remaining linked to the notion or redundancy.

In terms of maximizing principals' influence as instructional leaders within the district …

we are very big on the idea here that we have to get people tools, not just capital items to

134

do their work, but big ideas or organizationally related concepts in terms of influencing

people to do their work … processes that schools can use to work together with their

learning community. (Ulysses)

Leusden's superintendent expanded the conversation about adequate support beyond the

provision of support for instructional leaders; it must include support for teachers, as teachers

become frustrated with knowledge mobilization when they don't receive the support they need.

"We need to give teachers the professional development that they need. …It leads to frustration

when you say, 'Hey let's do this' but you don't give them the training they need to do it" (Larry).

This notion of learning across complex multi-layered social networks also occurs within

Utrecht. Utrecht's superintendent, for instance, spoke about a scaffold his jurisdiction used to

guide deeper learning,

We have key look-for components, with regard to literacy for example, we expect a

diagnostic tool… complemented by behaviours within the classroom. … School three-

year education plans are very brief. They start with an inquiry question that's aligned

with the district priority? What questions are you using to guide your key inquiry? What

is your central question? Then you convert that question into a specific goal statement. …

Then we ask for, in-year indicators of success. … What would we expect to see as

indicators of success? The last component is your expected end of year results. How are

you going to make it happen? … We need to make it very clear and be highly intentional

as to what is truly important within our district to move our agenda forward. (Ulysses)

Frameworks such as these go a long way to maintain redundancy and guide instructional leaders

while allowing sites of diversity to exist that align and meet local contexts.

**Summary**

      This section addressed strategies for diversity; ensuring efficacy and described how jurisdiction leaders used their educational leadership role, often referenced as instructional leadership to support school leaders and teachers to mobilize knowledge that aligns research and learning practice. Ensuring efficacy within these high-performing Alberta school jurisdictions manifested in a culture that valued an ethos of learning, which ultimately fostered student success. I looked at the strategic efforts undertaken by jurisdiction and school leaders to build leadership capacity and how such leadership capacity can be used to bring conversations to the nested social networks and aid in the merger of research and learning practice. As leaders focus on sites of diversity it allowed for complex collaboration and professional learning that focused on self-efficacy and enhanced teacher's willingness to deconstruct received information and reconstruct the information into meaningful knowledge that they can then use. Within these jurisdictions, it is abundantly clear that there is a strong culture of collaboration that includes professional autonomy. Professional autonomy does not necessarily mean individual autonomy; it means that there is adequate diversity with regard to achieving jurisdiction goals. Leaders work with and challenge teachers to understand the data and research that is available to them and facilitate opportunities for teachers to explore their own strengths and weaknesses and explore how research can play a role in enhancing their efficacy and their practice. Furthermore, Jurisdiction leaders have shifted professional learning away from isolated one time professional developments opportunities. They have shifted their learning practice and structures and are attempting to build sustained, focused, ongoing, professional learning structures where all schools focus on a common priority such as literacy. Leaders have changed jurisdictional structures in order to facilitate and support the pursuit of jurisdictional goals using diverse

strategies that are grounded in research and take local context into account. The section ends with the role ongoing support plays and what that support looked like. Support built within decentralized networks containing complex, nested, social networks that foster complex interactions between staff and new knowledge. Such support fosters adaptation and change which is manifested in new and modified practices and networks that mobilize knowledge and align research and learning practice.

## Challenges to Balance: Absence of Policy Alignment

The intent of this research was to explore the role jurisdiction and school leaders play in mobilizing knowledge about good learning practices and to explore the complementarities and synergies between knowledge mobilization and complexity theory to determine how a systems or complexity approach can play a role in understanding and enhancing the mobilization of knowledge regarding the alignment of research and learning practice. While knowledge mobilization addresses the research practice gap, policy as a driver or fulcrum for change was unexpectedly absent from the research findings within the case studies. In most interviews and surveys, reference to policy as a driver for systemic change was all together absent. Where it was mentioned, the comments were that it was not a driver of change. Within Amersfoort, Amber for instance stated, "Policy does not play a role; it certainly doesn't drive what we are doing." Adam also communicated this lack of policy alignment, "I don't know if our policy aligns with our efforts to improve our jurisdiction." This is similar to Aaron's comments.

> Our learning is not included in policy, but certainly when you look at our quality learning
>
> environment framework there is nothing that can't fit into some aspect of the Teaching
>
> Quality Standard, we just don't use policy to guide our actions in this area. … Policy

does not play a role. I don't think policy drives what we are doing. There is certainly

policy that says follow this or that but I would not say that it is the driver.

There were similar sentiments from Hoogland's leaders. Henry and Harper for instance, stated,

"Policy is pretty vague around our core work" (Henry). "We don't have policy to say but we

have always told our principals that your work is best done outside of your office when you are

in the hallways and classrooms and working with teachers" (Harper). This sentiment is shared by

Hoogland's principals.

When district personnnel come in to observe, they are looking for best practices, staying

in touch with what is happening in the schools. That plays a part in ensuring that it is

done somewhat consistently from school to school, not policy. (Hoogland Principal)

This absence of policy alignment and policy as a driver was also communicated by

Leusden'ssuperintendent. "Policy has not really been affected by our work. You know what, I

don't know if we have adjusted any of our specific administrative procedures relative to our

response to intervention work" (Larry). Ulysses also communicated this when he stated,

Policy actually does not play a role. It's not what guides us, the reality is that I have to

present to the Board annually. It's the moral imperative of the Superintendent. To really

demonstrate that each and every learner within our system is being successful and we are

demonstrating growth within the students within the district. (Ulysses)

Jurisdiction leaders mentioned that policy comes as an afterthought and is more often

changed to align with new expectations and practices after such practices become the norm

rather than being leveraged as a fulcrum that aids and supports change. Leaders within the case

studies did not specifically describe policy as either a driver, or referenced it as a guide or lever

for change. Instead it was implied that using policy as the driver for change was actually an

undesirable top down approach for bringing about change; a rigidly hierarchical approach that would foster resistance and undermine change efforts and prevent collective intelligence.

While there was a groundswell of support for attending to redundancy and diversity within a system's view to mobilizing knowledge, there was limited attention given to policy within the feedback collected from jurisdiction and school leaders within this research. Research and learning practice alignment was very evident within Amersfoort and Hoogland from commentary within both interviews and survey, and supported by the documentation on the jurisdiction websites, but the core work and jurisdiction goals that fostered and brought about the mobilization of knowledge and alignment of research and learning practice were not driven by policy. While I did not expect such a finding, it does make sense as complexity theory underscores the fact that school jurisdictions are more than administrative structures guided by policy.

## Chapter Summary

Understanding how jurisdictions learn and how they go about bringing about improvements in teachers' practice is vital to the notion of knowledge mobilization and the process of creating and applying new knowledge that addresses the changing needs of educators and enhancing student learning. The findings presented in Chapter 5 not only support the fact that jurisdictions are as much knowledge-producing systems as they are knowledge disseminators and knowledge utilizers and advances the literature on knowledge mobilization. Findings contribute to understanding the complexity of jurisdictions and shed light on the interaction of the dynamic, overlapping, interlacing and nested networks within school jurisdictions.

This chapter examined the role jurisdiction and school leaders play in mobilizing knowledge about good learning practice and explored the complementarities and synergies between knowledge mobilization and complexity theory to determine how a systems or complexity approach can play a role in understanding and enhancing the mobilization of knowledge regarding the alignment of research and learning practice. The chapter commenced with a discussion about the need to attend to both redundancy and diversity and the merits of efficacious decentralization. It then moved into exploring sites of, and strategies for redundancy, and presented how an aligned and flexible system, a system with an explicit focus uses high expectations to enhance teacher growth, increase student learning, and bring about substantial changes in learning practice. Within the chapter, I spoke of the importance of maintaining a relentless commitment to the jurisdiction's core goals, and how these goals act as a filter to keep distractions at bay. The chapter used the participants' voices to lend credence to the importance of creating clear expectations and commitment for action within a transparent and accountable system. The findings are clear that the likelihood of systemic change is influenced when all staff and stakeholders are engaged within and between collaborative social networks that are built around core goals and built upon trusting relationships. Such networks create individualized ownership of one's learning and enhance the likelihood of aligning research and learning practice as knowledge is mobilized. Next, I addressed sites of diversity and strategies for diversity. I focused on engagement and efficacy, and then moved into a discussion on the importance of supporting ongoing learning. That is, building professional efficacy through strategic instructional leadership endeavours that further strengthen the adoption, assimilation, and implementation of best practices and research. The chapter ends with a discussion on challenges to balance; the absence of policy alignment. This section addressed the unexpected

140

finding that policy was not a driver of change but rather was aligned with research and learning practice after the fact, if at all.

Within both Amersfoort and Hoogland, the heart of the learning process is the role that the information plays, how it moves between, and interacts with, agents and subunits. Within the chapter I have tried to address the nature and strength of the patterns of interaction which are pivotal to understanding the relationship between individuals and organizational goals and change. Chapter 6 will include a refinement of the conceptual framework initially introduced in the beginning of Chapter 5 and supported by the findings. This refinement will be based on the fact that the case studies are actually very similar, and contain aspects of an even grandeur system.

## Chapter 6: Discussion, Implications, and Conceptual Refinement

This chapter was founded on the findings from interviews, surveys, and document analysis within two high-performing Alberta school jurisdictions. Superintendent interviews from two further high-performing Alberta school jurisdictions strengthened the findings and challenged assumptions. The intent of the research was to explore the role jurisdiction and school leaders play in mobilizing knowledge about good learning practices and explore the complementarities and synergies between knowledge mobilization and complexity theory to determine how a systems or complexity approach can play a role in understanding and enhancing the mobilization of knowledge regarding the alignment of research and learning practice. Rather than limiting the exploration of the role jurisdiction and school leaders play in mobilizing knowledge with a definition of leadership as influence, my intent was to expand this exploration to include the specificity of leaders' practice and their behaviours that may account for such influence in terms of knowledge mobilization and complexity and systems theories. Knowledge mobilization is best seen as embedded within systems, the dynamics of which we need to understand. Diffusion and dissemination processes and the relationships that shape these processes are themselves shaped, embedded, and organized through structures that mediate the types of interactions that occur. Jurisdictions including individuals' efforts to adopt, assimilate, and implement learning practices and research are shaped by culture, structures, priorities, and capacities, just as culture, structures, priorities, and capacities shape how jurisdictions adopt, assimilate, and implement learning practices and research (Best & Holmes, 2010).

Chapter 6 is built upon the findings of Chapter 5. Within the chapter I present a conceptual model that describes the role jurisdiction and school leaders play with regard to knowledge mobilization. The model was developed in conjunction with the reporting of findings

in Chapter 5 and is consistent with the goal of this research, to explore the complementarities and synergies between knowledge mobilization and complexity theory.

## Trans-District Conceptual Framework

My findings support that a systems or complexity approach can play a role in understanding and enhancing the mobilization of knowledge. Within this section of Chapter 6 I present a conceptual framework, a complex network of interlinked concepts that together provide a comprehensive understanding of how leaders mobilize knowledge within these high-performing Alberta jurisdictions. The framework is not merely a collection of concepts but, rather, a construct in which each concept plays an integral role and interacts with and influences the other concepts. It emphasizes understanding instead of providing a causal or analytical explanation of actions and does not attempt to predict the outcome of specific actions. The conceptual framework (see figure 7) emerged from the key findings from Amersfoort and Hoogland school divisions, described within Chapter 5. These jurisdictions' core work focused on enhancing student learning, creating a teacher growth ethos that emphasized the value of learning and putting into action best practice and research-based strategies. Jurisdiction leaders played a key role in activating this ethos by ensuring learning practice and research were embedded within teaching practice and applied to the local context. In order to foster such an ethos, relational trust is a foundational precursor and one that must continually be nourished in order to maintain and build relationships.

