Organizational Learning Theory and Districtwide Curriculum Reform: The Role of the Principal in Organizational Learning

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ORGANIZATIONAL LEARNING THEORY AND DISTRICTWIDE CURRICULUM REFORM: THE ROLE OF THE PRINCIPAL IN ORGANIZATIONAL LEARNING

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ORGANIZATIONAL LEARNING THEORY AND DISTRICTWIDE CURRICULUM REFORM: THE ROLE OF THE PRINCIPAL IN ORGANIZATIONAL LEARNING

by

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Abstract

This qualitative case study examined the role of the principal in organizational learning in one small, urban school district. The study focused on ways in which building leaders acquired, interpreted, and distributed information in schools, and how these practices were monitored. Findings from analysis of principal interviews and document review showed that monthly meetings with the superintendent served as the primary source of information gathered by principals, while meetings with their peers provided a vehicle for interpreting information shared. Within their buildings, principals used various building-level meetings, written communication, and the teacher evaluation processes as vehicles for information distribution to staff. Meetings and observation of practice were utilized to monitor efficacy of their distribution practices. Findings suggested that principals did not identify themselves as the primary keepers or distributors of information as it pertained to teaching and learning. Using a distributed approach, they instead relied on district directors and instructional coaches for that aspect of the work.

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First and foremost, I thank you, Mickey, for doing more than your share over the last three years. When the program began, neither of us had any idea what kind of sacrifices were to be made, or how just plain exhausting life was about to become. To say I could not have done it without you is such a wild understatement when I think of all you have given (and given up) to support my efforts. I owe you one.

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TABLE OF CONTENTS

List of Figures and Tables

List of Figures

List of Tables

CHAPTER ONE: INTRODUCTION[1]

Statement of Problem and Purpose

Educational leaders are faced with a complex mix of competing interests, shifting demographics, and comprehensive reform demands (NCEE, 1983; NCLB, 2001; RTTT, 2009). Since the publication of A Nation at Risk (1983), American public schools have achieved mixed results in their pursuit of substantive and sustainable change (Bryk, Sebring, Allensworth, Luppescu, & Easton, 2010; Duncan & Murnane, 2014; Higgins, 2011; Payne, 2013). Recent interdisciplinary research has established the efficacy of systems and structures that support organizational learning and suggests that school leaders who establish learning organizations may position their schools and districts to more effectively manage change and turbulence in public education (Koliba & Gajda, 2009; Knapp, Copland, Honig, Plecki, & Portin, 2010; Schlechty, 2009; Senge, 1990; Spillane, J. Parise, L. & Sherer, J., 2011; Waters & Marzano, 2009).

Supporting complex reform agendas and adapting to new conditions and demands requires highly skilled learning organizations (Argyris & Schon, 1976; Collinson & Cook, 2007; Elmore, 2006; Fullan & Hargreaves, 2012; Honig, 2008; O'Day, 2009; Shilling, 2013). When applied in the public school setting, organizational learning theory may support the development of schools and districts as successful learning organizations (Bryk, Gomez, & Grunow, 2011; Bryk, Camburn, & Louis, 1999; Bryk & Schneider, 2002; Collinson & Cook, 2007; Leithwood & Louis, 2000). While there is clarity around the need to build the organizational learning capacity of public school systems, doing so successfully and sustainably remains a tenacious problem of practice (Bryk, Sebring,

[1] This chapter was jointly written by the authors listed and reflects the team approach to this project: Andrew Berrios, Tracy R. Curley, Marice M. Edouard-Vincent, Bobbie Finnochio, and Ian Kelly.

Allensworth, Luppescu, & Easton, 2010; Duncan & Murnane, 2014; Higgins, Ishimaru, Holcombe, & Fowler, 2012; Payne, 2013).

This study explored organizational learning in the public school context and attempted to gain valuable insights into how school and district leaders leverage organizational learning theory to implement and support strategic curriculum reforms. It was our hope that this study would (a) add to and complement the existing research base on the use of organizational learning theory to enhance school performance and (b) provide school and district leaders with specific guidance on the application of organizational learning theory in practice. We believed that this study would support leaders by (a) building their understanding of organizational learning theory and organizational learning mechanisms, (b) providing insights into how information and knowledge moves within a district and where problems with organizational learning can occur, and (c) providing guidance in using organizational learning theory to support reform agendas at the school and district level.

The purpose of this study was to explore organizational learning in the public school context. Accordingly, our research question was: How do district and school leaders use organizational learning theory to implement and support curriculum reform?

Literature Review

Raising academic achievement for all students remains a high priority for legislators, policy makers, and educators (NCEE, 1983; NCLB, 2001; RTTT, 2009). In addition to legislative demands, the labor market continues to emphasize the need for specific skills and competencies that support success in today's knowledge economy

(Crawford & Irving, 2009; Casner-Lotto & Benner, 2006; Hepworth & Smith, 2008; Lloyd, 2010). Adjusting curriculum, instruction, and assessment practices to reflect these demands requires fundamental changes to how local education agencies approach teaching and learning. Specifically, educational leaders have struggled to implement substantive and sustainable curricular reforms that have a lasting impact on teaching and learning (Burney & Elmore, 1997; Duncan & Murnane, 2014; O'Day & Quick, 2009; Payne, 2013; Shilling, 2013).

Changing Instructional Practice

Successful school reform and improvement rely heavily on the knowledge and capacity of professionals at all levels of school district operations (Bryk, 2010; City, Elmore, Fiarman & Teitel, 2009; Elmore, 2006; Kruse, 2003). As such, building the knowledge and capacity of professionals at all levels of a district's organizational hierarchy is an instrumental endeavor for public education systems (Fullan, 1992). All school systems engage in organizational learning, the question central to this study focuses on (a) what types of mechanisms are in place to support professional learning and (b) the extent to which the efficacy of those mechanisms can be determined by examining the alignment of, and agreement between, professional perceptions of district curriculum reform priorities. Organizational learning theory (Argyris & Schon, 1978) and organizational learning mechanisms (Popper & Lipshitz, 1998; Schechter & Atarchi, 2014) provide a structured framework through which the district's approach to implementing and supporting curriculum reform was analyzed.

The following pages provide an overview of both the theoretical literature and empirical research associated with organizational learning theory (OLT) and organizational learning mechanisms (OLMs). Building a fundamental understanding of OLT clarified our research focus and highlighted the conceptual framework in which we situated our research methodology. In addition, this review of the literature provided critical information about what constitutes organizational learning and the unique characteristics associated with this theoretical framework.

The review first addresses Understanding by Design. While this curriculum design framework was not central to the study, it was one of the primary ongoing curriculum reform initiatives in the Belvedere Public Schools at the time of this study. As such, this reform represented a concept and vernacular familiar to participants in the study. This familiarity was key to the study as it provided a medium through which the research team could discuss and study the unfamiliar concepts embedded in the OLT and OLMs theoretical framework.

The review then moves into a discussion of OLT in which embedded concepts including theory of action, theory in use, mental maps, and single/double loop learning are addressed. The review briefly address differences between individual learning and organizational learning before moving into a review of literature and research associated with the secondary conceptual framework for this study, organizational learning mechanisms (OLMs).

Curriculum Reform: Understanding by Design

The district selected for this research study was engaged in a focused, inter-district curriculum reform effort that began in 2012. The district and its partners selected and implemented an approach to curriculum planning known as Understanding by Design (Wiggins & McTighe, 1998). This approach to curriculum planning relies on a three-stage process that engages professionals in what is known as a backward design method.

The first phase asks professionals to identify desired results in terms of learning outcomes for students. Backward design focuses educational professionals on broad understandings and essential questions before considering how to teach a concept or skill. Once identified, the second stage of the backward design process requires professionals to determine acceptable evidence. This stage of the process answers the question, "How will we know students have learned and do they demonstrate understanding of the established learning outcomes?" The third and final stage of the backward design process engages educators in planning learning experiences and instruction based upon the desired learning targets established in the second phase of backward design.

Organizational Learning

Organizational learning can be defined as a change in organizational knowledge or behavior that is a result of experience over time (Argyris & Schon, 1978; Argote & Miron-Spektor, 2011; Fiol, 1994; Fiol & Lyles, 1985; Levitt & March, 1988; Schulz, 2005). Learning within an organization is influenced by socio-cultural factors (Bransford, Brown, & Cocking, 2006; Bruning, Schraw, & Norby, 2011; Vygotsky, 1978) and is most effective when professionals are given the opportunity to learn from one another

within the context of their work (Brown & Duguid, 1991; Elmore, 2006; Hargreaves & Shirley, 2009). This broad definition of organizational learning provided a framework through which we explore concepts embedded in organizational learning theory.

Organizational Learning Theory

March and Simon (1958) examined the theory of formal agencies in their work, *Organizations*. At the time, the concept of organizational learning was relatively undefined and lacked a substantive theoretical base. March and Simon (1958) captured this problem succinctly, "Much of what we know or believe about organizations is distilled from common sense and from the practical experience of executives. The great bulk of this wisdom has never been subjected to the rigorous scrutiny of the scientific method" (p.24). March and Simon's (1958) early work set the stage for the development of organizational learning theory (OLT) and identified the need for future research into how organizations (a) engage individuals, (b) strategically plan for growth and learning, and (c) develop personnel and, as a result, the collective organization.

Building on the work of March and Simon, Argyris & Schon (1978) further published *Organizational Learning: A Theory of Action Perspective.* This seminal work provided a conceptual frame for researchers and practitioners to study and analyze learning within the context of organizations. In this work, the authors described the fundamental concepts that compose organizational learning theory: task systems, theory of action, theory in use, mental models, single-loop learning, and double-loop learning. These concepts clarify the experiences of both the organization and individual within the learning process, specifically, the interaction between the organization's intended

outcomes and how those at the individual level are educated or learn in the process of pursuing those intended outcomes.

Theory of action. Collinson and Cook (2007) described an organization as "a collective that forms for a specific purpose that is beyond the reach of a single individual" (p. 8). The specific purpose to which Collinson and Cook referred is almost always paired with actions that the organization believes will result in attaining that purpose. This relationship between purpose and action is what Argyris and Schon (1978) referred to as theory of action (ToA). The causal relationships embedded in a ToA reflect the norms, strategies, and assumptions that organizations rely upon to pursue their specific purposes and goals (Argyris & Schon, 1978; DuFour & Eaker, 1998; Fullan, 2001; Fullan, 2007).

No Child Left Behind (2001) provides a salient case illustrating theory of action. NCLB's desired outcomes included ensuring that all students had access to (a) highly qualified teachers, (b) a standards based curriculum, and (c) an equal opportunity to achieve at high levels. NCLB articulated a number of actions to achieve these goals. These included but were not limited to (a) more stringent requirements and monitoring of teacher licensing practices, (b) increased standardized testing, and (c) high-stakes accountability mechanisms to monitor the progress of schools. The causal relationships drawn between the desired outcomes for students and the regulatory mechanisms designed to achieve them provide insight into the norms, values, and assumptions of the educational reform context at the time the legislation was written.

Spillane, Parise, and Sherer (2011) conducted a case study that provides valuable insight into the theory of action concept. Their work focused on school leaders' use of

organizational routines to couple government regulations and instructional practices at the classroom level. Spillane and colleagues built on the work of Feldman and Pentland (2003), utilizing organizational routines as part of the theoretical framework for their study. In their discussion of these routines they describe the ostensive and performative aspects of organizational routines, an idea that Feldman and Pentland stated succinctly, with, "The ostensive aspect of the routine is the idea; the performative, the enactment" (p. 101). Argyris and Schon (1978) described these same aspects in terms of theory of action and theory in use and discussed how organizations enact the theory of action through task systems. Task systems are discussed in the following section and provide the second portion of the conceptual framework for this study.

Task systems. Task systems are shaped by an organization's theory of action and are "a design for work and a division of labor" (Argyris & Schon, 1978, p.14). In school settings, task systems can be found at all levels of the organization with a broad range in complexity. Task systems manifest in the processes and procedures that teachers use to transition children from math to lunch and the broad strategic planning processes executed by central office administrators to formulate multi-year improvement plans for an entire district (Halverson, 2003; Spillane, Parise, & Sherer, 2011; Spillane & Thompson, 1997). The notion that task systems are shaped by and reflect the district's most fundamental norms, strategies, and assumptions (the districts ToA) is an essential understanding when considering an analysis of district practices through the organizational learning framework. The bridge between the idea and the enactment is spanned by how members within the organization perceive the ToA and the extent to

which they understand the ToA. The individual's perception, understanding, and enactment of ToA embody two additional concepts embedded in Argyris and Schon's (1978) organizational learning theory, theory in use and mental models.

Theory in use and mental models. Theories of action are abstract concepts. As stated earlier, they articulate a causal relationship between the desired goals of an organization and the behaviors that the organization believes necessary to attain those goals. In contrast, theory in use represents the observable behaviors of the organization or individuals within the organization (Argyris & Schon, 1978). Put another way, theory in use is what an observer can see the organization or individuals within the organization doing. It is the observable behavior that sets theory in use apart from the norms, strategies, and assumptions that compose an organization's theory of action.

What the organization is actually doing is a function of individual behavior and, within the context of organizational learning, individual behavior is driven by individual perceptions of the organizations theory of action. These individual perceptions of what the organization wants and how they plan on getting it are formed through the individuals' experiences with and learning from other individuals within the organization and with the organization itself. These interpretations are knows as mental models.

Through direct experiences and interactions with the organization over time, individuals construct, continuously review, and revise mental models that represent the organization's theory of action and task systems (Argyris, 1976; Argyris & Schon, 1978; Hedberg, 1981). The development of mental models is heavily influenced by the interactions between the individual and the organization. These mental representations of

ToA and task systems help the individual understand and, ultimately, drive the execution of their perceived responsibilities within the organization. Mental models represent another critical element in the conceptual framework that frames the current study.

District and school leaders design task systems intended to implement the working theory of action. Teachers and other education professionals work within those task systems and, over time, accumulate experiences that shape how they perceive and understand the district's theory of action. These perceptions and understandings are the mental models that individuals construct and, consequently, use to guide their current and future work (Mohammed & Dumville, 2001). The actions and observable behaviors are known as theory in use.

Theory of action, task systems, theory in use, and mental models are key concepts that frame and, in the following pages, distinguish between two distinct types of learning within an organization; single-loop learning and double-loop learning (Argyris & Schon, 1978). Single-loop learning refers to changes in behavior that maintain the current theory of action. Double-loop learning refers to changes in behavior that redefine the norms, assumptions, and strategies that constitute the organization's theory of action. Both types of learning rely on a phenomenon known as error detection.

Error detection. The concept of error detection is essential to understanding learning within the context of OLT (Shaw & Perkins, 1992). Errors refer to a perceived incongruence between observable behavior and an individual's expectation of behavior relative to their mental models of the organizational theory of action and task systems. In simple terms, an error occurs when an individual acts in a way or observes others acting

in ways that are incongruent with their current perception (mental models) of the organizational theory of action and supporting task systems. It is here that the true power of mental models becomes clear. Given that error detection is a function of an individual's observation of behavior that is perceived to be incongruent with the organizational theory of action, the accuracy of and the extent to which individual mental models reflect the ToA articulated by the organization determines what is and is not considered an error.

An individual who holds accurate mental models of the organizational theory of action and task systems will potentially detect true errors that present opportunities for organizational learning. An individual who holds inaccurate mental models of the organizational theory of action and task systems may (a) fail to recognize errors or (b) interpret behaviors that are consistent with the organizational ToA as errors. In the case of inaccurate mental models, opportunities for individual and organizational learning are stifled or missed all together. In some instances these situations may result in learning that is counterproductive and harmful to the organization. As we can see, mental models, whether or not they are accurate, play a significant role in whether and how organizational learning will occur (Argyris, 1976; Argyris & Schon, 1978).

Single-loop and double-loop learning. The process of single and double loop learning begins with error detection. When an error is detected, the individual or the organization seeks to correct the perceived problem. The manner in which the perceived problem is corrected determines whether the organization is engaged in single loop learning or double loop learning. In a single-loop learning scenario, the error correction

seeks to maintain the status quo and preserve the current theory of action (Argyris, 1976; Argyris & Schon, 1978). Double loop learning, on the other hand, refers to error correction on the part of individuals or the organization as a whole that initiates a fundamental shift in the norms, strategies and assumptions of the organization (Argyris, 1976; Argyris & Schon, 1978). In this situation, the error or problem is so incongruent with the current theory of action that it cannot be resolved through the minor behavioral adjustments of single loop learning. In the case of double loop learning, the organization must look critically at its theory of action and redefine that theory to better match current demands.