The conceptual analysis undertaken within this study identified a complex interplay of three facets that define the core work of the jurisdiction: (1) enhancing student learning, (2) ensuring best practice and research, and (3) establishing relational trust (see figure 7). These three facets are brought to fruition via the complex work within five interlinked dimensions

143

presented in the findings of Chapter 5: (1) efficaciously decentralizing: attending to both redundancy and diversity, (2) explicitly focusing: identifying sites of redundancy, (3) enacting expectations: implementing strategies for redundancy, (4) engaging expertise: identifying sites of diversity, and (5) ensuring efficacy: implementing strategies for diversity. The framework emerged from the findings of Chapter 5 and provides a visual representation built upon a rich picture of the factors affecting knowledge mobilization, and research and learning practice alignment efforts within the Alberta school jurisdiction cases.
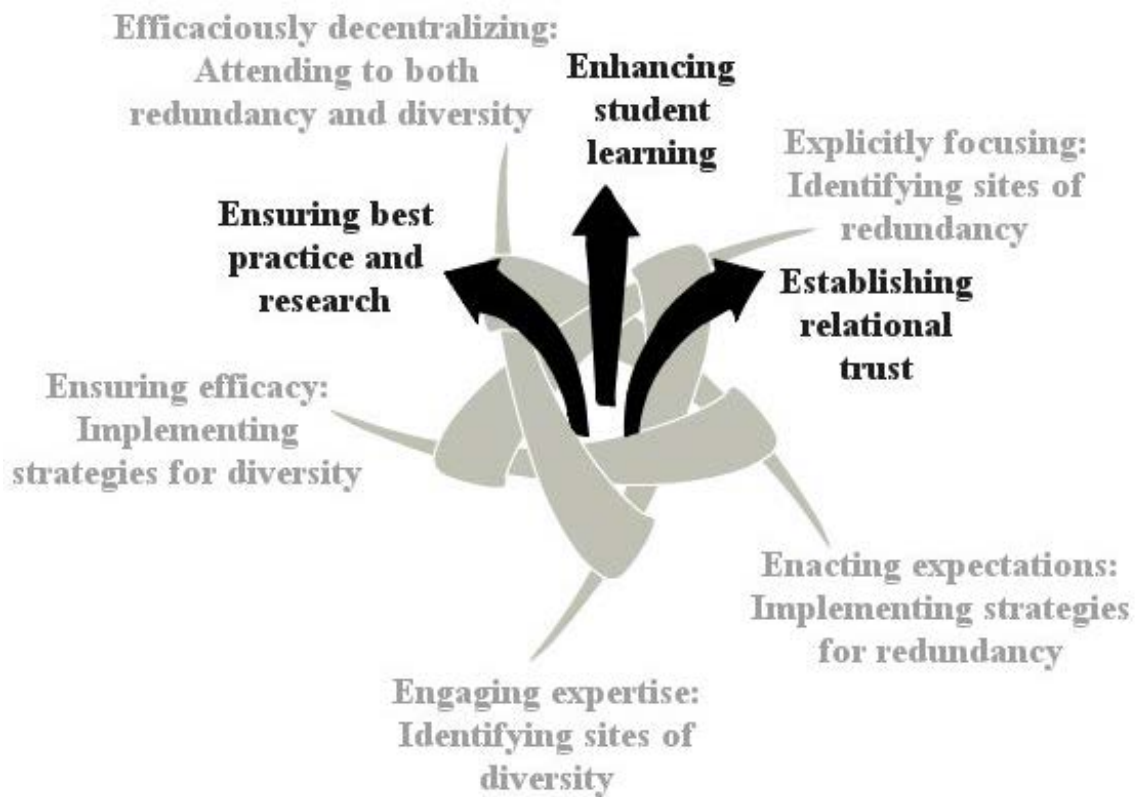


*Figure 7. The Complexity of Interactions that Support the Core Work of the Jurisdiction.*

Self-organizing, constantly adapting to change, and driven by interactions between systems components and active learning, the three dimensions and five concepts that make up the framework incorporate feedback loops and reflective shared learning around common foci.

The importance of coordinating these five powerful leadership dimensions across multiple levels of the jurisdiction will contribute not only to ensuring readiness and sufficient capacity before launching change, but will fulfill the critical role of strategic communication and ongoing engagement to catalyze, coordinate, and increase the effectiveness of knowledge mobilization and research and learning practice alignment.

### Efficaciously Decentralizing: Attending to Both Redundancy and Diversity

In terms of triggering and supporting knowledge mobilization in school jurisdictions, my data suggested that leaders must attend to both redundancy and diversity. Attending to redundancy and diversity within the context of this study is interpreted to mean efficaciously decentralizing. Redundancy, which will be addressed in more detail in subsequent sections, is about duplications that enable interactions among affiliated but independently acting agents that contribute to grander collective possibilities. It is about repeats of those aspects that strengthen knowledge mobilization endeavours as they reinforce and allow for agents to compensate for others' failings. In the case of the high-performing Alberta school jurisdictions within this study, my findings suggest jurisdictional redundancy focused on enhancing student learning, ensuring research and learning practice align, and establishing relational trust. As leaders within these jurisdictions strived to create an efficacious decentralized network they attended to the optimization of emergence. That is they addressed diversity and redundancy through an efficacious decentralization of control in order to allow for the transformation of learning. Within the case studies, leaders worked to shift their network structure towards an efficacious decentralized network in order to optimize interactions and focused on nodes, linkages, multiple-level influence and emergence around common foci. Rather than merely managing the implementation and uptake of knowledge, my data shows that jurisdiction leaders created

145

opportunities for teachers to interact with research and knowledge from personal practice and allowed teachers to make meaning from these interactions. Thus drawing on the complexity literature, it bears emphasizing that redundancy is about opportunities to interact with research and data to foster internal coherence. As such it is a necessary component for complex co-activity.

Diversity, also discussed in greater detail in subsequent sections, is closely linked with a systems' creativity or intelligence. By intelligence I do not mean diverse talents within a system, but rather the appropriate interaction of such talents. The observation of regular reference to flexibility for local context within the data is evidence of attending to diversity. Diversity allows for the interaction of talents and it is this interaction that allows for the transcendence of the system above the sum of its parts given that this diversity is often the source of possible responses to emergent circumstances. A crucial point here is that leaders do not know in advance what sorts of variation will be necessary for appropriately intelligent action to achieve the jurisdiction's goals, hence the need to ensure and maintain diversity in the system. The finding that redundancy and diversity are essential to mobilize knowledge has deeper implications for leaders as leaders need to find balance between minimal diversity which is most valuable in relatively stable settings and maximum diversity which is more appropriate in more volatile situations.

Efficaciously decentralizing is as much about "dispersing control around matters of intention, interpretation, and appropriateness" (Davis & Sumara, 2009, p. 42) as it is about learning that is distributed among agents and across the different levels of the organization. Amersfoort's leaders, for instance, relied heavily on the professional growth plan as a means of mobilizing knowledge and dispersed control and authority over teachers' learning. This reliance

146

on professional growth suggests that Amersfoort's leaders empower their teachers to pursue intelligent action but data also suggest that the leaders provide direction with regard to aligning research and practice via redundant structures such as ongoing dialogue and expectations around professional growth plan linkages to jurisdiction three year education plans and external documents such as the *Teaching quality standard applicable to the provision of basic education in Alberta* (Alberta. Lesislative Assembly, 1997), and the *Principal Quality Practice Guideline: Promoting Successful School Leadership in Alberta* (Alberta. Alberta Education, 2009). The salient feature of efficacious decentralization is about balancing the tension of diversity and redundancy given the need for both creative randomness and identity-preserving coherence. Such coherence allowed the high-performing jurisdictions within this study to maintain their focus of purpose.

Whereas diversity is outward-oriented with regard to enabling novel actions and possibilities, redundancy is inward-oriented, enabling the moment-to-moment interactivity of the agents that constitute a system. Efficacious decentralization aligns closely with Davis and Simmt's (2003) notion of enabling constraints and refers to the conditions that help to determine the balance between sources of coherence and sources of disruption and randomness. My findings suggest that efficaciously decentralizing would be better served by proscriptive as opposed to prescriptive rules. That is, it involves boundary setting activities focused around what must not happen as opposed to setting down authoritative direction as to what must happen. Inherently my findings are reminiscent to the findings in other complexity literature that are about nurturing and facilitating the conditions that give rise to emergence given that one cannot impose diversity from the top. In all of my interviews it was noted that leaders fostered efficacious decentralization by nurturing sufficient focus around common understandings,

expectations, and collective rules of engagement aimed at goal achievement. Leaders encouraged coherence by expecting everyone to be pursuing the same goals, while simultaneously allowing for sufficient serendipitous randomness by not directing the path schools take to achieve those goals, or restricting what goal achievement specifically looks like. The pragmatic advice to leaders then is that mobilizing knowledge is neither a matter of management nor a top down rigid structure that must be adhered to. Rather, in network terms, mobilizing knowledge and aligning research and practice is about the appropriate levels of redundancy and diversity, densities of trans-level interactions, and information flow which need to be properly influenced by positive and negative feedback. From the findings, effective knowledge mobilization appears to occur when networks are efficaciously decentralized and leaders attend to the vibrancy that arises in the mix of redundant and diverse elements and the sources of its stability and creativity. This finding translates into a recommendation to leaders; that is, leaders need to attend to redundancy in order to foster goal attainment and that the purpose of attending to redundancy is to orient, not to control. A key finding within my case studies is that leaders are attempting to find a balance between redundancy and diversity and striving to ensure that these elements are co-existing in productive tension. My analysis would indicate that co-existence is essential for knowledge systems.

When attending to redundancy and diversity within an efficacious decentralized network it appears that the importance of personal and group interactions is not as important as the interaction of ideas and other manners of representation, for it is collective knowledge that leads the potential for action, not merely the gathering of individuals. This is evident within the case study discourse as leaders talk about fostering opportunities for interaction with research, not opportunities for teachers to come together. What this observation suggests is that leaders must

make provisions for the representation and interaction of ideas within and amongst social networks. Leaders must relax control and relinquish their desire to strictly control the structure and outcome of collective gatherings, social interactions, and interpretive possibilities. Within the case studies, the findings appear to indicate that leaders do not impose their expectations of behaviours or actions; rather they merely condition possibilities around core foci. They focus their attention on creating appropriate levels of complex activity that allow for the manifestation of group participation in the creation of possible futures through expression and engagement between members of a complex adaptive learning system. These leaders do not approach knowledge mobilization via the longstanding tendency of importing and implementing external frameworks and rigid structures around best practice from other domains. Complexity research does not allow such unidirectional borrowing. Rather, my analysis would indicate that within these high-performing Alberta school jurisdictions there is an expectation of participation in the emergence and evolution of insights from complex interactions with research and generation of new knowledge that will enhance student learning.

Within the case studies, leaders' decisions as to how they champion research and how they undertake their efforts to implement and sustain changes in teacher practice that align with the research depends on the influences these leaders have on the various networks within their jurisdiction, the influences of the networks on the overall organizational structure, and teachers' individual and collective practice. It is clear from the case study findings that social networks play a key role in aligning research and learning practice as it is through social networks that new knowledge is shared, interpreted, reframed, and recoded within these jurisdictions. In this work, social networks also create opportunities to disseminate, diffuse, promote, assimilate, and implement the adoption of new knowledge which leads to changes in practice. These social

interactions then, allow for meaning making for teachers and foster changes in practice. In essence, they foster knowledge mobilization.

I am by no means arguing that all networks or interactions within networks need to be formal, the case study findings would however suggest that formal jurisdiction wide network initiatives aimed at sharing ideas and mobilizing knowledge have the greatest success when the topic that is chosen, the capacity and motivation of participating members, the receptivity to change, and the quality of support have sufficient redundancy and diversity. It is evident from the discourse that leaders within the case studies have reduced jurisdictional foci, and are sustaining foci as a means of ensuring sufficient redundancy. While the various approaches and practices that can be used to spread innovation across a jurisdiction can be thought of as lying on a continuum between pure diffusion (unplanned, informal, and more independent) and active dissemination (planned, formal, and often more cohesive), it is evident that the high-performing jurisdictions within this study approach their work and pursue their core foci and primary goals by shifting their network towards a more decentralized structure. I postulate that this may have contributed to the success of the jurisdiction for as the leaders shifted their jurisdiction's network structure from a fragmented network that lacked cohesion and shifted it towards an efficaciously decentralized structure, the leaders were able to more effectively ground their strategic approach and built consensus around core expectations for professional practice by guiding and influencing pressure, systemic support, and accountability. Within such a network, emergence of new knowledge, whether based on best practice or research is strongly influenced by and leveraged upon the structure and quality of the social networks within which individuals interact.

Jurisdiction leaders' commentary around attending to redundancy and diversity within an efficacious decentralized network supports the notion that jurisdictions are complex systems

composed of subagents and units that are linked together by agents commonly referred to as

boundary spanners. Based upon leader's interviews and surveys, there appears to be

distinguishable and intimately intertwined hubs and nested networks existing within the same

space; in particular with regard to aligning research and learning and teaching practice. Within

such complex networks, leadership needs to rely on facilitation and empowerment, participatory

action and continuous feedback (Best & Holmes, 2010). To elaborate, as leaders shifted their

jurisdictions from a fragmented network structure to a decentralized network structure they also

shifted from a command and control approach as is the case in strongly centralized networks to a

facilitative and empowering approach, from delegation to participation, and from dictatorial to

collaborative leadership. Within their decentralized networks leaders within the case studies

addressed redundancy and diversity and were able to ground decisions in the jurisdiction's core

goals. Through the collaborative development of these goals commitment towards goal

attainment was also strengthened. Unlike fragmented networks, decentralized networks create

structures that allow decisions around knowledge mobilization at the subunit level to be made

collaboratively, often with input from more neutral people, not as heavily invested in the local

site. From my analysis, while diversity is vital for knowledge mobilization, the inclusion of

boundary spanners means that local factors that can act as barriers are diminished. In other

words, sufficient systemic redundancy plays a role in the change process and diminishes negative

factors that prevent the initiation of changes in practice at the local level while diversity allows

for the consideration of local context. In truth, an efficacious decentralized network is a robust,

complex, and nested decentralized network built around common foci, with few core goals that

radiate out. A system that possesses sufficient redundancy to align all the work and learning that

151

is undertaken within the jurisdiction while providing for diversity and flexibility at the local level.

With regard to Amersfoort, one of the prominent themes emerging from the findings was the linkage of the term alignment to redundancy. While similar, alignment "can be a tonic or a poison for complex co-activity, depending on how it is deployed and the affordances it offers" (B. Davis, personal communication, January 12, 2015) and can have the potential to be suppressive when approached from a centralized perspective. The implications of this subtle difference can be significant. When the pressure to align is overbearing or too directive, self-organization, also known as emergence, becomes restrictive, and jurisdictions are more preoccupied with, or distracted by, the maintenance of social units rather than the vital educational issue such as the production of complex knowledge. Advice to leaders then is to implement the provision of diversity within the system, to prompt the emergence of a social collectivity and the emergence of collective generated insights that typically surpass the insights of any individual member.