The work of March and Simon (1958) and Argyris and Schon (1978) provided the foundational theoretical and conceptual frameworks for the current study. Theory of action, task systems, theory in use, and mental maps/images gave shape and direction to the development of data collection protocols and the subsequent analysis of organizational learning in service of the district's curriculum reform efforts. The research and literature in the decades following the work of March and Simon (1958) and Argyris and Schon (1978) defined the remaining elements of the theoretical and conceptual framework for the research team's investigation of organizational learning and curriculum reform. The following pages provide a brief treatment of this literature and research as well as an in depth review of organizational learning mechanisms.

Organizational Learning Mechanisms

During the two decades following Argyris and Schon's (1978) work, research continued to explore and define organizational learning theory (Cook & Yanow, 1993;

Duncan & Weiss, 1979; Fiol & Lyles, 1985; Herritt, Levinthal & March, 1985; Huber, 1991; Klimecki & Lassleben, 1998; Levinthal & March, 1981; Levitt & March, 1988; Nonaka, 1994; Senge, 1990; Walsh & Ungson, 1991; Weick, 1991; Weick & Roberts, 1993). This body of work provided further definition for and understanding of OLT. As the field developed, so, too, did a significant theoretical division within the research community.

The central problem and debate involved (a) the fundamental relationship between individual learning and organizational learning and (b) whether or not organizations were capable of learning in the same way that humans learn. Popper and Lipshitz (1998) explored these issues through an exhaustive review of relevant literature and contributed a viable theoretical bridge between the various perspectives on these issues. The power of their work was based on (a) the identification and articulation of three divergent theoretical positions on the debate and, most relevant to the current study, (b) the articulation of organizational learning mechanisms as a concrete lens through which researchers could study organizational learning while circumventing the quagmire of individual vs. organizational learning.

Popper and Lipshitz (1998) articulated three positions taken by the theoretical community on the question of how individual and organizational learning are or are not related and congruent. The first position answered the question with a qualified yes. This theoretical position held that organizations are able to learn like human beings. The second position answered the question with an implied yes. Scholars of this position held that organizations were able to learn, but that organizational learning was an extension of

individual learning. The third and final position answered the question with a firm no. This theoretical position held that organizations do not possess systems and structures that parallel the biological cognitive networks involved in human learning and, therefore, organizations cannot learn as individuals learn.

While these theoretical positions provided structure and insight into the debate at the time, a major contribution of the work of Popper and Lipshitz (1998) was the theoretical bridge offered in an effort to span this divide in the research. Building on the work of Cook and Yanow (1993), Popper and Lipshitz proposed that organizational learning mechanisms provide a concrete framework through which researchers could study the "structural and procedural arrangements" (p.167) that result in learning. While the research and theoretical community could not agree on the questions surrounding the relationship between individual and organizational learning, the notion that all organizations engage in strategic activity to achieve goals is universally accepted and provided a path forward in studying organizational learning.

Popper and Lipshitz (1998) identified organizational learning mechanisms (OLMs) as a way to draw attention to the concrete, observable systems within an organization that promote individual and group learning (Popper & Lipshitz, 1998; Popper & Lipshitz, 2000). OLMs are institutionalized procedures and practices that organizations use to collect, analyze, store, disseminate, and use new information in service of organizational goals (Ellis, Margalit, & Segev, 2012; Ellis & Shpielberg, 2003; Popper & Lipshitz 1998, 2000; Schechter, 2008; Schechter & Asher, 2012; Schechter & Quadach, 2012; Schechter & Atarchi, 2014). Schechter and Feldman (2010) explained

that OLMs function across various settings within organizations when individual members share and analyze knowledge. When organizational learning mechanisms effectively increase an individual's knowledge, the individual's newly acquired knowledge adds to the collective learning of the organization, thus, supporting the concept that OLM's support organizational learning.

Organizational learning mechanisms are closely tied to theory of action, task systems, theory in use, and mental maps (Argyris & Schon, 1978). OLMs are formal and informal task systems that organizations use to promote individual and organizational learning in service of the theory of action. OLMs can promote single or double loop learning by leveraging the errors that organizations and individuals detect based on comparisons between theory in use and mental models. OLMs are composed of five distinct learning processes (Schechter & Atarchi, 2014). These processes are explored further in the following pages.

Five Processes for Organizational Learning

Research exploring organizational learning mechanisms (OLMs) identifies five distinct, but interrelated, processes embedded in OLMs. These include organizational memory, information acquisition, information distribution, information retrieval, and information interpretation (Schechter & Quadach, 2013; Schechter & Atarchi, 2014). Building upon organizational learning research, Popper and Lipshitz (1998) identified organizational learning mechanisms as a way to draw attention to the concrete, observable systems within an organization that promote individual and group learning (p.170)**.** More specifically, these mechanisms represent the systems and structures that

organizations use to acquire, retain, and transfer knowledge (Fiol & Lyles, 1985; Huber, 1991; March, 1991). Table 1.1 provides detailed definitions of each embedded learning process.

Table 1.1

*Elements of organizational learning mechanisms**

Attribute	Definition
Organizational Memory	The process and means by which organizational experiences are stored and coded into organizational memory for future use.
Information Acquisition	The process of obtaining knowledge.
Information Distribution	The process of sharing information that leads to understanding.
Information Retrieval	Organizational members draw on the encoded information to guide their decisions and actions.
Information Interpretation	A socio-cognitive process that ties meaning to the distributed information (Schechter & Quadach, 2012).

*Note: Adapted from "Toward an Organizational Model of Change in Elementary Schools: The Contribution of Organizational Learning Mechanisms," by Schechter, C. & Qadach, M., 2012, *Educational Administration Quarterly*, *48*

Organizational memory. Organizational memory refers to stored information that an organization accumulates through experience over time (Argote & Ingram, 2000; Argote & Miron-Spektor, 2011; Arrow, McGrath, & Berdahl, 2000; Kruse, 2003, Walsh & Ungson, 1991). At the individual level, knowledge is stored in the brain using a series of complex cognitive mechanisms for rehearsal and retrieval. At the organizational level, the storage of information is distributed across members, tools, and tasks (McGrath &

Argote, 2002) and stored within individuals, culture, transformations, structures, and the ecology of the organization (Walsh & Ungson, 1991). In developing a theoretical framework for this study, it was critical to consider (a) where organizational information was stored and (b) the types of information stored. Schechter (2015) delineates between hard information and soft information, "Organizational memory includes hard data (rules and measurable facts) as well as soft information (e.g., tacit knowledge, expertise, and details about strategic decisions)" (p. 6).

A curriculum review committee in Belvedere, which may consist of district and building level leaders and teachers, serves as an illustrative example of organizational memory. As this committee works to solve problems of practice, they accumulate experience and knowledge and, therefore, learn. The knowledge generated through the committee's work is stored within the members of the committee and the products of their work (McGrath & Argote, 2002). The soft information (Schechter, 2015) stored in organizational memory might include the operational procedures and routines of the committee, the historical development of the committee, etc. The hard information (Schechter, 2015) might include meeting agendas, meeting minutes, curriculum maps, etc.

Information acquisition. Information acquisition involves gaining new information and knowledge through (a) the knowledge and expertise of those currently in the organization, (b) direct experience over time, (c) drawing upon the knowledge of individuals outside of the organization, (d) hiring new staff with specialized knowledge and skills, and/or (e) observing and collecting information from other organizations

(Huber, 1991; Schechter, 2015). Through these different approaches to acquiring new information, organizations engage in a phenomenon referred to as noticing or searching (Huber, 1991). As organizations work to actualize the articulated theory of action, they may, depending on their circumstances and needs, engage in a search for new information. Search can involve (a) scanning the organization for new knowledge, (b) a focused search to identify alternative plans and paths, and (c) organizational performance monitoring.

Information distribution. Once information is acquired, organizations and individuals engage in both direct and indirect distribution of information. Direct distribution of information can happen through written communications, meetings, memos, policies, etc. Indirect distribution can happen through informal conversations between individuals within the organization or the modeling and behavior that individuals enact and observe through their work within the organization (Burch & Spillane, 2003; Schechter, 2015).

Information interpretation. The last domain of the learning cycle, information interpretation, involves learning through sense making (Weick, 1995; Coburn & Talbert, 2006). Individuals and groups hold preexisting beliefs that influence how information is interpreted, yet increased learning transpires when multiple interpretations are made and shared within the organization. These interpretations can range from large group meetings and trainings in organizations to physical pieces of paper such as reports. In relation to schools and school districts, it becomes the responsibility of school and central

office leaders to ensure that newly distributed information is properly interpreted and understood.

Information retrieval. The ways in which organizations make decisions and take action depends, to some extent, on how information is retrieved (Walsh & Ungson, 1991; Weick, 1979). Like other elements of organizational learning mechanisms, retrieval is related to and influenced by all of the other elements embedded in OLMs. Within the context of OLMs, retrieval is heavily influenced by (a) information interpretation and (b) how and where information is stored in organizational memory. The interpretation of organizational information influences the relative accuracy and quality of information that is drawn upon through retrieval to inform decisions. As individuals take in information, it is interpreted through their mental models of the organization (Argyris & Schon, 1978). These interpretations, as seen through these lens of error detection, vary in accuracy and quality based upon individual mental models. This variation can lead to broad interpretations of the organizational information that is ultimately retrieved and, as a result, can have less than positive influences on organizational decision-making.

The repositories and formats of organizational information also hold significant roles in the retrieval of organizational information. As Walsh and Ungson (1991) suggested, information is stored in locations that include individuals, culture, transformations, ecology, and structures. Schechter (2015) suggests two primary format domains for information storage, hard information and soft information. Hard information is tangible and can be seen (i.e. processes, policies, documents, etc.), while

soft information is often intangible and ambiguous (i.e. specialized expertise of individuals, social dynamics, etc.). The location and format of stored organizational information influence retrieval in that (a) the locations may or may not be known to those seeking information and (b) the quality and clarity of information may vary widely based upon individual interpretations of information.

Organizational learning mechanisms (OLMs) are "institutionalized structural and procedural arrangements that allow organizations to systematically collect, analyze, store, disseminate, and use information relevant to the performance of the organization and its members" (Popper & Lipshitz, 1998, p. 170). These OLMs encapsulate five distinct learning processes (Schechter, 2015), including information acquisition, information interpretation, information distribution, organizational memory, and information retrieval. Taken together, these five learning processes represent the systems and structures that district and school leaders may use to implement curriculum reform.

Organizational Learning in Practice

Professional learning communities (PLCs) represent a concrete application of organizational learning theory and mechanisms and can provide clarity on the interrelated concepts embedded in the OLT and OLM literature (DuFour & Eaker, 1998; Stoll & Louis, 2007)**.** PLCs can be defined as a team of professionals who (a) share a vision and goals for their work, (b) seek collaborative solutions to problems of practice, (c) support ongoing professional learning, and (d) rely on performance data and other sources of information to make informed decisions (DuFour & Eaker, 1998; Levine & Shapiro,

2004). The defining characteristics of PLCS provide a meaningful context for the concepts embedded in organizational learning theory and mechanisms.

The notion that PLCs are built on shared vision and goals for the future (DuFour & Eaker, 1998) conceptually reflects the concept of organizational theory of action. The shared vision and goals of a PLC articulates the causal relationship that the group draws between desired outcomes and the behaviors it believes necessary to achieve them. Seeking collaborative solutions to problems of practice reflects the concepts of error detection (the PLC perceives a problem relating to their practice), information retrieval and acquisition (the team seeks information and resources to solve the problem), and, depending on the outcome, single or double loop learning (the PLC solves the problem of practice and, as a result, learns). The solutions to problems of practice generate knowledge that is stored in organizational memory as either hard information (lesson plans, curriculum materials, etc.) or soft information (new teaching practices, new understandings about learning, etc.).

Organizational Learning and Curriculum Reform

School systems that leverage organizational learning theory (OLT) and organizational learning mechanisms (OLMs) may be better equipped to manage rapid changes in educational reform efforts and achieve successful outcomes for students (Collinson & Cook, 2007; Schechter & Atarchi, 2014). Schechter and Feldman (2010) suggest with the use of OLMs across settings, individual members can more effectively gain and share information that is central to individual and organizational learning. Given the growing body of research connecting school success and organizational learning, it is

critical to continue exploring how organizational learning theory is understood and implemented in school settings.

The current study investigated how district and school leaders thought about and applied organizational learning theory to implement and support ongoing curriculum reforms. This research looked closely at how district and school leaders constructed theories of action and how those theories of action were brought to life via organizational learning mechanisms. The study analyzed the mental maps of professionals throughout the district and the extent to which those mental maps agreed or did not agree with the district's theory of action. This project adds to the growing body of work focusing on organizational learning in school districts. In addition, this work makes specific contributions to the body of literature providing practicing school leaders with direct guidance in the application of organizational learning theory in the school setting. In the next chapter we detail the methodology employed to carry out this study.

CHAPTER TWO: METHODOLOGY[2]

Research Design

This study aimed to examine how district and school leaders use organizational learning theory (OLT) to implement and support ongoing curriculum reform. For the purpose of this research, we define organizational learning as a change in organizational knowledge or behavior that is a result of accumulated experience (Argote & Miron-Spektor, 2011; Argyris & Schon, 1978; Fiol & Lyles, 1985; Levitt & March, 1988; Schulz, 2005). Organizational learning mechanisms (OLMs) are "the concrete, observable organizational systems operated by individual organization members" that promote individual and group learning (Popper & Lipshitz, 1998, p. 170). OLMs provide the context in which individuals gain experience and build shared knowledge about and understanding of the organization's priorities and goals (Collinson & Cook, 2007; Schechter & Atarchi, 2014). Given our team's desire to gain insight into how school and district leaders used OLT to implement and support curriculum reforms, a qualitative case study methodology was selected and shaped to execute that inquiry (Creswell, 2008; Yin, 2009).

This study utilized a qualitative single case study design. Yin (2009) states, "A case study is an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident" (p. 18). In this case, the OLMs that were deployed by the district represented the phenomenon that Yin (2009) was referring to while the individual

[2] This chapter was jointly written by the authors listed and reflects the team approach to this project: Andrew Berrios, Tracy R. Curley, Marice M. Edouard-Vincent, Bobbie Finnochio, and Ian Kelly.

professionals represent the context in which OLMs were situated. A case study design allowed the team to (a) study the experiences of individuals from across the district's organizational hierarchy and (b) leverage an analysis of the collective experiences of individuals to make inferences about the presence and function of OLMs in the Belvedere Schools.

To gain these insights, the research team utilized archival document review and semi-structured in person interviews to collect data and triangulate information (Maxwell, 2013; Merriam, 2009; Yin, 2009). Data collection instruments and processes were designed to examine district practices through the OLT and OLM theoretical frameworks that give shape to this study. The following pages provide a detailed description of our collective methodology.

Site Selection

Selection of a research site that would allow for an effective analysis of OLT and OLMs within the context of curriculum reform required careful consideration on the part of the research team. To support the site selection process, the team employed criterion-based sampling (Creswell, 2008; LeCompte & Preissle, 1993; Maxwell, 2013; Miles & Huberman, 1994; Patton, 2002). Two criteria were identified that would qualify districts as potential research sites. These criteria were:

1. The district must, through review of strategic planning documents, evidence the implementation of curriculum reforms for at least three continuous years.
2. The district must serve between 5,000 - 10,000 students.

The team believed that the duration of the curriculum reform was important in that district's that had committed less than three consecutive years may not provide the level of insight necessary for a thorough analysis of OLT and OLMs. The team considered the size of the district to be a relevant selection criterion based on the logic that a smaller district may conflate the results due to a lack of organizational complexity. On the other end of the spectrum, the team believed that the organizational complexity of districts serving populations greater than 10,000 students may be too broad to study effectively and, therefore, compromise the efficacy and quality of analysis.

Participant Selection

The research team's desire to gain a broad and rich understanding of OLT and OLMs within the context of Belvedere's ongoing curriculum reform efforts required careful consideration of participant selection. Drawing on qualitative case study literature, the team found Patton's (2002) notion of purposeful sampling compelling. Patton suggested, "the logic and power of purposeful sampling lies in selecting information rich cases for study in depth. Information rich cases are those from which one can learn a great deal about issues of central importance to the purpose of the inquiry…" (p. 230). Considering those participants from whom we might learn the most, the team purposefully selected the superintendent, central office administrators, four principals, four instructional coaches, and six classroom teachers. This pool of eighteen participants represented the district's organizational hierarchy and provided a sample sufficient to make inferences and generalizations based on our data. While there is little clarity on the issue of appropriate or standards for sample sizes in qualitative research,

the team sought to balance research goals and purposes, drawing a representative perspective from the district, and the time and resources available for the project (Mason, 2010; Patton, 2002).