The findings that there is creation of a common system focus and emphasis on tight sufficient redundancy supports the research of Drath et al. (2008) in that jurisdiction leaders' foundation for thinking has shifted from leader and follower to a focus on direction setting via common goals; redundancy around the coordination of knowledge, work, and commitment; and the willingness of individuals to forego their own interests and benefits for the collective good. The qualities of redundancy and diversity can be used to characterize an important difference between various approaches to mobilizing knowledge and aligning research and practice. To that end, the findings would indicate that they are not merely useful tools for after-the-fact analyses

152

but can guide the structuring of teachers' engagements with research and practice with the system's focus.

When leaders attend to both redundancy and diversity, knowledge mobilization is not bound by prescriptive rules. Rather, agents and subunits are able to acknowledge their context; a dimension of system's thinking that appears to be critical to the learning process. Rather than forcing schools' culture and ethos and teachers' practice into a rigid structure or predefined prescriptive practice, diversity, as demonstrated by the findings, allows for personal meaning making. While efficacious decentralization is a necessary condition for complex co-activity to arise or be expressed in appropriate measure within a system, it is not sufficient. Efficaciously decentralizing and adequately addressing redundancy and diversity will not ensure emergence, but the absence of any of these factors will certainly suppress the possibility of emergence (B. Davis, personal communication, March 3, 2015). My findings are reminiscent of Davis' research in that leaders then are challenged to ensure sufficient redundancy at the system level to render it coherent, yet a good deal of diversity/autonomy among system agents to allow for the emergence of intelligent adaptive systems (B. Davis, personal communication, January 12, 2015).

## Explicitly Focusing: Identifying Sites of Redundancy

My findings suggest that the explicit foci within the high-performing Alberta school jurisdictions within this study all relate to a specificity of focus on enhancing student achievement and overall student success. They include the pursuit of fewer goals, pursued more deeply, more effectively, and over a longer period of time. Within each of the jurisdictions, there was evidence of a core goal, as evidenced by jurisdiction's three-year education plan, and interviewee and survey comments. Hoogland and Utrecht's core focus was enhancing literacy, Amersfoort's was the pursuit of a quality learning environment, and Leusden's was a response to

intervention framework, a culture that adapts in order to meet the needs of each student. Hoogland harnessed the power of the quality learning environment as a lever for their literacy work and tapped heavily into teachers' professional growth plans to ground individual teacher's efforts. The intent of my research, is not to explore what knowledge jurisdictions are attempting to mobilize. Jurisdictions are complex networks and strengths, weaknesses, and contexts are too diverse to simply transfer knowledge from high-performing jurisdictions to low performing jurisdictions. Rather my intent is to enhance leaders' understanding of knowledge mobilization by focusing on the defining characteristic by which the key foci and innovations were implemented, whether it was literacy, a response to intervention philosophy, or the creation of a quality learning environment. As my research unfolded, insights were made as to how leaders built and unfolded their strategic plans. Findings indicated that plans were built around an explicit focus that the entire system owned and relentlessly pursued. Data also revealed that each of the jurisdictions utilized ongoing feedback loops and incorporated continual adjustments for and responses to the complex interplay of the three facets and five dimensions to bring their strategic plan to fruition. Within each of the jurisdictions, leadership practices influenced the focus, process, and context within which new learning took place. In other words, leaders, *influence how it happens*, rather than, *let it happen*. If one was to look deeper at each jurisdiction's core work, one would notice a significant focus on learning as opposed to performance. That is, a commonly shared belief was that goal attainment occurs through improvement and ongoing learning; teachers learning collaboratively and working to improve student learning. Rather than merely focusing on performance goals, the findings suggest that the core work of each of the high-performing jurisdictions was their pursuit of learning goals, and their ongoing endeavor for self-improvement. The findings would suggest that the leaders' core

154

work was the development and implementation of a systemic structure and process that fostered knowledge mobilization. Within these jurisdictions, leaders' core work, their primary focus, was fostering opportunities for interaction of teacher practices and research-based practices that fostered collective meaning making with regard to strategies, processes, and procedures that improve teachers' practice. Such work can be interpreted to mean that the focus was on meaning making, through the ongoing interplay of existing and new knowledge and skills within the jurisdiction's social networks.

The deeper implications of the findings would suggest that the pursuit of an explicit focus within large systems, such as school jurisdictions, is more complex than simply preventing bad practice or prematurely selecting effective strategies and attempting to implement them. My findings suggest that within these complex systems, leaders' efforts focused on redundant practices that allow for diversity. This observation can be evidence that redundancy and diversity affects the quality of daily classroom practice and therefore has the potential to have a powerful impact on student learning.

In all the case studies it was noted that the jurisdictions' strategic focus enabled them to create and support complex structures that ensured goal-oriented actions and accountability, which further aided in adoption, assimilation, and implementation of collective knowledge, best practice, and research. Drawing on the complexity literature, the problem with complex systems however is that boundaries tend to shift as subunits and agents continually exchange information within multiple intimately intertwined networks. Within these ambiguous boundaries, leaders attempt to address redundancy and align efforts but the problem is that intelligent group action is dependent on the independent actions of diverse individuals, who often act out of self-interest (Davis & Sumara, 2006). Lack of redundancy can therefore be a problem; as too much

innovation has a detrimental impact on achievement given that proliferation of initiatives often means the focus is fragmented, as is the approach to improvement. While each initiative may be a good idea, each takes resources away from the other, add up to teacher burnout, and often do not align with the whole (V. Robinson, personal communication, January 30, 2015). Such problems exemplify why school jurisdictions are complex systems. The far reaching advice to leaders stemming from these repercussions is that they need to maintain redundancy around an explicit focus.

Explicitly focusing also means possessing a clarity of focus, both in terms of being able to understand process and product; understanding what is required to achieve the outcome and what it could look like when one achieves it. Within the case studies, my findings suggest that system leaders relied heavily on their three-year education plans. Mandated by Alberta Education, these plans have strict guidelines around their content including goals, strategies, targets, and indicators of success based upon provincially collected data sources. There is however flexibility within the approaches jurisdictions utilized to achieve their goals and jurisdictions took diverse approaches when addressing Alberta Education's four broad goals: An excellent start to learning, success for every student, quality teaching and school leadership, engaged and effective governance (Alberta Education, 2014). Within the case studies, evidence would indicate that school three year education plans act as the lever for redundancy as leaders aligned efforts within the jurisdiction; that is school three year plans were aligned to the jurisdiction's three year plan and teacher professional growth plans were linked to school goals. Jurisdictions also provided a provision for diversity as school three year plans incorporated the local context and influenced the jurisdictional work at the school level.

Within human systems, such as the high-performing Alberta school jurisdictions within this study, redundancy was articulated as *we-ness*, a strong sense of *us*, around shared work, and common goals. This we-ness was articulated by leaders throughout the interview discourse via the use of pronouns that revealed a sense of cohesion. Interviewees' usage of first person, plural pronouns, as opposed to third person, plural pronouns was extensive (see Table 6) and created specific relationships, meanings, and assigned a sense of objective collectiveness to phrasing and the tone of the discourse in general. Natural language provides the possibility to build abstract terms out of concrete concepts by performing a morphological transformation on single word forms. Thus words such as we, us, our can be used to capture the neologism we-ness. This finding demonstrates that cohesive usage and articulation of pronouns such as *we, us,* and *our* can be used to flag sites of redundancy, as articulated by members of the learning system. As these sites of redundancy are articulated, they create the neologism we-ness which reduces fragmentation with regard to enhancing teacher learning, building teacher capacity and intentional professional learning. As leaders fostered and supported this we-ness, the findings suggest that the jurisdiction's few and meaningful goals become activated in a collaborative fashion through repetitive messaging that communicate what is important and valued. The implications of this finding are directed at leaders within jurisdictions and their roles in mobilizing knowledge that influences and contributes to the jurisdiction's vision and goals given that this sense of we-ness is directly related to a sense of belongingness and a psychological sense of community which enables a collection of people to experience a unity of feeling and purpose and desire to work in harmony toward a common goal. Although a definition of we-ness may be vague and difficult to operationalize, my findings around social cohesion is strengthened by developing a concept of structural cohesion based on network node connectivity. The

157

empirical applicability of cohesiveness and nestedness is demonstrated with reference to the frequency of the terms we, us, and our as opposed to *they* and *them*. By looking at both the idiosyncratic and common narratives I gained greater understanding of the nuances of the data with regard to how the narrative tells the jurisdiction's story, how it allowed for the visualization of this sense of belongingness, identity, and commitment in the context of a functional group or collective, and how it was manifested in the form of concrete decisions, behaviors, and commitments.

The relative proportions of first person pronoun types within interviewee transcripts that are grammatically and structurally cohesive are approximately three quarters first person plural (we, us, our), utilized approximately 1900 times, as opposed to one quarter first person singular (I, my), which are utilized approximately 750 times. The relative proportions of plural pronoun types that are grammatically and structurally cohesive are also approximately three quarters first person plural (we, us, our), utilized approximately 1900 times within the nine interviews, as opposed to one quarter third person plural (they, them, their), utilized approximately 700 times. Examination of the overall pronoun usage revealed that the vast majority of the time interviewees used the pronoun we, a first person plural pronoun, used over 1350 times in the interview transcripts (see Table 6).

Table 6

Pronoun Frequency

| Pronoun | No. of Citings | Pronoun Type |
|---------|----------------|--------------|
| We | 1359 | First Person Plural |
| Our | 463 | First Person Plural |
| Us | 75 | First Person Plural |
| They | 405 | Third Person Plural |
| Them | 170 | Third Person Plural |
| Their | 143 | Third Person Plural |
| I | 628 | First Person Singular |
| My | 144 | First Person Singular |

First person pronoun phrases using we such as those displayed in Table 7 are scattered throughout the interview transcripts. Examination of the interactions between local coherence and choice of referring pronouns demonstrate that the relationships among such terms related to the focus of attention, choice of referring expression, and perceived coherence of utterances within the discourse. The term we was typically connected to a referent that exemplified a cohesive group working to achieve the jurisdiction's goal/focus. The majority of usage modeled redundancy and coupled with ongoing check points for evaluating progress, within a diverse context, usage of such a coherence redundancy strategy has significant implications for communication with regard to mobilizing knowledge and aligning research and learning practice.

Table 7

First Person Plural Pronoun Phrases Utilizing the Term We

We focus on
We have
We implement
We look at
We believe
We think
We expect
We want
We encourage

159

**Enacting Expectations: Implementing Strategies for Redundancy**

Just as the data suggest that there is an explicit focus around the core work of the jurisdiction, the data also suggest that system leaders have an explicit and focused expectation for schools to follow through on that core work. This expectation for action is nested within action-oriented endeavours such as transparency and accountability practices. Findings from the jurisdictional case studies revealed that all leaders articulated clear and focused expectations about what needs to be done and what work schools need to focus on. Data analysis indicated that system leaders don't merely state their expectations but endeavor to instill a propensity for action within the jurisdiction's efficacious decentralized network. Network theory espouses that decentralized networks facilitate implementation of system goals. Within the case studies, this is done via redundant strategies such as accountability practices and continual dialogue around expectations and progress. As jurisdiction leaders moved away from fragmented networks they were able to implement concerted efforts to use evidence to inform students, staff, parents, teachers, and stakeholders of progress, and support staff with improvements in student learning.

The implications of these findings is that leaders' efforts are not merely hollow attempts at mobilizing empty words; rather their efforts translate into expectations that compel others to take action and exert pressure on schools to achieve the jurisdiction's core goals. Collective effort and commitment are enhanced when individuals understand leaders' expectations and when leaders' expectations are specific enough to provide guidance and support. Evidence reveals that they are also enhanced when individuals are personally committed, are involved in the creation of jurisdictional goals, feel they have the capacity to achieve the goals, and when agents and subunits are able to see and monitor their progress towards achieving the goals. Such accountability creates dynamic, non-linear, and unpredictable feedback loops that cause

160

cascading changes within the jurisdiction. Within Amersfoort and Hoogland, formal expectations and reporting procedures seem to be filling this function. This is similar to Leusden and Utrecht.

When leaders or teachers don't see a difference, or understand, how what they have now or are doing now differs from what they want; when they don't perceive a discrepancy or problem with current practice, or see any worth in acting, they will not take action (V. Robinson, personal communication, January 30, 2015). Within the case studies, leaders distributed their authority and enacted expectations that communicated that knowledge mobilization and learning that fosters changes in practice is everyone's core work. This finding is reminiscent of Leithwood and Louis' (2011) finding that the greatest impact of sharing may be the reduction of teacher isolation and enhancement of commitment. Within these jurisdictions, it is evident from the findings that people are working together to build each other's capacity. System leaders are holding school leaders accountable and are actively engaging them in ongoing conversations about the work and asking them to demonstrate the progress being made. Jurisdiction leaders are transparent in their practice. Principals know what jurisdiction leaders' expect, know what they need to do, know that they are being held accountable, and know that their own actions and the actions of others instill a propensity for further action.