Instrumentation

The research team developed in-person interview and document review protocols that were tuned to reflect key concepts embedded in the theoretical frameworks of organizational learning theory and organizational learning mechanisms. The context and associated vernacular of the ongoing curriculum reform provided the language in which we framed our questions and embedded concepts from the theoretical framework. Key concepts situated within interview questions about the curriculum reform included Schechter & Atarchi's (2014) five elements of organizational learning mechanisms (information acquisition, information distribution, information interpretation, organizational memory, and information retrieval) and select elements (theory of action, mental maps, single loop learning, double loop learning, and theory in use) from the work of Argyris & Schon (1978).

Interview protocols. The team employed semi-structured interviews to explore the district's use of organizational learning mechanisms to support ongoing curriculum reform efforts (Creswell, 2008; Merriam, 2009). Semi-structured interviews balanced the need for systematic data collection while providing flexibility to pursue topics that surfaced through dialog with participants (Mason, 2010; Yin, 2009). In order to develop the protocols, the research team used a multi-step process to ensure that questions addressed the theoretical framework, were conceptually clear and accessible to

participants, and met the data collection requirements for all five individual studies (Maxwell, 2013; Merriam, 2009; Patton, 2002; Weiss, 1995).

Development of protocols began with a standard bank of interview questions adapted from the work of Schechter and Atarchi (2014). This starting point ensured that initial draft questions were tied closely to the theoretical frameworks guiding the study. From here, the team worked to frame the questions in the vernacular of Belvedere's ongoing curriculum reform efforts. Taking this step ensured that participants would understand the questions and, therefore, provide the rich data necessary to conduct our analysis of OLT and OLMs within the district. Once questions were reformulated to reflect the district's curriculum reforms, interview protocols were subjected to a number of reliability and validity checks.

Cognitive interviews were conducted to assess the construct validity of the questions (Hill, Thompson, & Williams, 1997; Merriam, 2009). During cognitive interviews, participants were asked to review interview questions and described to the interviewer what they believed the questions were asking them. As a result, the research team gained important feedback concerning the clarity and specificity of interview questions. Interview protocols were revised using the data gathered through cognitive interviews and were then subjected to formal pilot interviews. During pilot interviews, participants engaged in a mock interview scenario. All questions were asked and responses recorded. Participant responses were reviewed by the research team to assess the extent to which the questions elicited the data necessary to examine organizational learning theory and mechanisms. Here, again, interview protocols were revised and

finalized based on data gathered through the pilot interview process. Final interview protocols can be found in Appendices A through D.

Document review. Review and analysis of documents provide a rich source of data and information in qualitative research projects (Creswell, 2008; Merriam, 2009; Patton, 2002). Document review and analysis took place prior to and during fieldwork. In preparing for fieldwork, document review protocols served as a means to develop a meaningful context for the ongoing curriculum reform efforts of the district. This approach provided important background information that supported data collection throughout the project. In addition to building context and supporting the research team's orientation to the subject, the initial archival document review served "as a stimulus for paths of inquiry that can be pursued only through direct observation and interviewing" (Patton, 2002, p. 294). During fieldwork, additional documents and work products were acquired for review during interviews. These documents were reviewed in light of our ongoing data collection and served to confirm or disconfirm data gathered during in person interviews (Merriam 2009; Patton, 2002).

Procurement and selection are two considerations that the team considered in developing a document review protocol (Berger, 2014; Creswell, 2008; Patton, 2002; Merriam, 2009). Initial documents selected for review consisted of publicly available materials accessed via the district's website. These artifacts included district improvement plans, district strategic plans, district professional development plans, school improvement plans, and curriculum documents relative to the ongoing reform effort. Access to organizational documents not publicly available and relevant to research

were requested and gathered during in person interviews (Patton, 2002) by asking participants if they would be willing to provide any documents that they believed to be relevant to the ongoing curriculum reform efforts of the district. These documents included teacher generated assessments, teacher generated lesson plans, professional development materials, internal communications, etc.

Authenticity of documents (Merriam, 2009) and confidentiality of documents (Patton, 2002) were also important considerations in developing the document review protocol. Merriam (2009) suggests that researchers consider the origin, purpose, author, and the context in which the document was produced. The team integrated authenticity checks into the document review protocol by having no fewer than two members examining the same documents. Confidentiality was also addressed through the document review protocol. When considering requirements for confidentiality, the research team relied on the work of Patton (2002). The identity of participants and the research site were protected by ensuring that private documents were not cited directly in the final report and by redacting all identifying information in documents maintained in hard copy by the research team.

Confidentiality and Consent

Informed consent and participant confidentiality were essential to both the well being of participants and the validity of data (Butin, 2010; Merriam, 2009). In the current study, these ethical issues were of central importance due to the inclusion of supervisors and subordinates in the participant pool. Protection of subordinates was critical because participants provided information that supervisors may perceive as critical or

objectionable. Recognizing that participants who had any cause to be concerned about being identified or suffering adverse consequences as a result of participating in the study would likely withhold information or refrain from being open and honest in their responses, we sought informed consent from all participants, ensuring their confidential participation. Prior to data collection and in adherence with Institutional Review Board (IRB) guidelines, institutional and individual forms of informed consent were reviewed and signed by site administrators and participants involved in this research study.

In addition to the confidentiality of individual participants, it was also important that the identity of the research site be protected (Creswell, 2008). Balancing external validity with the need to protect the identity of the research site was carefully considered. Pseudonyms for the district and individual schools were selected and used in the preparation of all documentation related to this research project. Beyond the basic protection of identity, the team thought carefully about the use of descriptive data as a possible threat to the anonymity of the district. Providing rich descriptive information to define the context for the current study was important to the transferability of our results (Lincoln & Guba, 1985). That being said, this rich contextual information could also provide readers with enough information to narrow locations and possibly identify the research site. The team reviewed and selected descriptive data that balanced the need to establish transferability with the ethical imperative to maintain the anonymity of the participating district.

This research project leveraged semi-structured interviews, and an archival document review to triangulate evidence to examine organizational learning via

organizational learning mechanisms in a district engaged in ongoing curriculum reform. The following pages provide a detailed description of data collection and analysis procedures.

Data Collection and Analysis

Data collection. After acquiring IRB and research site approval, the research team engaged in fieldwork between August and December of 2015. During that time the research team conducted semi-structured interviews and the collection and review of archival documents. Final protocols can be found in Appendices A through D. To ensure accurate and complete collection of data, in person interviews were recorded with the explicit permission of participants.

Data storage was a key consideration for the research team. A collaborative, web-based platform was preferred but needed to be balanced with the storage and safety of the data. Prior to selecting a service, privacy and data security policies were reviewed to ensure (a) compliance with all regulatory requirements and (b) appropriate protections against theft and loss of data. Once the review was complete, a secure, encrypted web-based service was selected for use. All print, digital and audio files were then stored using this service for the duration of this project.

Data analysis. The team employed a collaborative data analysis process to conduct coding, narrative analysis, and the development of research memos/journals for this project (Coffee & Atkinson, 1996; Maxwell, 2008). The team approach to analysis of documents and interview transcripts protected the analysis from research bias by ensuring that single interpretations did not compromise the validity data (Yin, 2009). This

collaborative process ensured that two or more team members were involved in the coding of each document and transcript.

As suggested by Yin (2009), team members read all documents and transcripts in their entirety as the first stage of document and transcript analysis. In doing so, we gained perspective on whether and to what extent data sources could be used to further or increase knowledge around the curriculum reform and the district's use of organizational learning theory. Our initial reading further informed our understanding of participants' experiences and the language and definitions of the district's reform efforts. Employing this additional step within the analysis process supported a comprehensive and valid review of district practices regarding curriculum reform and organizational learning.

The second phase of document and transcript analysis involved a line-by-line review of each document to identify key words and phrases that (a) referred specifically to the ongoing curriculum reform efforts, and/or (b) reflected elements of the organizational learning theoretical framework (Argyris & Schon, 1978; Schechter & Atarchi, 2014). This phase of analysis by the team served dual purposes. First, it provided initial insights into participant perception of the ongoing curriculum reform and the organizational learning mechanisms deployed to support them. Secondarily, the collaborative review of documents and transcripts provided multiple opportunities for the research team to calibrate operational definitions of concepts within the theoretical framework and, as a result, enhance the inter-rater reliability of our coding processes.

The third phase of the document and transcript review process attempted to identify and establish the extent to which ongoing curriculum reform efforts and district

organizational learning mechanisms were aligned across the district. Using the theoretical and conceptual framework coding conducted in the previous round of review, the research team then identified the documents and transcripts in which those coded keywords and phrases appeared. As a result of this two-pronged coding mechanism, the team was able to gain insight into the extent to which district curriculum priorities and organizational learning mechanisms were aligned between and agreed upon throughout the district.

In person interviews and document review provided rich data sources that the team used to investigate the presence of organizational learning mechanisms (OLMs) within the district and the efficacy of those OLMs. Yin (2009) writes, "The same single case study may involve more than one unit of analysis. This occurs when, within a single case, attention is also given to a subunit or subunits" (p. 50). Applied to our study, these subunits included the Superintendent, central office administrators, principals, instructional coaches and teachers.

Data analysis focused upon providing insights into how district and school leaders leveraged organizational learning mechanisms to implement and support curriculum reform. Our data analysis proved to be ongoing and often coincided with ongoing data collection. Through this approach, the research team engaged in multiple opportunities to refocus and hone processes and protocols thereby strengthening the validity and reliability of our findings. (Maxwell, 2008). Data analysis consisted of three primary approaches, including coding, narrative analysis, and memos/displays.

Coding. Coding utilized an a priori framework as a starting point for the process (Crabtree & Miller, 1999; Maxwell, 2008). This a priori coding system reflected Schechter and Atarchi's (2014) five elements of organizational learning mechanisms (organizational memory, information acquisition, information interpretation, information distribution and information retrieval). Subsequent rounds of collaborative coding built on the initial theoretical coding. These secondary and tertiary rounds of collaborative coding included theoretical coding utilizing concepts that included theory of action, theory in use, mental maps, and task systems (Argyris & Schon, 1978) and concrete conceptual information driven by the district's ongoing curriculum reform priorities.

While a priori coding was the primary mechanism deployed by the team, codes and coding evolved through a constant comparative methodology in which data were continuously reviewed and discussed throughout the collection and analysis process (Miles, Huberman, & Saldana, 2014). As the team became more familiar with the ongoing work of the district, team perceptions and priorities shifted and codes and coding processes were modified to reflect the team's learning and experience within the district.

Narrative analysis. Narrative analysis supported the team in analyzing transcripts and archival documents, and identifying relationships between statements and actions within the context of the district under investigation and the OLT/OLM theoretical framework (Atkinson, 1992). The narrative analysis added value to findings and recommendation in that it uncovered relationships and patterns that the categorical nature of coding may have neglected. As such, the narrative analysis not only added analytical

value, but also contributed to the internal and external validity of the overall study (Maxwell, 2008).

Memos. Memos added a third layer of analysis to the current study (Maxwell, 2013) and offered the research team opportunities to further deepen their collective understanding of the curriculum reform efforts and organizational learning mechanisms of the district. In addition the production of memos, journals entries, and graphics brought further clarity to the team's understanding of both the theoretical framework and its manifestation in the Belvedere Public Schools. As a result, the shared understanding developed by the team enhanced the overall reliability and validity of our findings and recommendations.

Validity and Reliability Considerations

Four tests are commonly used to establish the quality of social science research. These include construct validity, internal validity, external validity, and reliability (Yin, 2009). The team's approach to each of these is addressed in the following pages.

Construct validity. Construct] validity refers to the identification of the "correct" measures of the concept studied (Yin, 2009). The team worked to ensure a comprehensive and shared understanding of key concepts embedded in the theoretical and conceptual frameworks for the study. A collective review of the literature and research addressing organizational learning theory and organizational learning mechanisms was a key starting point for the development of construct validity. Through this review, the research team developed the conceptual definitions that would support the formulation of methodology and the subsequent collection and analysis of data.

As the methodology for this study was developed, the team worked to ensure construct validity through use of cognitive interviewing and pilot interviews in developing interview protocols (Merriam, 2009). Through cognitive interviews, educators were asked to review the interview questions and tell the researcher what they thought the question was asking them. In this way we were able to assess whether or not the questions were addressing the concepts they were designed to capture. Pilot interviews were then conducted to get a sense of the kinds of data the questions would elicit in the field. Feedback from cognitive and pilot interviews was used to revise and improve interview questions.

The constant comparative approach applied during the data collection and analysis phases of this project also helped to bolster construct validity (Miles, Huberman, & Saldana, 2014). Throughout data collection and analysis, the team met regularly to review data, discuss the project, and clarify our current understanding and perceptions of the district's work. As such, the team consistently reviewed its working definitions of concepts embedded in the theoretical framework in light of the ongoing research and data collection.

Internal validity. While the current study was not designed to draw a direct causal relationship between curriculum reform and the district's application of organizational learning theory, the research team aimed to understand and explain the relationship between ongoing curriculum reform efforts and the district's use of organizational learning theory to support that work. As such, the internal validity of this study was considered as the team designed and executed the current study. Using Yin's

(2009) guidance, Table 2.1 presents the mechanisms employed by the team to strengthen internal validity.

Table 2.1

Internal Validity Checks

Strategy	Explanation
Peer review	The research team will present findings to colleagues who are both familiar and unfamiliar with the topic and study. The research team will provide peer colleagues with guiding questions to support critical analysis of the study and its findings.
Rival explanations	The research time will search for confirming and disconfirming explanations that may shed light on the relationships between constructs.
Methods and data triangulation	This study will employ multiple methods (interviews and document review). Data collected from these methods will be triangulated to analyze the constructs under investigation.
Investigator triangulation	Throughout the data collection and data analysis the research team will engage in collaborative inter-rater reliability checks and collaborative coding.
Participant feedback	Participants will be provided the opportunity to review interview transcripts for accuracy. Once complete, preliminary data analysis will be shared with participants to gather their insights and feedback.

External validity. External validity refers to the extent to which a study's findings can be generalized. The context of the current study was an important consideration in framing findings and recommendations. Every school district is unique in terms of, amongst other things, its size, composition and operational policies and procedures. Given the wide variation between school systems and their organizational complexity, it was important that the team provide sufficient descriptive data to couch and contextualize our findings and recommendations. Doing so supported external

validity by ensuring that findings and results are extrapolated carefully to settings in which it is reasonable for them to be applied.

Participant selection was also considered by the research team as a means to further support external validity. The scope and focus of the current study created a situation in which building a participant pool representative of the district was imperative. In building a representative sample the team also enhanced external validity by ensuring that participants from all hierarchical strata were represented in the sample.

Reliability. The reliability of this study related to whether or not the replication of the study would yield the same results (Merriam, 2009). To support reliability, the team employed the use of a case study design protocol and a case study database (Brereton, Kitchenham, & Budgen, 2008; Yin, 2009). The case study protocol utilized a format adapted from EASE (2008) to clearly spell out the processes, procedures, and decision-making criteria for all elements of the current study. In addition to a structured protocol to support the development of the study, the team also worked to ensure clarity and specificity in articulating all methodology so that others may repeat this work in future studies.

CHAPTER THREE: INDIVIDUAL STUDY[3]

Summary of the Dissertation in Practice Team Project

Grounded in organizational learning theory, the group project explored how organizational learning mechanisms (OLMs) were experienced and leveraged by district and school leaders in implementing curriculum reform. For purposes of this study, and as described in Chapter One, we defined organizational learning (OL) as a change in an organization's cognition or in its collective behaviors that are the result of learned experiences over time (Argyris & Schon, 1978; Collinson & Cook, 2007; Fiol & Lyles, 1985; Levitt & March, 1988). We understand organizational learning mechanisms to include "institutionalized structural and procedural arrangements for collecting, analyzing, storing, disseminating, retrieving, and using information that is relevant to the performance of the organization and its members" (Schechter & Atarchi, 2014).

Using an exploratory case study design, the group research used the OLM framework to examine the roles, perceptions and experiences of multiple entities within a school district as they enact curriculum reform. By taking a close look individuals in both administrative and teaching roles, by examining individuals' actions, experiences, and perceptions, the team's intent was to gain a deep understanding of how organizational learning takes place in the district. The entities studied included the district superintendent, a chief academic officer, central office personnel, building principals, coaches, and teachers. By studying each entity, the group developed greater understanding of how the curriculum reform in progress was being implemented, and the

[3] This chapter was authored by Tracy R. Curley and represents an individual contribution to the team project.

roles assumed and perspectives taken by each of the subjects. Table 3.1 outlines the entities studied by individual researchers.