While expectations about transparent processes can create stress for both jurisdiction and school leaders, it can provide great insight into jurisdiction and school *mokitas*[7], the elephant in

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[7] Mokita is a term from Papua New Guinea, and refers to "the truth we all know but agree not to talk about." The Papuans of New Guinea judge the health of any community by the number of "mokitas" that exist within it. Mokita can do a lot of damage if the person on

the room, and shed light on what steps should be taken next to address the elephant and remove it from the room. The implications are that when leaders have the courage to address these unspoken issues head on, they show that, above all else, they care most about the health of their system and its people and that they are prepared to make difficult decisions to mobilize knowledge and align research and learning practice.

All too often leaders view one's lack of action or mobilization as resistance. Ironically, resistance may, or may not, play a role within one's lack of action or follow through with regard to change endeavours. Within these jurisdictions, the findings support the belief that leaders need to reframe their thinking about such inaction and attributed it to a theoretical difference between individuals, about what constitutes best-practice. Such a shift in thinking takes the disagreement out of the realm of personality and conflict and brings it into a much more impersonal realm; a theory of action that explains people's actions based on their values and beliefs. This means that as leaders strive to understand a person's theory of action they begin to understand why people are doing or not doing what we believe they ought to be doing (Robinson, 2011). Enacting expectations and approaching commitment from this perspective allows us to realize that schools are diverse and staff typically want to change but may not see the benefit of mobilizing certain knowledge or may lack the knowledge and/or skill to change practice. These findings would suggest that the mistake we, as leaders, must avoid is targeting the actions we want to change, without first understanding why those actions are being undertaken.

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the other end of it is suffering from denial as it allows them to continue in their false sense of reality.

162

As leaders we often ask why individuals are doing what we want them to stop doing. At other times we place our efforts on merely implementing strategies or bringing about change and become frustrated when others do not acquire or take up the strategy. Often we attempt to engage people in our change process, based on the belief that when they are active members in our knowledge making endeavor that they will become committed to mobilizing knowledge and bringing about changes that align research and learning practice. The nuances and implications of such failures with regard to knowledge mobilization are grounded in the usage and meaning of the first person plural and third person plural pronouns. Pronoun resolution of these statements reveals a divide between them and us and highlights a chasm that must be addressed with regard to those that decide what the change is and those that need to make the change. Advice from the nuances of such findings to those leaders attempting to implement change is that efforts are more likely to fail if the effort is not supported by first person plural pronouns. Leaders need to be cautious of their language when speaking about change endeavours. Pronouns are a site of redundancy when first person plural pronouns are used as they instill a we-ness, cohesion, where everyone is committed and collaborating towards achieving a united goal. Pronoun resolution of the interview transcripts revealed that pronoun referents influenced pronoun selection. Within the transcripts, interviewees such as Harper's, Hoogland's superintendent tended to use first person plural pronouns, such as the term we and our, more often in conjunction with redundant strategies. Some examples include: "our teams come together", "we are focused on increasing reading", "we talk about our overarching vision", and "everything we do is in our plan". Within Abraham's transcripts, Amersfoort's superintendent, first plural pronouns were also especially common. Examples include: "our vision for the future", "the core of our work", "our vision statement that are in our vision for the future is that we want to be an even more collaborative

community", and "we don't call it an initiative. We call it our plan and we are sticking to it".

Third person plural pronouns, such as the term they, were less frequently used and when they were they were connected with divergent strategies that often occur at decentralized nodes. "They [principals] have all types of autonomy" (Henry). "They [principals] put together their strategies. … They [principals] are going to work towards the goals" (Ann). Third person plural pronouns were also used when referring to students or groups of individuals that did not specifically include the individual speaking. "I think they [teachers] have a lot more commitment than compliance" (Abraham). "They [principals] get the same message from all of us and they [principals] are all equally as passionate about what we are after" (Abraham). "I think they [school staff] own it" (Amber). Third person plural pronouns were also used when citing ineffective strategies that leaders were attempting to change. "They [principals] are doing some useless roles and why, because they [principals] have always done it" (Abraham). "For those rare administrators who want to duck, they [principals] realize that this is not going away. They [principals] realize that I might as well get onboard" (Abraham).

Overall, interviewees tend to refer significantly more frequently to first person pronouns. This suggests that the usage of pronouns is linked to the intended referents and is more likely to be used with a more cohesive discourse pattern in which speakers focus their discourse on we-ness, on group goals, and redundancy more so than diversity. Specifically, when participants chose to speak about the working together, and creating common foci towards the endpoint of jurisdiction efforts, the attainment of the jurisdiction vision, findings would show that leaders tended to utilize first person plural pronouns. Leaders tended to use third person pronouns to indicate that there was diversity, flexibility to address local context. The implication from these

164

findings is that leaders should be attuned to pronoun usage as it is a powerful strategy of pragmatic intervention.

While the majority of the pronoun usage within the discourse aligns with this analysis, there were locations within the transcripts where the term we, was used within non-cohesive phrasing. In alignment with the findings, such phrasing undermined redundancy. "We [division leaders] first train them [principals and teachers]" (Harper). "If we [division leaders] see problems we [division leaders] gather them, we [division leaders] bring them back to the research" (Harper). "We [division leaders] have a conversation with them [principals] as to how are they [principals] are going to accomplish the goals that we [division leaders] expect of them [principals] as instructional leaders" (Aaron). While such comments were isolated within the transcripts, strong advice for leaders is that the nuances of such pronoun usage suggests that leaders need to be exceptionally sensitive to pronoun selection as the salient implications with regard to knowledge mobilization can be significant.

### Engaging Expertise: Identifying Sites of Diversity

My findings demonstrated that engagement emanated from structures and opportunities for collaboration built upon trusting relationships that enabled personalization and ownership of learning. Findings also suggested that staff engagement was integrally intertwined around both an explicit focus and high expectations that were manifestations stemming from an efficacious decentralized network. Evidence from the data suggests that as leaders meaningfully engage staff in direction setting activities and the plan and work that brings goals to fruition, that teachers became empowered to take ownership of the work. This observation supports the finding that when leaders expect multi-stakeholder engagement and collaborative endeavours around the creation and implementation of a common goal it not only fosters awareness of that goal but

strengthen relationships. Trust appears to be an outcome of engagement, rather than a precondition and is enhanced by interpersonal respect, personal regard for others, as well as leaders' competence, and personal integrity (Leithwood & Louis, 2011; Robinson, 2011). Within the case studies Amersfoort foster engagement by approaching their complex problems using an inquiry problem solving approach in which they treat their own views as hypotheses rather than fact and treat others as well intentioned individuals. When leaders within Amersfoort approached the jurisdiction's core goal and work from this perspective their mindset shifted from expecting compliance with regard to implementation to a realization that their role is to build capacity and enhance efficacy by allowing educators to interact with new knowledge. This shift transformed their efforts towards enhancing the internal rather than external commitment via the provision of effective supports and services. With this mindset, leaders' work shifted towards creating social networks that enable opportunities for engagement of teachers and interactions with new knowledge to allow the new knowledge to become mobilized.

As leaders engaged staff and invested time and effort in these social networks, the findings show that champions naturally started to appear, champions who supported the innovation and acted as boundary spanners. It was evident from the findings that these champions played a pivotal role in linking the jurisdiction's efforts to the school's and played a prominent role in linking research to changes in practice within the jurisdiction. These champions were not merely the midlevel leaders within division office or school leaders; those who held formal positions in boundary spanning sub-units or those who possessed formal levels of strategic influence; they included the informal opinion leaders within each school, the individuals that others look towards for direction and guidance. It is their commitment to the core goal and their strategic influence and ability to mediate between internal and external

environments that will enhance the likelihood of bringing about change. Boundary spanners then perform a coordinated role and mediate, negotiate, and interpret connections between the organization's strategic and operational levels. They link vertically and horizontally related networks and connect the core goal with the day-to-day reality of teachers. They are the change agents, fostering adaptability and implementing deliberate strategies that engage others in ongoing interventions to bring organizational action in line with deliberate strategies. As such, they have the potential to affect alignment of teachers' practice and research by injecting divergent thinking and change-oriented behavior (Floyd & Wooldridge, 1997).

My findings show that there is linkage between the level of engagement and the social location of boundary spanners, their formal status and informal communication roles, and their influence in administrative and technical decision making. While formal positions dominate perceived influence in decision making, it is the engagement of organizational boundary spanning individuals that are strongly linked both within horizontal teacher networks and vertical jurisdiction networks that accrue substantial influence and informal status. It is their ability to influence access to, and integration of, new ideas and new sources of information stemming from jurisdictional priorities with the needs of other functional areas that enhance knowledge mobilization.

It is evident that jurisdiction leaders' play a key role in facilitating and creating the preconditions for informal processes to evolve. Findings would support that it is leaders who need to assure that those with relevant information and expertise are engaged in knowledge mobilization and coherence making activities. Formal and informal processes, then, using internal experts and external knowledge purveyors complement each other in the exercise of influence and in the flow of new information. An implication here is that as leaders engage their

167

staff and enhance the influence others have, they need not be afraid of losing their own influence; rather the collective leadership that is created strengthens staff commitment to the core purpose and the work of the jurisdiction. Engaging staff, and fostering collective leadership and commitment to the jurisdiction's goals and priorities strengthens the jurisdiction's professional community. As such, it directly links the work leaders undertake with regard to aligning teachers' practice with what is known about effective instructional practice; directly influencing teacher's knowledge, skills and motivation to improve their practice; and indirectly impacting their efforts to enhance student learning. The creation and role of professional communities is more complex than simply providing support to attain the jurisdiction's core goal. Professional learning communities foster a collective responsibility for achieving jurisdictional goals and enhancing student and teacher learning that drives the jurisdiction forward. It would appear from the data that the jurisdictions' collective intelligence stems from the strategic engagement strategies, the relationships, linkages, and exchanges that people are involved in, the networks, and how these networks are manifested. These complex networks facilitate the creation of channels of communication and influence whereby new knowledge about teaching and student learning are generated. The creation and implementation of these diverse possibilities and actions take into account jurisdiction goals, redundancy, and local diversity. As they are dispersed across and amongst subunits and agents within the nested networks they help to create the jurisdiction's ethos of learning.

Engaging expertise and identifying sites of diversity, displaces the individual as the sole site of learning and compels leaders and teachers to think more broadly about their learning system and the nested networks within which they interact. The data supports the notion that leaders cannot foster systemic change on their own, or in isolation. Leaders must engage

expertise and foster trusting relationships as such activity brings attention to the efforts across many levels of the organization.

My findings support the notion that knowledge generation and implementation of changes in practice are complex endeavours. The complex nature of knowledge mobilization contrasts markedly with the widely cited adopter categories such as *early adopters* and *laggards*. Rather than identifying with a range related to my predisposition for uptake, I would argue that all individuals interact with knowledge within a complex system and attempt to create new meaning as they learn and adapt, rather than simply as individuals who acquire and implement new knowledge. While some individuals interact with new knowledge more purposely or more strategically, all are trying to make meaning of new knowledge and trying to understand how new information fits within their current paradigm. The implications are thus that it is this engagement with people and knowledge that enhances ownership of the goals and enhances the social collective to expand one's personal repertoire of possibilities. As individuals take ownership of their own learning, and as they become more actively engaged in influencing and being influenced, adoption, assimilation, and implementation is enhanced within their own practice and the practice of those within their social networks. In fact, in most cases, the final product stemming from collective knowledge making endeavours surpasses the knowledge of any single individual. Such interactions than, play a pivotal role as they catalyze, coordinate, and support change.

My findings suggest that leaders' approach to influencing change via engagement with diverse social networks is a powerful model for aligning research and learning practice. Data also suggests that it is the work and influence within these social networks that matters more than the influence of external mandates and political must-dos, as internal factors appear to increase

the jurisdiction's predisposition far more than external motivators. The fact that conversations and responses during interviews and surveys never brought up provincial or jurisdictional motivators or external mandates outside of the provincial accountability pillar would support this notion. I believe it is important to highlight that leaders' attention to and their approach regarding redundancy and diversity created self-organizing, emergent social networks that internalized ownership of the work. It appears that such ownership may very well account for the lack of commentary on external mandates. That is engagement around the external mandates increase the jurisdiction's predisposition for change but not its capacity to adopt new knowledge (Greenhalgh et al., 2004). This means that what is required is engagement that mobilizes knowledge and fosters endeavours which lays the foundation for changes that align research and learning practice. Within the findings, enacting engagement included ongoing interactions that expose people's perspectives and allowed sites of diversity to influence collective action. Engagement is not about the Superintendent meeting with each stakeholder separately. Rather it is everyone coming together as a collective. It is about having open and transparent conversations within a room filled with diverse perspectives in order to broaden understanding and enhance commitment in order to create collective intelligence. To expound, sites of diversity are more than just opportunities to engage people, just as collaboration is more than bringing people together; it is about mutually reinforcing activities that give people a voice during strategic and sustained conversations with regard to what truly matters in order to think more broadly about the system that unfolds from and that are enfolded in individual learners (Davis & Sumara, 2006). Engaging expertise is about identifying sites of diversity, about locating those places where the *us* can accommodate the *thems*. That is, while thems may disrupt redundancy and in some cases disrupt we-ness, the thems can also contribute in diverse ways that should

170

amplify the collective *us*. The implications of this is that pronouns can signal productive and unproductive diversity and become a powerful tool for diagnosing problems and strategies for intervention as well as strategies for amplification (B. Davis, personal communication, March 2, 2015).

## Ensuring Efficacy: Implementing Strategies for Diversity

Ensuring efficacy is about implementing strategies for diversity while mobilizing instructional leadership that supports and builds teacher capacity; leadership efforts that focus on research to develop the skills, and capacity of teachers to successfully meet the real challenges inherent in the teaching and learning process. My findings support the findings of Tschannen-Moran and Hoy (2001) who stated that "teachers with a higher sense of efficacy exhibit greater enthusiasm for teaching, have greater commitment to teaching and are more likely to stay in teaching" (p. 784). When teachers have a high sense of efficacy and act on it they are also more likely to have students who learn. Ensuring efficacy coupled with teacher's desire to learn and grow as a professional enhances teachers' openness to new ideas and changes in practices. When it comes to student learning, it is not the external factors placed upon teachers that affect teacher efficacy but rather teachers' inner sense of themselves and their ability and mastery of the teaching repertoire. As such, it is a focus on learning and self-improvement, the very thing that improves teacher quality that leaders should attempt to influence. Ensuring efficacy is about an explicit focus on mobilizing knowledge in order to enhance student learning and ensuring best practice and research. It is about having and communicating high expectations and opportunities for staff engagement within an efficacious decentralized network where everyone is responsible and accountable for achieving the jurisdiction goals. The implications of my findings is that leaders must remember that ensuring efficacy is a complex endeavor and sites of diversity must

171

be considered, as diversity affords personal autonomy, autonomy that allows customization in order to address contextual variables. My findings suggest that within efficacious decentralized networks, sites and strategies for diversity are implemented in order to enhance efforts to mobilizing knowledge and align research and learning practice.

Implementing strategies for diversity such as building efficacy were leaders merely focus on "best practice without next practice just drives teachers through implementing and fine-tuning what already exists. Next practice without best practice has no way of sorting out the strong emerging ideas from the weak ones" (Hargreaves & Fullan, 2012, p. 51). My findings reveal that effective instructional leadership and efforts to enhance teacher efficacy need to occur within and between complex social networks of teachers. It is evident that most teachers will not blindly accept knowledge as given or simply implement changes in practice without first questioning those practices, as such, leaders must encourage teachers to engage in social networks and allow for sites of diversity. When leaders work collaboratively with teachers and utilize best and next practice together to enhance teacher efficacy, teachers decrease reliance on simply implementing the work of external authorities or external sources of information. Such efforts constitute complex endeavors that include teachers working with teachers so that they develop increasing abilities from manifestations of collective intelligence which further remove resistant behaviours.

In my analysis, there are clear issues that need to be addressed, one challenge for jurisdictions leaders is that they not only need to foster efforts that enhance teachers' efficacy but ensure that leaders have sufficient capacity to be instructional leaders. Leaders need to provide ongoing support in order to be able to provide strategies for diversity that support teachers. Evidence suggests that school leaders need to acknowledge and embrace diversity given that teachers' strengths and abilities are diverse and given that teachers' interactions occur in a

172

variety of social networks both within and between schools within and outside the jurisdiction. Within these complex networks, learning is not a solitary endeavor, and specificity around growth and improvement must not be mandated in the strictest sense of the word. My findings suggest that collective meaning making needs to be the objective as teachers interact with new knowledge and work to adapt and change their practice. Structures and networks that allow for diversity aid teachers in their efforts to enhance student learning by providing them with collaborative opportunities to reflect upon their practice, new knowledge, and improve their teaching within their local context. "An organization that is systematically able to identify, capture, interpret, share, reframe, and recodify new knowledge; to link it with its own existing knowledge base; and to put it to appropriate use will be better able to assimilate innovations" (Greenhalgh et al., 2004, p. 606). The conclusions from my analysis would support that while such innovations stem from collective knowledge that has been mobilized, jurisdictions are complex systems and more often than not it is the recodifying of new knowledge that is more important for leaders to reflect upon as the implementation of strategies for diversity allows peoples' habits of expression to evolve from this is something they do to us or want us to do, to this is something we do.

**Chapter Summary**

Each of the conceptual framework's five dimensions is interlinked and interwoven within one another and sit at the core of leaders' work around knowledge mobilization. The framework represents distinct aspects that are not merely collections of concepts but, rather, constructs that play an integral role within the fluid paradox known as a school jurisdiction, which can simultaneously inhabit different and contradictory ideologies and practices. This idea of a school as a complex system in which learning processes and outcomes emerge from a complex

interaction among systemic layers is consistent with what seems to be intuitively known by many leaders; that mobilizing knowledge is not a simple monotonic function. The framework is a process of theorization using grounded theory rather than merely a description of the data with the ultimate aim of enhancing our understanding of the work jurisdiction leaders do. Each of the cases has a narrative built upon the jurisdiction's core work and describes the interplay of the five dimensions and their role in research and learning practice alignment. My findings clearly show the importance of attending to redundancy and diversity. The five dimensions that have been discussed within Chapter 6 are not top down dimensions, but decentralized nodes that interact socially within and between complex networks in order to create a collective sense of we-ness that aid in mobilizing knowledge around best practices that are grounded in research and data. Schools then, have interactions and linkages of the dimensions and balance precariously between a state of stasis and entropy, where seemingly minor changes in one dimension of a system layer can have a profound impact on the developmental processes and outcomes that are observed over time. It is within and through these dimensions that leaders engage social networks in order to embody their work. My research findings show that network analysis and pronoun usage provides value for leaders, particularly as the government moves further forward on large scale educational change, because decentralized networks are associated with and conducive to learning. It is within efficacious decentralized networks where leaders have the strongest ability to utilize these five dimensions and maximize their ability to mobilize knowledge and align research and learning practice.

## Chapter 7: Conclusions and Recommendations

This final chapter presents conclusions and contributions of my study with regard to how a systems or complexity approach can play a role in understanding the unpredictability of organizational change and thereby enhance the mobilization of knowledge regarding the alignment of research and learning practice. The chapter ends with directions for future research with regard to the exploration of how Alberta school jurisdiction leaders mobilize knowledge to align research and learning practice.

### Conclusions and Contributions

This multiple-case study responds to recent calls on the part of governments to develop more effective school systems and raise levels of student learning and achievement and aligns with the work of the College of Alberta School Superintendents (CASS), whose professional aim is to improve student learning for each student in the province. My research aligns with CASS' endeavours to help build school jurisdiction leadership capacity in Alberta. My research examined the role jurisdiction and school leaders play in mobilizing knowledge about good learning practices and explored the complementarities and synergies between knowledge mobilization and complexity theory to determine how a systems or complexity approach can play a role in understanding and enhancing the mobilization of knowledge regarding the alignment of research and learning practice. It addressed the question, how do Alberta school jurisdiction leaders mobilize knowledge to align research and learning practice within school jurisdictions?

The intent of my study was to explore jurisdiction leadership practices through a complexity science approach. It took a qualitative approach through the use of a multiple-case study design in order to more fully understand how jurisdiction leaders can mobilize knowledge

around research and best practice and support practices that have a demonstrated positive impact on student learning and achievement. This study has applied existing knowledge from the research on complexity science and taken the approach that by understanding network theory, leaders can see the relational dynamics and communication patterns within adaptive, learning systems and see how these relationships are configured in order to better mobilize knowledge. It has been the premise of this research that complexity theory calls for a shift "away from individual, controlled views, and towards a perspective of organizations as complex adaptive systems that enable continuous creation and capture of knowledge" (Uhl-Bien et al., 2007, p. 301). Within such a system, leadership needs to shift from isolated, role based actions to more innovative, contextual interactions.

Through a grounded theory approach, data from the multiple-case design enabled the development of a conceptual framework that identified a complex interplay of five dimensions: (1) efficaciously decentralizing: attending to both redundancy and diversity, (2) explicitly focusing: identifying sites of redundancy, (3) enacting expectations: implementing strategies for redundancy, (4) engaging expertise: identifying sites of diversity, and (5) ensuring efficacy: implementing strategies for diversity. These five dimensions support and aid in bringing to fruition three fundamental facets that define the core work of high-performing Alberta jurisdiction: (1) enhancing student learning, (2) ensuring best practice and research, and (3) establishing relational trust. The framework provides a visual representation built upon a rich picture of the factors affecting knowledge mobilization, and research and learning practice alignment within these high-performing Alberta school jurisdictions.

The Framework's foundation rests on the notion of attending to redundancy and diversity, alignment between organizational and personal learning. Intrinsic to these concepts are

176

the practices of reflection, dialogue, sharing and collaboration. The central point of the

Framework is composed around the complex interplay of research and learning practice within

jurisdictional social networks that will grow and develop over time as school jurisdictions

implement, refine and share research and evidence based practices. The five dimensions provide

a structure for understanding knowledge mobilization. As such, jurisdiction leaders are

encouraged to reflect upon their network structure and explore ways to efficaciously

decentralize. Leaders are encouraged to reflect upon their core priorities and implement

redundant strategies to bring their core goals to fruition, while allowing for diversity at the

school level that acknowledged and honors the social context.

Research regarding school improvement practices has traditionally focused on the

teacher, the classroom or the school as the unit of change. Jurisdiction practices that impact

positively on student learning and achievement have only recently been examined. This, in part,

is related to a growing understanding of systems theory and its application to school jurisdictions

and a renewed focus on the importance of jurisdiction leadership to organizational and school

improvement efforts.

In sum, the findings of this research take a first step toward filling a gap in the literature

on complementarities and synergies between knowledge mobilization and complexity theory to

determine how a systems or complexity approach can play a role in understanding and enhancing

the mobilization of knowledge regarding the alignment of research and learning practice.

## Directions for Future Research

There are several implications of this case study for future research. It appears that

context lies at the very heart of the diffusion, dissemination, and implementation of complex

innovations. The complex interactions that arise in specific contexts and settings are precisely

177

what determine the success or failure of the innovation. More exploration needs to occur around knowledge purveyors and boundary spanners, and how these change agents' influence systemic change. Future research studies should be framed so as to illuminate process rather than content. More research could be undertaken regarding system readiness and how central office leaders can restructure networks to improve their ability to adopt, implement, and enhance a climate for change. Research could also look at the process that leads to long-term sustainability of changes in practice. Further research could also be done around antecedents for innovation as well as the harmful effects of an external push for change, such as policy directives or external incentives or expectations.

## Chapter Summary

This dissertation began when I was an associate superintendent responsible for curriculum and instruction. During the last two years I have been a superintendent leading and influencing instructional improvement efforts within my jurisdiction. My quest to learn more about the complexity and unpredictability of organizational change and my desire to mobilize research and spread best practice within my jurisdiction has been my driving force. My journey has allowed me to grown due to my professional reading, self-reflection, and conversations with senior administrations, midlevel leaders, and many more colleagues. Countless hours of self-reflection, deep thought, and perseverance has created this dissertation. I believe that leaders have an important role to play with regards to mobilizing knowledge to align research and learning practice. In recognition of the multifaceted nature of the concept of change, leaders must consider their beliefs about interdependence, system antecedents, system readiness, adoption, assimilation, and implementation of systemic change. They must acknowledge that social networks play a key role and influence practice within their jurisdictions. That communication

needs to be ongoing and that their actions directly contribute to and are affected by the complexity of the multi-faceted process of system improvement.

"Complacency is a thinly disguised form of arrogance. It will strip you of all the attributes you need to be a successful innovator and replace them with an Epicurean cynicism that leads you into the ideal darkness" (Knapp, 2014). We must not be complacent, rather our core purpose must be to mobilize knowledge and continually strive for improvement as only then can we be sure that we are attempting to enhance student learning.