Table 3.1

Individual Researchers and Entities Studied

Researcher	Entity
Bobbie Finnochio	Superintendent and Chief Academic Officer
Marice Edouard-Vincent	Central Office Personnel
Tracy Curley	Principals
Andrew Berrios	Principals
Ian Kelly	Coaches and Teachers

Individual Study Overview

Over the last thirty years, educational reform efforts, including high stakes testing for students, increased accountability measures for schools, the development of a national curriculum, and new evaluative measures for teachers, have all contributed to a change in role of the principal. As these and other reforms necessitate change at the school level, principals are responsible for much more than just the day-to-day issues of personnel and building management. They are at the forefront of reform efforts at the school level, ultimately responsible for how efforts are carried out.

Fullan (2007) suggests, however, that principals can't do it alone. He asserts, "At the end of the day large scale reform is about *shared* meaning, which means that it involves simultaneously individual and social change" (p. 11). Similarly, Leithwood and Louis (2000) contend that "the image of schools as learning organizations seems like a promising response to the continuing demands for restructuring" (p. 3). As organizational learning becomes more widely recognized as a lever for change and improvement (Schechter, 2008; Schechter and Atarchi, 2014), the role of the principal becomes less clearly defined. This study aimed to fill a gap in the literature by exploring how principals supported organizational learning for the purpose of school-wide curriculum reform.

The purpose of this study was to explore how principals support organizational learning for school-wide curriculum reform. Accordingly, my research questions were:

1. How do principals, themselves, learn about district initiatives?
2. In what ways do principals leverage formal and informal structures to support organizational learning?
3. How do principals monitor efficacy of organizational learning mechanisms?

Relation of the Individual Study to the Team Project

Our team proposed to study the district organization as a whole to understand how curriculum reform was implemented through organizational learning. To carry out the study, each member of the research team contributed to the larger project by focusing on one or more of the roles that each of the following played in the use of organizational learning to implement curriculum reform: (a) the superintendent and chief academic

officer, (b) the central office personnel, (c) the principals, and (d) the coaches and teachers. Our group then shared and analyzed all collected data to more fully understand the roles and/or perceptions of each of the individual entities, as well as the processes that supported organizational learning in the district as a whole. Use of this holistic approach allowed us to examine the system from multiple perspectives, enriching our understanding of the district's systematic approach to change through organizational learning.

The existing and emerging body of literature around organizational learning suggests organizational learning as a model for school reform (Mai, 2004; Schechter & Asher, 2012; Evans, Thornton & Usinger, 2012). While other members of the team focused their efforts on other entities in the district, this study was centered on the principal as an agent of educational reform at the school level. In the context of this study, the principal as an agent of curriculum reform was presumably positioned as both an acquirer and distributor of information in their implementation efforts. Additionally, the principal's interpretation of the acquired information was thought to be impacted, potentially, by how and from where that information was received, and have an impact on what information was distributed to other stakeholders, including teachers. Research with respect to the role of the principal contributed to the group's overall understanding of how district and school leaders used organizational learning theory to implement and support curriculum reform.

Review of Literature

As school leaders, principals play a key role in any school wide reform efforts. This review of literature discusses the role of the principal in organizational learning, specifically in implementing school wide curriculum reform. The first section discusses schools as learning organizations, setting the stage for the principal's role therein. The second section offers a more detailed look at principal leadership style within these learning organizations, and explores which styles better lend themselves to supporting organizational learning.

Schools as Learning Organizations

In order to understand the role and responsibilities of principals of schools – considered as learning organizations – it is important to understand what it means to be a learning organization and how one differs from other organizations. Collinson and Cook (2007) define an organization as "a collective that forms for a specific purpose that is beyond the reach of a single individual" (p. 8). A *learning organization* is a specific form of organization in which, according to Senge (2006), its members "continually expand their capacity to create the results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free, and where people are continually learning to see the whole together" (p. 3). When organizations commit, even unconsciously, to maintaining the status quo, they risk becoming what Collinson (2010) describes as a "stuck" system – one in which there is no innovation, no growth or improvement.

The term *organizational learning* dates back to the work of March and Simon (1958) in which they explored the theory around formal organizations. Since the term was first used, researchers and theorists have defined and redefined organizational learning (OL) in numerous ways and in various contexts. Higgins, Ishimaru, Holcombe & Fowler (2012) suggest that, "although definitions abound regarding the term 'organizational learning,' scholars generally concur that organizational learning refers to a higher order of collective learning that extends beyond a single individual; individuals within an organization thus learn from one another and/or group(s)" (p. 67).

Informed by the work of Popper and Lipshitz (1998, 2000, 2004), Schechter (2008) posits organizational learning as a "critical component" to school effectiveness (p. 155), and he suggests that schools must develop structures and practices to support the learning of all community members in an effort to grow and change. Popper and Lipshitz (1998) suggest the use of organizational learning mechanisms (OLM) as a way to understand how organizations learn, by identifying the specific ways in which organizations collect, analyze, store, disseminate and use information related to the organizational goals. Specifically, Popper and Lipshitz (1998) describe these OLMs as "observable organizational systems operated by individual organization members" (p. 170). Basically, they describe OLMs as the things you can see happening to move the organization forward. Building upon this conception of OLMs, Schechter and Tischler (2007) describe them as "concrete arenas where knowledge can be analyzed and shared by individual members and then become the property of the entire organization through

dissemination and changes in standard routines and procedures" (p. 3). These might be committees, meetings, think tanks, improvement plans, and the like.

Given this description, the OLM framework can be used not only was a way to explain how an organization can learn (Lipshitz, Popper, & Friedman, 2002), but as a framework for examining the role of the principal within that learning organization. Previous researchers (Schechter 2008; Schechter & Quadach, 2013; Schechter & Atarchi, 2014) have used the framework to examine schools' development as learning organizations, the relationship between teachers' sense of collective efficacy and OLMs, and the measure of OLMs at the elementary level. This study will utilize Schechter's five-phase OLM framework to explore the role of the principal in school wide curriculum reform. The five phases, as identified by Schechter, include: acquisition of information, interpretation of information, distribution of information, organizational memory, and information retrieval. The study explores, primarily, the phases of acquisition, interpretation, and distribution of information in a school.

Principal Leadership in a Learning School

As researchers begin to recognize the potential for growth in schools as learning organizations, principals and other school leaders have been forced to rethink the way they do business (Becerra-Fernandez & Stevenson, 2001; Mulford, 2006; Hamzah, Yakop, Nordin & Rahman, 2011). Effective leadership now depends on a principal's ability to cultivate a following of practitioners who can support and advance school wide efforts (Marks & Printy, 2003; Hallinger, 2005; Bryk, Sebring, Allensworth, Luppescu & Easton, 2010). Accordingly, researchers suggest a systematic approach to shared

responsibility in attending to school improvement (Laiken, 2003; Bryk, et al., 2010). Specifically, Collinson and Cook (2007) posit learning as a way to ensure the growth of an organization and its responsible responses to changes from the outside. To determine the role of a principal in such a system of shared responsibility and learning – to identify the actual behaviors and actions of the principals of such organizations – it is first necessary to examine various leadership approaches that may be taken by them. Only then might practitioners begin to understand *how* principals attend to the work that is incumbent of organizational learning.

Four theories are discussed, here, along with some description and research around how these leadership styles might manifest themselves in learning organizations. These four theories were selected for discussion based on their relatability to organizational learning, particularly in how they provide a range of access points for comparing how leaders might motivate, participate in, and sustain learning in an organization.

Transactional leadership. Transactional leadership is based on a system of rewards and sanctions that motivate followers to achieve organizational goals (Antonakis, Avolio & Sivasubramaniam, 2003; Sahin, 2004). Avolio & Bass (2002) explain "Transactional leadership occurs when the leader rewards or disciplines a follower depending on the adequacy of the follower's performance" (p.3). Burns (1978) suggests that transactional leadership occurs "when one person takes the initiative in making contact with others for the purpose of the exchange of valued things" (p. 19). In the business world, this exchange might come in the form of bonuses or pay cuts. In the case

of schools, this exchange might come in the form of praise, merit pay, or termination based on student achievement. Transactional leaders, themselves, focus on the attainment of goals and the specific tasks associated with reaching them.