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## Appendix A: Alberta Framework for School System Success

A. Vision and Direction Setting

- Dimension 1: Focus on Student Learning

- Dimension 2: Curriculum and Instruction

- Dimension 3: Uses of Evidence

B. Capacity Building

- Dimension 4: System Efficacy

- Dimension 5: Leadership for Leadership

- Dimension 6: Professional Learning

C. Relationships

- Dimension 7: School – system connections

- Dimension 8: Parent and Community Engagement

- Dimension 9: School Board Leadership

D. Managing the Knowledge Organization

- Dimension 10: System Alignment

- Dimension 11: System Improvement

- Dimension 12: Leveraging Technology

*Note: From "The Alberta Framework for School System Success," by College of Alberta School Superintendents, 2013 Edmonton, AB. Adapted.*

**Appendix B: Knowledge Mobilization Synonyms**

| Term | Sector | Key Authors |
|---|---|---|
| Knowledge Animation | Education | Stoll |
| Knowledge Building | Education | Scardamalia |
| Knowledge Mobilization | Education | Levin, Cooper |
| Implementation Research | Health | Bhattacharyya |
| Knowledge Translation | Health | Graham, Lavis, Landry, Susawad |
| Research Dissemination | Health | Berwick |
| Research Utilization | Health | Beyer |
| Research Utilization | General Social Sciences | Weiss, Belkhodja |
| Knowledge by acquaintance and knowledge by description | General Social Sciences | Bertrand Russell |
| knowing how and knowing that | General Social Sciences | Gilbert Ryle |

# Appendix C: Accountability Pillar

Graduate Studies: Werklund School of Education
University of Calgary
2500 University Dr. NW
Calgary, Alberta, Canada
T2N 1N4

**Accountability Pillar Overall Summary**
**Source Data Reference**
**Annual Education Results Reports - Oct 2012**
**Province: Alberta**

| Goal | Measure Category | Measure | Current Result | Previous Year Result | Previous 3 Year Average | Achievement Standard Years | Data Updated |
|---|---|---|---|---|---|---|---|
| Goal 1: High-quality learning opportunities | Safe and Caring Schools | Safe and Caring | 2011/2012 | 2010/2011 | School Years 2008/2009, 2009/2010, 2010/2011 | 2003/2004 to 2005/2006 | Apr 7, 2012 |
| | Student Learning Opportunities | Program of Studies | 2011/2012 | 2010/2011 | School Years 2008/2009, 2009/2010, 2010/2011 | 2003/2004 to 2005/2006 | Apr 7, 2012 |
| | | Education Quality | 2011/2012 | 2010/2011 | School Years 2008/2009, 2009/2010, 2010/2011 | 2003/2004 to 2005/2006 | Apr 7, 2012 |
| | | Drop Out Rate | 2010/2011 | 2009/2010 | School Years 2007/2008, 2008/2009, 2009/2010 | 2000/2001 to 2002/2003 | Mar 1, 2012 |
| | | High School Completion Rate (3 yr) | 2010/2011 | 2009/2010 | School Years 2007/2008, 2008/2009, 2009/2010 | 2000/2001 to 2002/2003 | Mar 1, 2012 |
| Goal 2: Excellence in student learning outcomes | Student Learning Achievement (Grades K-9) | PAT: Acceptable | 2011/2012 | 2010/2011 | School Years 2008/2009, 2009/2010, 2010/2011 | 2001/2002 to 2003/2004 | Aug 20, 2012 |
| | | PAT: Excellence | 2011/2012 | 2010/2011 | School Years 2008/2009, 2009/2010, 2010/2011 | 2001/2002 to 2003/2004 | Aug 20, 2012 |
| | Student Learning Achievement (Grades 10-12) | Diploma: Acceptable | 2011/2012 | 2010/2011 | School Years 2008/2009, 2009/2010, 2010/2011 | 2001/2002 to 2003/2004 | Aug 29, 2012 |
| | | Diploma: Excellence | 2011/2012 | 2010/2011 | School Years 2008/2009, 2009/2010, 2010/2011 | 2001/2002 to 2003/2004 | Aug 29, 2012 |
| | | Diploma Exam Participation Rate (4+ Exams) | 2010/2011 | 2009/2010 | School Years 2007/2008, 2008/2009, 2009/2010 | 2000/2001 to 2002/2003 | Mar 1, 2012 |
| | | Rutherford Scholarship Eligibility Rate (Revised) | 2010/2011 | 2009/2010 | School Years 2007/2008, 2008/2009, 2009/2010 | 2003/2004 to 2005/2006 | Mar 1, 2012 |
| | Preparation for Lifelong Learning, World of Work, Citizenship | Transition Rate (6 yr) | 2010/2011 | 2009/2010 | School Years 2007/2008, 2008/2009, 2009/2010 | 2000/2001 to 2002/2003 | Mar 1, 2012 |
| | | Work Preparation | 2011/2012 | 2010/2011 | School Years 2008/2009, 2009/2010, 2010/2011 | 2003/2004 to 2005/2006 | Apr 7, 2012 |
| | | Citizenship | 2011/2012 | 2010/2011 | School Years 2008/2009, 2009/2010, 2010/2011 | 2003/2004 to 2005/2006 | Apr 7, 2012 |
| Goal 4: Highly responsive and responsible education system | Parental Involvement | Parental Involvement | 2011/2012 | 2010/2011 | School Years 2008/2009, 2009/2010, 2010/2011 | 2003/2004 to 2005/2006 | Apr 7, 2012 |
| | Continuous Improvement | School Improvement | 2011/2012 | 2010/2011 | School Years 2008/2009, 2009/2010, 2010/2011 | 2003/2004 to 2005/2006 | Apr 7, 2012 |
| ACOL Measure | ACOL Measure | Satisfaction with Program Access | 2011/2012 | 2010/2011 | School Years 2008/2009, 2009/2010, 2010/2011 | 2003/2004 to 2005/2006 | Apr 7, 2012 |
| | | In-service jurisdiction Needs | 2011/2012 | 2010/2011 | School Years 2008/2009, 2009/2010, 2010/2011 | 2003/2004 to 2005/2006 | Apr 7, 2012 |

**Annual Education Results Reports - Oct 2013**
**Province: Alberta**

| Measure Category | Measure | Current Result | Previous Year Result | Previous 3 Year Average | Data Updated |
|---|---|---|---|---|---|
| Safe and Caring Schools | Safe and Caring | 2012/2013 | 2011/2012 | School Years 2009/2010, 2010/2011, 2011/2012 | Apr 7, 2013 |
| Student Learning Opportunities | Program of Studies | 2012/2013 | 2011/2012 | School Years 2009/2010, 2010/2011, 2011/2012 | Apr 7, 2013 |
| | Education Quality | 2012/2013 | 2011/2012 | School Years 2009/2010, 2010/2011, 2011/2012 | Apr 7, 2013 |
| | Drop Out Rate | 2011/2012 | 2010/2011 | School Years 2008/2009, 2009/2010, 2010/2011 | Mar 1, 2013 |
| | High School Completion Rate (3 yr) | 2011/2012 | 2010/2011 | School Years 2008/2009, 2009/2010, 2010/2011 | Mar 1, 2013 |
| Student Learning Achievement (Grades K-9) | PAT: Acceptable | 2012/2013 | 2011/2012 | School Years 2009/2010, 2010/2011, 2011/2012 | Aug 20, 2013 |
| | PAT: Excellence | 2012/2013 | 2011/2012 | School Years 2009/2010, 2010/2011, 2011/2012 | Aug 20, 2013 |
| Student Learning Achievement (Grades 10-12) | Diploma: Acceptable | 2012/2013 | 2011/2012 | School Years 2009/2010, 2010/2011, 2011/2012 | Aug 29, 2013 |
| | Diploma: Excellence | 2012/2013 | 2011/2012 | School Years 2009/2010, 2010/2011, 2011/2012 | Aug 29, 2013 |
| | Diploma Exam Participation Rate (4+ Exams) | 2011/2012 | 2010/2011 | School Years 2008/2009, 2009/2010, 2010/2011 | Mar 1, 2013 |
| | Rutherford Scholarship Eligibility Rate (Revised) | 2011/2012 | 2010/2011 | School Years 2008/2009, 2009/2010, 2010/2011 | Mar 1, 2013 |
| Preparation for Lifelong Learning, World of Work, Citizenship | Transition Rate (6 yr) | 2011/2012 | 2010/2011 | School Years 2008/2009, 2009/2010, 2010/2011 | Mar 1, 2013 |
| | Work Preparation | 2012/2013 | 2011/2012 | School Years 2009/2010, 2010/2011, 2011/2012 | Apr 7, 2013 |
| | Citizenship | 2012/2013 | 2011/2012 | School Years 2009/2010, 2010/2011, 2011/2012 | Apr 7, 2013 |
| Parental Involvement | Parental Involvement | 2012/2013 | 2011/2012 | School Years 2009/2010, 2010/2011, 2011/2012 | Apr 7, 2013 |
| Continuous Improvement | School Improvement | 2012/2013 | 2011/2012 | School Years 2009/2010, 2010/2011, 2011/2012 | Apr 7, 2013 |
| ACOL Measure | Satisfaction with Program Access | 2012/2013 | 2011/2012 | School Years 2009/2010, 2010/2011, 2011/2012 | Apr 7, 2013 |
| | In-service jurisdiction Needs | 2012/2013 | 2011/2012 | School Years 2009/2010, 2010/2011, 2011/2012 | Apr 7, 2013 |

## Accountability Pillar Overall Summary

**Measure Evaluation Reference**

**Annual Education Results Reports - Oct 2013**
**Province: Alberta**

### Achievement Evaluation

Achievement evaluation is based upon a comparison of Current Year data to a set of standards which remain consistent over time. The Standards are calculated by taking the 3 year average of baseline data for each measure across all school jurisdictions and calculating the 5th, 25th, 75th and 95th percentiles. Once calculated, these standards remain in place from year to year to allow for consistent planning and evaluation.

The table below shows the range of values defining the 5 achievement evaluation levels for each measure.

| Measure | Very Low | Low | Intermediate | High | Very High |
|---|---|---|---|---|---|
| Safe and Caring | 0.00 - 77.62 | 77.62 - 81.05 | 81.05 - 84.50 | 84.50 - 88.03 | 88.03 - 100.00 |
| Program of Studies | 0.00 - 66.31 | 66.31 - 72.65 | 72.65 - 78.43 | 78.43 - 81.59 | 81.59 - 100.00 |
| Education Quality | 0.00 - 80.94 | 80.94 - 84.23 | 84.23 - 87.23 | 87.23 - 89.60 | 89.60 - 100.00 |
| Drop Out Rate | 100.00 - 9.40 | 9.40 - 6.90 | 6.90 - 4.27 | 4.27 - 2.79 | 2.79 - 0.00 |
| High School Completion Rate (3 yr) | 0.00 - 57.03 | 57.03 - 62.36 | 62.36 - 73.88 | 73.88 - 81.79 | 81.79 - 100.00 |
| PAT: Acceptable | 0.00 - 71.50 | 71.50 - 77.76 | 77.76 - 84.91 | 84.91 - 88.69 | 88.69 - 100.00 |
| PAT: Excellence | 0.00 - 11.54 | 11.54 - 14.60 | 14.60 - 20.83 | 20.83 - 26.46 | 26.46 - 100.00 |
| Diploma: Acceptable | 0.00 - 71.28 | 71.28 - 77.34 | 77.34 - 84.16 | 84.16 - 88.87 | 88.87 - 100.00 |
| Diploma: Excellence | 0.00 - 8.77 | 8.77 - 12.71 | 12.71 - 19.16 | 19.16 - 23.03 | 23.03 - 100.00 |
| Diploma Exam Participation Rate (4+ Exams) | 0.00 - 31.10 | 31.10 - 44.11 | 44.11 - 55.78 | 55.78 - 65.99 | 65.99 - 100.00 |
| Rutherford Scholarship Eligibility Rate (Revised) | 0.00 - 43.18 | 43.18 - 49.83 | 49.83 - 59.41 | 59.41 - 70.55 | 70.55 - 100.00 |
| Transition Rate (6 yr) | 0.00 - 39.80 | 39.80 - 46.94 | 46.94 - 56.15 | 56.15 - 68.34 | 68.34 - 100.00 |
| Work Preparation | 0.00 - 66.92 | 66.92 - 72.78 | 72.78 - 77.78 | 77.78 - 86.13 | 86.13 - 100.00 |
| Citizenship | 0.00 - 66.30 | 66.30 - 71.63 | 71.63 - 77.50 | 77.50 - 81.08 | 81.08 - 100.00 |
| Parental Involvement | 0.00 - 70.76 | 70.76 - 74.58 | 74.58 - 78.50 | 78.50 - 82.30 | 82.30 - 100.00 |
| School Improvement | 0.00 - 65.25 | 65.25 - 70.85 | 70.85 - 76.28 | 76.28 - 80.41 | 80.41 - 100.00 |

Notes:

1) For all measures except Drop Out Rate: The range of values at each evaluation level is interpreted as greater than or equal to the lower value, and less than the higher value. For the Very High evaluation level, values range from greater than or equal to the lower value to 100%.

2) Drop Out Rate measure: As "Drop Out Rate" is inverse to most measures (i.e. lower values are "better"), the range of values at each evaluation level is interpreted as greater than the lower value and less than or equal to the higher value. For the Very High evaluation level, values range from 0% to less than or equal to the higher value.

## Accountability Pillar Overall Summary

**Measure Evaluation Reference**

**Annual Education Results Reports - Oct 2013**
**Province: Alberta**

### Improvement Table

For each jurisdiction, improvement evaluation consists of comparing the Current Year result for each measure with the previous three-year average. A chi-square statistical test is used to determine the significance of the improvement. This test takes into account the size of the jurisdiction in the calculation to make improvement evaluation fair across jurisdictions of different sizes.

The table below shows the definition of the 5 improvement evaluation levels based upon the chi-square result.

| Evaluation Category | Chi-Square Range |
|---|---|
| Declined Significantly | 3.84 +  (current < previous 3-year average) |
| Declined | 1.00 - 3.83 (current < previous 3-year average) |
| Maintained | less than 1.00 |
| Improved | 1.00 - 3.83 (current > previous 3-year average) |
| Improved Significantly | 3.84 + (current > previous 3-year average) |

### Overall Evaluation Table

The overall evaluation combines the Achievement Evaluation and the Improvement Evaluation. The table below illustrates how the Achievement and Improvement evaluations are combined to get the overall evaluation.

| Improvement | Achievement | | | | |
|---|---|---|---|---|---|
| | Very High | High | Intermediate | Low | Very Low |
| Improved Significantly | Excellent | Good | Good | Good | Acceptable |
| Improved | Excellent | Good | Good | Acceptable | Issue |
| Maintained | Excellent | Good | Acceptable | Issue | Concern |
| Declined | Good | Acceptable | Issue | Issue | Concern |
| Declined Significantly | Acceptable | Issue | Issue | Concern | Concern |

### Category Evaluation

The category evaluation is an average of the Overall Evaluation of the measures that make up the category. For the purpose of the calculation, consider an Overall Evaluation of Excellent to be 2, Good to be 1, Acceptable to be 0, Issue to be -1, and Concern to be -2. The simple average (mean) of these values rounded to the nearest integer produces the Category Evaluation value. This is converted back to a colour using the same scale above (e.g. 2=Excellent, 1=Good, 0=Intermediate, -1=Issue, -2=Concern).

198

# Appendix D: Superintendent Interview Questions

Date:
Time:
District:
Name (optional):

*Introduction*
Thank you for taking the time to meet with me today.
This is an interviewee consent form to participate in the research that I hope you will review and sign *[provide confidentiality form].*
- The purpose of this case study
- What the interviewee will be asked to do
- What type of information will be collected
- What happens to the information collected
- Collect confidentiality form

| Questions as they relate to the research question | Interview Question | Potential Probing Questions |
|---|---|---|
| General ice breaker questions | 1. How long have you been working in the jurisdiction? | |
| | 2. What other positions have you held either within this jurisdiction or outside the jurisdiction? | • Hired from within? |
| | 3. What is your educational background? | • Highest Degree earned? |
| Understanding interviewee context | 4. As a superintendent, how do you define your role? | • Student centered<br>• Finances<br>• Personnel<br>• Policy<br>• Board<br>• Strategic Planning and Reporting<br>• Organizational Management<br>• Communications and Community relations |
| | 5. What kind of interactions do you have with<br>a) schools?<br>b) other division office members? | • What kinds of interactions?<br>• How do they take place?<br>• Around what sorts of issues, goals, and initiatives? |

| Understanding the inner organizational context | 6. Tell me a little about your school jurisdiction? | • Describe the jurisdiction context and how it influences the work that you do?<br>• What is the network structure of the jurisdiction (Centralized / Decentralized)? |
| | 7. How many students? | |
| | 8. How many certified and non-certified staff? | |
| The innovation itself | 9. What are your jurisdiction's goals and how are they created? | • Who is involved in setting the goals?<br>• What does involvement look like?<br>• What is taken into account when creating a plan for how to achieve them?<br>• What role does research (knowledge, data, and findings) play in creating the goals? |
| | 10. Have these goals changed or stayed the same over the last couple of years? | • *[if so]* How so? |
| Leadership | 11. How does the way the jurisdiction sets its direction (vision, mission, goals, and expectations for staff) facilitate the alignment of research and practice? | |
| | 12. How does the way the jurisdiction develops people (support, intellectual stimulation, and modeling) facilitate the alignment of research and practice? | |
| | 13. How does the way the jurisdiction designs the organization (culture, structure, policy and community relationships) facilitate the alignment of research and practice? | |

| Communication and influence (diffusion and dissemination including social networks, leadership, champions, and change agents) | 14. How are the goals communicated to schools? | • What are the strategic communications that catalyze, coordinate, and support change?<br>• How does the information spread throughout the system? |
| | 15. Describe the informal networks within your jurisdiction.<br>a) Between central office and schools.<br>b) Between schools and schools. | • How do these informal networks serve as channels for social influence with regard to dissemination and implementation of the change? |
| The implementation process | 16. What role does research play in (how does it influence) jurisdiction goals, policies and practices? | • Do research, policies, and practice align with goals?<br>• Do research and policies shape practices?<br>• How receptive is your jurisdiction staff to changing practices that align with research and jurisdiction goals? [Power balances (e.g.supporters vs opponents)] |
| | 17. How does the College of Alberta School Superintendents (CASS) or other social networks outside your jurisdiction aid in the jurisdiction's work to achieve its goals? | |
| | 18. What structure/prominent practices/processes do you have/use to improve the system's ability to adopt, implement, and sustain practices that align with the goals? | Do you<br>• Let it happen? (emergent)<br>• Help it happen? (influence) Make it happen? (planned/managed)<br>Do you<br>• Monitor and assess research for emerging trends or developments?<br>• Monitor and assess teacher practice for alignment with research and emerging |

| | | |
|---|---|---|
| | | trends or developments? |
| | | • Monitor and assess teacher practice for alignment with jurisdiction goals? |
| | | • Monitor and assess teacher practice for alignment with jurisdiction policies? |
| | | • Incorporate research findings into the school education plan's strategies? |
| | | • When do you reference and discuss the jurisdiction and school education plan and goals? |
| | | • When do you reference and discuss research based practices that informs and supports jurisdiction and school goals? |
| | | • Do schools work collaboratively to implement jurisdiction goals? |
| | | • Do teachers work collaboratively within schools to change practice? |
| | | • Implement and use research to bring about changes in teacher practice? |
| | | • Provide a safe haven for experimentation? |
| | | • Provide resources and support for jurisdictional goals that require a change in practice? |
| | | • Assess and communicate the implications of data and research with others? |

| | | |
|---|---|---|
| | 19. What features/factors account for the success or impact the adoption, dissemination, and implementation of practices that align with goals? | • Concrete examples<br>• What supports implementation?<br>• What implications has this change had for teachers', classrooms, students, parents? |
| | 20. What are the characteristics of your jurisdiction that successfully avoid taking up "bad ideas"? | |
| Conclusion questions | 21. Is there anything else that you feel is important for me to know? | |

**Appendix E: Midlevel Leader Interview Questions**

Date:
Time:
Jurisdiction:
Name (optional):

*Introduction*
Thank you for taking the time to meet with me today.
This is an interviewee consent form to participate in the research that I hope you will review and sign *[provide confidentiality form]*.
- The purpose of this case study
- What the interviewee will be asked to do
- What type of information will be collected
- What happens to the information collected
- Collect confidentiality form

| Questions as they relate to the research question | Interview Question | Potential Probing Questions |
|---|---|---|
| General ice breaker questions | 1. How long have you been working in the jurisdiction? | • In current role? |
| | 2. What other positions have you held either within this jurisdiction or outside the jurisdiction? | • Hired from within? |
| | 3. What is your educational background? | • Highest Degree earned? |
| Understanding interviewee context | 4. As a mid-level leader, how do you define your role? | In relation to<br>• Three-year education plan<br>• Working with schools,<br>• Other central office staff |
| | 5. What kind of interactions do you have with<br>a) schools?<br>b) other division office members? | • What kinds of interactions?<br>• How do they take place?<br>• Around what sorts of issues/programs? |

| | | |
|---|---|---|
| Understanding the inner organizational context | 6. Tell me a little about your school jurisdiction? | • Describe the jurisdiction context and how it influences the work that you do?<br>• What is the network structure of the jurisdiction (Centralized / Decentralized)? |
| The innovation itself | 7. What are the jurisdiction's goals and how are they created? | • Who is involved in setting the goals?<br>• What does involvement look like?<br>• What is taken into account when creating a plan for how to achieve them?<br>• What role does research (knowledge, data, and findings) play in setting the goals? |
| | 8. Have these goals changed or stayed the same over the last couple of years? | • *[if so]* How so? |
| Leadership | 9. How does the way the jurisdiction sets its direction (vision, mission, goals, and expectations for staff) facilitate the alignment of research and practice? | |
| | 10. How does the way the jurisdiction develops people (support, intellectual stimulation, and modeling) facilitate the alignment of research and practice? | |
| | 11. How does the way the jurisdiction designs the organization (culture, structure, policy and community relationships) facilitate the alignment of research and practice? | |

| Communication and influence (diffusion and dissemination including social networks, leadership, champions, and change agents) | 12. How are the goals communicated to schools? | • What are the strategic communications that catalyze, coordinate, and support change<br>• How does the information spread throughout the system? |
|---|---|---|
| | 13. Describe the informal and formal networks within your jurisdiction.<br>a) Between central office and schools.<br>b) Between schools and schools. | • How do these networks serve as channels for social influence with regard to dissemination and implementation of the change? |
| | 14. How do you know what is expected of you? | • How do you know when they have done a good job? |
| The implementation process | 15. What role does research play in (how does it influence) jurisdiction goals, policies and practices? | • Do research, policies, and practice align with goals?<br>• Do research and policies shape practices?<br>• How receptive is your jurisdiction staff to changing practices that align with research and jurisdiction goals? [Power balances (e.g.supporters vs opponents)] |
| | 16. What structure/prominent practices/processes do you have/use to improve the system's ability to adopt, implement, and sustain practices that align with the goals? | Do you<br>• Let it happen? (emergent)<br>• Help it happen? (influence) Make it happen (planned/managed)<br>Do you<br>• Monitor and assess research for emerging trends or developments?<br>• Monitor and assess teacher practice for alignment with research and emerging trends or developments?<br>• Monitor and assess teacher practice for alignment with jurisdiction goals?<br>• Monitor and assess teacher |

| | | • practice for alignment with jurisdiction policies?<br>• Incorporate research findings into the school education plan's strategies?<br>• When do you reference and discuss the jurisdiction and school education plan and goals?<br>• When do you reference and discuss research based practices that informs and supports jurisdiction and school goals?<br>• Do schools work collaboratively to implement jurisdiction goals?<br>• Do teachers work collaboratively within schools to change practice?<br>• Implement and use research to bring about changes in teacher practice?<br>• Provide a safe haven for experimentation?<br>• Provide resources and support for jurisdictional goals that require a change in practice?<br>• Assess and communicate the implications of data and research with others? |
|---|---|---|
| | 17. What features/factors account for the success or impact the adoption, dissemination, and implementation of practices that align with goals? | • Concrete examples<br>• What supports implementation?<br>• What implications has this change had for teachers', classrooms, students, parents? |
| | 18. What are the | |

| | characteristics of your jurisdiction that successfully avoid taking up "bad ideas"? | |
|---|---|---|
| Conclusion questions | 19. Is there anything else that you feel is important for me to know? | |

# Appendix F: School Based Principal Survey Questionnaire

*Part A: Please indicate the degree to which you agree or disagree with the following statements:*

| Strongly Disagree | Disagree | No Opinion Neutral | Agree | Strongly Agree |
|---|---|---|---|---|
| 1---------------------- | 2---------------------- | 3---------------------- | 4---------------------- | 5 |

1. I believe my jurisdiction has clear, planned goals and strategies.
2. I believe my jurisdiction's goals and strategies are informed by research.
3. I believe my jurisdiction's goals are consistently communicated and referenced.
4. I believe my jurisdiction's goals and strategies influence the work that occurs within my school with regard to changing teacher's practice.
5. I feel senior administration values my participation in creating jurisdiction goals.
6. I feel senior administration considers me an information source with regard to creating, implementing, and measuring jurisdiction goals.
7. I am aware of referenced research the jurisdiction uses when working to change teacher practice (align teacher practice with jurisdiction goals).
8. I feel I have adequate jurisdiction support and resources to bring about change in practice within my school.
9. I feel I have considerable opportunity to use my personal initiative and judgment in carrying out the goals of the jurisdiction.
10. My school's goals and strategies align with jurisdiction goals.
11. I am aware of teachers within my school who use, share, and discuss research that supports jurisdiction goals about best practice as part of their planning and professional learning.

*Part B: In your experience as a principal, how frequently have you performed the following activities?*

| Never | Rarely | Occasionally | Regularly | Frequently |
|---|---|---|---|---|
| 1---------------------- | 2---------------------- | 3---------------------- | 4---------------------- | 5 |

1. Monitor and assess research for emerging trends or developments (read and review research articles and books to gain knowledge).
2. Monitor and assess teacher practice inside my school for alignment with research and emerging trends or developments.
3. Monitor and assess teacher practice inside my school to ensure that practices align and support the jurisdiction goals.
4. Monitor and assess teacher practice inside my school to ensure that practices align and support the jurisdiction policies.
5. Implement a school education plan designed to align school and teacher practice with jurisdiction goals.
6. Incorporate research findings into the school education plan's strategies.

7. Reference and discuss the jurisdiction and school education plan and goals
    a. at jurisdictional administrative meetings.
    b. at school staff meetings.
    c. at school council (parent council) meetings.
    d. during jurisdictional professional learning opportunities.
    e. during school professional learning opportunities.
    f. during informal opportunities during the school day.
8. Reference and discuss research based practices that informs and supports jurisdiction and school goals with
    a. division office staff.
    b. leaders from other schools.
    c. teachers within my school.
    d. community stakeholders.
9. Reference and discuss my school's progress towards meeting jurisdictional and school goals with
    a. division office staff.
    b. leaders from other schools.
    c. teachers within your school.
    d. community stakeholders.
10. Work collaboratively with other schools and support them to implement jurisdiction goals.
11. Work collaboratively with teachers in my school and support them to change practice.
12. Implement and use research to bring about changes in teacher practice within my school (align teacher practice with jurisdiction goals).
13. Provide a safe haven within my school for experimentation with regard to jurisdictional goals that require a change in practice.
14. Provide resources and support for jurisdictional goals that require a change in practice.
15. Assess and communicate the implications of data and research with senior administration.

*Part C: Important leadership aspects of your work.*

1. How does the way the jurisdiction sets its direction (vision, mission, goals, and expectations for staff) facilitate the alignment of research and practice?
2. How does the way the jurisdiction develops people (support, intellectual stimulation, and modeling) facilitate the alignment of research and practice?
3. How does the way the jurisdiction designs the organization (culture, structure, policy and community relationships) facilitate the alignment of research and practice?

*Part D:*

1. Describe the systemic work the jurisdiction undertakes to align jurisdiction goals and teacher practice. What structures/prominent practices/processes does your jurisdiction use to improve the system's ability to implement and sustain practices that align with the jurisdiction's goals?

2. Describe the work your school undertakes to align jurisdiction goals and teacher practice. What structures/prominent practices/processes does your school use to improve the teacher's ability to implement and sustain practices that align with the jurisdiction's goals?
3. What features/factors account for the success or impact the adoption, dissemination, and implementation of research based practices that align with jurisdiction goals?
4. How do the formal and informal networks within your jurisdiction serve as channels for social influence with regard to dissemination and implementation of the change?

*Part E: Background Information:*

1. Name of school jurisdiction
2. Gender
   a. Male
   b. Female
3. Highest Degree Earned
   a. Bachelors Degree
   b. Masters Degree
   c. Doctorate Degree
4. How long have you worked in your current jurisdiction?
5. How long have you been in your current position?
6. Size of school: number of students?
   a. Less than 100 students
   b. 100 to 250 students
   c. 251 to 500 students
   d. 501 to 1000 students
   e. More than 1000 students
7. What percent of your time is administrative (where you do not teach students)?
   a. 10%
   b. 20%
   c. 30%
   d. 40%
   e. 50%
   f. 60%
   g. 70%
   h. 80%
   i. 90%
   j. 100% (I don't teach)
8. Administrative priorities
   a. What percent of your administrative time is taken up by non-instructional/managerial tasks? (e.g. office tasks such as budgeting, reports, meetings, student discipline)
      i. 10%
      ii. 20%
      iii. 30%

        iv.  40%
        v.  50%
        vi.  60%
        vii.  70%
        viii.  80%
        ix.  90%
        x.  100% (I'm always in my office and never in classrooms)

b. What percent of your administrative time is taken up by instructional leadership tasks? (e.g. in teachers' classrooms, teacher supervision, teacher evaluation, professional development)

        i.  10%
        ii.  20%
        iii.  30%
        iv.  40%
        v.  50%
        vi.  60%
        vii.  70%
        viii.  80%
        ix.  90%
        x.  100% (I'm always in teachers' classrooms or facilitating PD)

# Appendix G: School Based Principal Survey Answers: Closed-Ended Questions

*Part A: Please indicate the degree to which you agree or disagree with the following statements:*

| | Strongly Agree | Agree | Total |
|---|---|---|---|
| 1. I believe my jurisdiction has clear, planned goals and strategies. | 100% A<br>100% H | | 6 A<br>3 H |
| 2. I believe my jurisdiction's goals and strategies are informed by research. | 100% A<br>100% H | | 6 A<br>3 H |
| 3. I believe my jurisdiction's goals are consistently communicated and referenced. | 83% A<br>100% H | 17% A | 6 A<br>3 H |
| 4. I believe my jurisdiction's goals and strategies influence the work that occurs within my school with regard to changing teacher's practice. | 67% A<br>100% H | 33% A | 6 A<br>3 H |
| 5. I feel senior administration values my participation in creating jurisdiction goals. | 50% A<br>100% H | 50% A | 6 A<br>3 H |
| 6. I feel senior administration considers me an information source with regard to creating, implementing, and measuring jurisdiction goals. | 83% A<br>100% H | 17% A | 6 A<br>3 H |
| 7. I am aware of referenced research the jurisdiction uses when working to change teacher practice (align teacher practice with jurisdiction goals). | 100% A<br>100% H | | 5 A<br>3 H |
| 8. I feel I have adequate jurisdiction support and resources to bring about change in practice within my school. | 83% A<br>100% H | 17% A | 6 A<br>3 H |
| 9. I feel I have considerable opportunity to use my personal initiative and judgment in carrying out the goals of the jurisdiction. | 100% A<br>100% H | | 6 A<br>3 H |
| 10. My school's goals and strategies align with jurisdiction goals. | 100% A<br>100% H | | 6 A<br>3 H |
| 11. I am aware of teachers within my school who use, share, and discuss research that supports jurisdiction goals about best practice as part of their planning and professional learning. | 33% A<br>67% H | 67% A<br>33% H | 6 A<br>3 H |

*Note: the letter A behind the percent refers to Amersfoort and the letter H refers to Hoogland*

*Part B: In your experience as a principal, how frequently have you performed the following activities?*

| | Frequently | Regularly | Occasionally | Rarely | Never | Total |
|---|---|---|---|---|---|---|
| 1. Monitor and assess research for emerging trends or developments (read and review research articles and books to gain knowledge). | 40% A 67% H | 40% A | 20% A 33% H | | | 5 A 3 H |
| 2. Monitor and assess teacher practice inside my school for alignment with research and emerging trends or developments. | 60% A 33% H | 20% A 67%H | 20% A | | | 5 A 3 H |
| 3. Monitor and assess teacher practice inside my school to ensure that practices align and support the jurisdiction goals. | 60% A 33% H | 40% A 67% H | | | | 5 A 3 H |
| 4. Monitor and assess teacher practice inside my school to ensure that practices align and support the jurisdiction policies. | 40% A 33% H | 60% A 67% H | | | | 5 A 3 H |
| 5. Implement a school education plan designed to align school and teacher practice with jurisdiction goals. | 100% A 0% H | 100% H | | | | 5 A 3 H |
| 6. Incorporate research findings into the school education plan's strategies. | 80% A 0% H | 100% H | 20% A | | | 5 A 3 H |
| 7.a.Reference and discuss the jurisdiction and school education plan and goals at jurisdictional administrative meetings. | 60% A 33% H | 40% A 67% H | | | | 5 A 3 H |
| 7.b.Reference and discuss the jurisdiction and school education plan and goals at school staff meetings. | 60% A 67% H | 40% A 33% H | | | | 5 A 3 H |

| | | | | | |
|---|---|---|---|---|---|
| 7.c.Reference and discuss the jurisdiction and school education plan and goals at school council (parent council) meetings. | 40% A<br>33% H | 40% A<br>67% H | 20% A | | | 5 A<br>3 H |
| 7.d.Reference and discuss the jurisdiction and school education plan and goals during jurisdictional professional learning opportunities | 60% A<br>0% H | 40% A<br>67% H | 33% H | | | 5 A<br>3 H |
| 7.e.Reference and discuss the jurisdiction and school education plan and goals during school professional learning opportunities | 60% A<br>33% H | 240% A<br>33% H | 20% A<br>33% H | | | 5 A<br>3 H |
| 7.f. Reference and discuss the jurisdiction and school education plan and goals during informal opportunities during the school day. | 40% A<br>33% H | 20% A<br>33% H | 20% A<br>33% H | 20% A | | 5 A<br>3 H |
| 8.a.Reference and discuss research based practices that informs and supports jurisdiction and school goals with division office staff. | 40% A<br>33% H | 40% A<br>33% H | 20% A<br>33% H | | | 5 A<br>3 H |
| 8.b.Reference and discuss research based practices that informs and supports jurisdiction and school goals with leaders from other schools. | 40% A<br>33% H | 40% A<br>33% H | 20% A<br>33% H | | | 5 A<br>3 H |
| 8.c.Reference and discuss research based practices that informs and supports jurisdiction and school goals with teachers within my school. | 40% A<br>33% H | 40% A<br>33% H | 20% A<br>33% H | | | 5 A<br>3 H |

| | | | | | |
|---|---|---|---|---|---|
| 8.d.Reference and discuss research based practices that informs and supports jurisdiction and school goals with community stakeholders. | 20% A 33% H | 40% A 33% H | 20% A 33% H | 40% A | | 5 A 3 H |
| 9.a.Reference and discuss my school's progress towards meeting jurisdictional and school goals with division office staff. | 100% A 67% H | 33% H | | | | 5 A 3 H |
| 9.b.Reference and discuss my school's progress towards meeting jurisdictional and school goals with leaders from other schools. | 40% A 33% H | 60% A 33% H | 33% H | | | 5 A 3 H |
| 9.c.Reference and discuss my school's progress towards meeting jurisdictional and school goals with teachers within your school. | 60% A 33% H | 40% A 33% H | 33% H | | | 5 A 3 H |
| 9.d.Reference and discuss my school's progress towards meeting jurisdictional and school goals with community stakeholders. | 20% A 33% H | 20% A 33% H | 60% A | 33% H | | 5 A 3 H |
| 10. Work collaboratively with other schools and support them to implement jurisdiction goals. | 20% A 33% H | 60% A 33% H | 20% A | 33% H | | 5 A 3 H |
| 11. Work collaboratively with teachers in my school and support them to change practice. | 60% A 67% H | 40% A 33% H | | | | 5 A 3 H |
| 12. Implement and use research to bring about changes in teacher practice within my school (align teacher practice with jurisdiction goals). | 40% A 67% H | 40% A 33% H | 20% A | | | 5 A 3 H |

| 13. Provide a safe haven within my school for experimentation with regard to jurisdictional goals that require a change in practice. | 80% A 67% H | 20% A 33% H | | | | 5 A 3 H |
|---|---|---|---|---|---|---|
| 14. Provide resources and support for jurisdictional goals that require a change in practice. | 40% A 67% H | 20% A 33% H | 40% A | | | 5 A 3 H |
| 15. Assess and communicate the implications of data and research with senior administration. | 60% A 67% H | 40% A 33% H | | | | 5 A 3 H |

*Part E: Background Information:*

| | *Amersfoort* | *Hoogland* |
|---|---|---|
| 1. Name of school jurisdiction | *6 responses* | *3responses* |

| | Male/Female/Unknown | Male/Female/Unknown |
|---|---|---|
| 2. Gender | *66%/0%/33%* | *33%/33%/33%* |

| | Bachelors / Masters / Doctorate / unknown | Bachelors / Masters / Doctorate / unknown |
|---|---|---|
| 3. Highest Degree Earned | *17% / 50% / 0% / 33%* | *33% / 33% / 0% / 33%* |

| | *0-4yrs* | *5-9yrs* | *10-19yrs* | *20 or more yrs* | *Unknown* |
|---|---|---|---|---|---|
| 4. How long have you worked in your current jurisdiction? | *33% A* | *33% A* | | *67% H* | *33% A 33% H* |

| | *0-1yrs* | *2-4yrs* | *5-9yrs* | *10-19yrs* | *20 or more yrs* | *Unknown* |
|---|---|---|---|---|---|---|
| 5. How long have you been in your current position? | | *50% A* | *17% A 33% H* | *33% H* | | *33% A 33% H* |

| | Less than 100 students | 100 to 250 students | 251 to 500 students | 501 to 1000 students | More than 1000 students |
|---|---|---|---|---|---|
| 6. Size of school: number of students? | | | *67% A* | *67% H* | *33% A 33% H* |

| | 60% | 70% | 80% | 90% | 100% | Unknown |
|---|---|---|---|---|---|---|
| 7. What percent of your time is administrative (where you do not teach students)? | 33% A | 17% A | 67% H | | 17% A | 33% A 33% H |

| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | Unknown |
|---|---|---|---|---|---|---|---|---|---|
| 8.a. What percent of your administrative time is taken up by non-instructional/managerial tasks? (e.g. office tasks such as budgeting, reports, meetings, student discipline) | 17% A | | | | 33% A | | 17% A 33% H | 33% H | 33% A 33% H |

| | 20 | 30 | 40 | 50 | Unknown |
|---|---|---|---|---|---|
| 8.b. What percent of your administrative time is taken up by instructional leadership tasks? (e.g. in teachers' classrooms, teacher supervision, teacher evaluation, professional development) | 33% H | 33% A 33% H | | 33% A | 33% A 33% H |

**Appendix H: Demographic Summary of Jurisdictions and Interview Participants**

| Characteristics | Amersfoort Jurisdiction | Hoogland Jurisdiction | Leusden Jurisdiction | Utrecht Jurisdiction |
|---|---|---|---|---|
| Number of schools[8] | 40 | 20 | 10 | 20 |
| Number of certified staff[9] | 600 | 400 | 200 | 300 |
| Number of students[10] | 10,000 | 8000 | 3000 | 6000 |
| Number of staff interviewed | 5 | 3 | 1 | 1 |
| Superintendent data | | | | |
| Years in the jurisdiction | 5 | 20 | 4 | 5 |
| Years in current role | 5 | 2 | 2 | 5 |
| Gender | M | M | M | M |
| Highest Degree Held | Masters | Doctorate | Doctorate | Master |
| Previous Superintendent Experience | No | No | No | Yes |
| Hired from within the system | No | Yes | Yes | No |
| Midlevel leader (Deputy/Associate/Assistant Superintendent) data | | | | |
| Number of Deputy/Associate/Assistant Superintendents & Secretary-Treasurer | 5 | 3 | 4 | 4 |
| Number of Deputy/Associate/Assistant Superintendents Interviewed | 4 | 2 | 0 | 0 |
| Average years in the jurisdiction | 15 | 24 | NA | NA |
| Average years in current role | 5 | 2 | NA | NA |
| Gender: women | 2 | | NA | NA |
| Gender: men | 2 | 2 | NA | NA |
| Highest Degree | | | | |
| Bachelor degree | | | NA | NA |
| Master's degree | 3 | 2 | NA | NA |
| Doctorate degree | 1 | | NA | NA |
| Hired from within the system | 3 | 1 | NA | NA |

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[8] Number of schools, as of February, 2013, has been rounded to nearest 10

[9] Number of staff, as of February, 2013, has been rounded to nearest 100

[10] Number of students, as of February, 2013, has been rounded to nearest 1000