Transactional leadership is not likely to be effective in a learning organization, where the focus is on continuous learning for the purpose of reaching organizational goals (Smith & Bell, 2011). The learning process itself is not defined in a way that the task of learning is ever complete, and a reward system as suggested by a transactional leadership style could not likely be used to sustain the learning over the long haul. Additionally, Amitay, Popper & Lipshitz (2005) found negative correlations between transactional leadership and organizational learning, speculating that the impact of the transactional approach was limited "due to the managers having no authority to substantially reward the workers," (p. 66). Similarly, principals in learning schools are not positioned to provide substantial rewards to staff members on a longterm basis.

Instructional leadership. Neumerski (2013) describes an instructional leader as one who is "highly focused on the core technology of schools, that is, teaching and learning" (p. 318). More specifically, Coldren and Spillane (2007) describe instructional leadership as practice focused on the development of teacher practices for the purpose of school improvement. Given its potential to impact instruction and, therefore, on learning, instructional leadership has been highlighted as an effective means of leadership for more than thirty years (Neumerski, 2013; Hallinger 2005). In 1979, Edmonds found in his research in urban schools that effective schools focus on instruction, and since then other researchers have echoed his findings (Bryk, et al., 2010) In 1985, Hallinger and Murphy

offered a three-component framework for instructional leadership, including a) defining the school mission, b) managing the instructional program, and c) creating a positive school climate. In doing so, they established the instructional leader as both manager and leader of a school (Hallinger, 2005; Prytula, Noonan and Hellsten, 2013). Here, the principal assumes responsibility for day-to-day operations of the school, as well as the long-range planning for ongoing improvement.

A highlighted drawback coming out of the body of literature regarding instructional leadership is that the instructional approach holds up the principal as the primary source of information and expertise (Marks & Printy, 2003; Hallinger, 2005). In consideration of the breadth and depth of the work presenting itself in schools, it is not feasible to think that the principal can be "the" instructional leader in the building, discounting the roles of other leaders and potential leaders in the building (Bush, 2015). As such, Marks and Printy (2003) suggest a model of "shared instructional leadership" in which the principal collaborates with other members of the school community with regard to curriculum, instruction and assessment. The distributed approach is one such model and is described in the following.

Distributed leadership. Shared responsibility is the hallmark of the distributed leadership perspective, as it takes the burden off any one individual, but the distributed approach constitutes more than the division and sharing of tasks. As Spillane (2006) explains, "From a distributed perspective, it is the collective *interactions* among leaders, followers and their situation that are paramount" (p. 4). Similarly, Harris (2006) describes distributed leadership as being concerned with the practice of leadership rather

than the assignment of traditional roles and responsibilities. The distributed approach is not about taking the job of one and dividing it among many; it is about how responsibility is assumed by multiple leaders working in concert. This perspective offers a framework for examining how leadership tasks are addressed by leaders other than the principal, not only by individuals acting separate from other leaders, but also in instances where the leadership is shared or "stretched" over two or more leaders (Spillane, Diamond & Jita, 2003), e.g., the co-chairing of a committee or the co-facilitation of a meeting or professional development.

Finnigan and Daly (2012) posit that the nature of relationships in an organization matters when it comes to school-wide efforts to improve, and suggest that schools pay more attention to the structures for collaboration therein. These collaborative structures may include meetings, teaming opportunities, or other planning time for the purpose of information sharing. Attention to these structures for collaboration may come in the form of scheduled time for collaboration, formal training around collaborative protocols, and the like. In its dependence on collaboration and shared responsibility, distributed leadership lends itself to supporting the goals of a learning organization. Both distributed leadership and organizational learning rely on relationships between members of the organization for the sharing and transfer of information.

Transformational leadership. Transformational leadership is focused on the cultivation of teacher motivation to achieve organizational goals (Leithwood & Jantzi, 2000; Leithwood & Sun, 2012)**.** Burns (1978) stated that transformational leadership "occurs when one or more persons engage with others in such a way that leaders and

followers raise one another to higher levels of motivation and morality" (p. 20). Unlike transactional leaders who motivate through the use of an extrinsic reward system, transformational leaders inspire followers to look beyond themselves and find purpose and value in the work itself (Daly, Der-Martirosian, Ong-Dean, Park & Wishard-Guerra, 2011). In doing so, transformational leaders inspire followers to accomplish more than the follower intended (Lievens, Van Geit, & Coetsier, 1997; Krishnan, 2005). Over time, individual and organizational goals become one in the same.

To a greater degree than transactional leadership and more akin to distributed leadership, the transformational style lends itself to supporting the goals of a learning organization, as transformational leaders are focused on building organizational capacity to support changes in instructional practices (Hallinger, 2003). For example, organizational norms may require that individual learning will be used to further organizational learning, and the principal may support teacher participation in workshops that have learning outcomes aligned to school goals (Evans, Thornton, & Usinger, 2012). Participating teachers may be expected to return to school and share what they have learned with their peers. In this way, the underpinnings of transformational leadership can support the lofty goal of collective learning for the purpose of reaching a goal that is larger than the individual. An example such as this is supported by literature which suggests that the transformational model assumes that the principal does not act alone in using the transformational approach, and Hallinger (2003) suggests, "Transformational leadership may be viewed as distributed in that it focuses on developing a shared vision and shared commitment to school change" (p. 330).

In an effort to more fully understand the leadership approach to be taken by principals in an effort to support organizational learning, it is necessary to more closely examine the activity of the principals within those organizations, drawing connections between the activities in which they engage and the leadership approaches to which those actions are most aligned. Doing so will further inform our understanding of the role and actions of the principal within these necessary structures. The proposed framework for examining the role of principals in this study is outlined in the following section.

Proposed Methodology

Given the central question of "How do principals support organizational learning for the purpose of school-wide curriculum reform?" a qualitative study was proposed. As Creswell (2012) suggests, a qualitative approach is preferred when the goal is "exploring a problem and developing a detailed understanding of a central phenomenon" (p. 16). Specifically, the approach was chosen, here, as qualitative methods "allow for data gathering that can be extremely deep and take into consideration opinions and perspectives that may not initially be visible or obvious" (Butin, 2010, p. 76). For the purpose of exploring the role of the principal, I took an interpretivist approach to the research. In doing so, I approached the research with a primary goal of better understanding the role of the principal by looking at how the principal described and understood the work he or she undertook. Specifically, I sought to know and understand how principals acquired, interpreted, and distributed information as they enacted curriculum reform, as these three phases of organizational learning can be directly

attributed to the principal in a way that organizational memory and information retrieval may not.

Site and Participant Selection

In consideration of the study focus, as well as constraints related to time and the scope of the work to be done, the research team established two criteria for site selection – district size and the presence of an established, focused curriculum reform effort underway. We identified what we believed to be an ideal site – a mid-sized urban district, including approximately 7,000 students, seven elementary schools, two middle schools and one high school. The district had been involved in a multi-district curriculum reform effort over the previous three years.

As described by Patton (2015), "qualitative inquiry typically focuses on relatively small samples…, selected *purposefully* to permit inquiry into and understanding of a phenomenon in *depth*" (p. 52). A case study, in particular, allows the researcher to develop a deep understanding of a singular case (Eisenhardt, 1989; Yin, 2009). This research project included case studies of four principals, and the principals made up the primary sample from which data was collected. These principals were selected from the same district within a five district partnership, three from the elementary level and the other the middle level. Principals were selected from these elementary and middle levels, as district curriculum reform efforts began in the K-8 span before reaching up to the high school level. The expectation was that the elementary and middle levels would be richer data sites given the longer duration of their reform efforts.

For the larger study, in addition to interviewing four principals, the superintendent, two district level leaders, six teachers, and four coaches rounded out the sample. The sample size was determined by need, as Creswell (2013) suggests a "sample group of people that can best inform the researcher about the research problem under examination" (p. 147). Initial criteria for selecting individual principals also included their being involved in the curriculum reform from the time of its inception in the district, although availability and willingness to participate of principals did not allow for such criteria to be met.

Data Collection

This case study utilized in-person interviews and review of archival documents for the purpose of data collection. Data was shared and cross-referenced, as "a major strength of case study data collection is the opportunity to use many different sources of evidence" (Yin, 2009, p. 114).

Interviews. Specific to the individual study, four principals were interviewed, using a semi-structured, focused interview protocol of approximately forty minutes (see Appendix C). Yin (2009) refers to interviews as "one of the most important sources of case study information" (p. 106) and describes the line of questioning as more of a guided conversation rather than a structured session of questions and responses. He further identifies three different types of interviews, including in-depth and focused interviews as well as a survey-type interview. The focused interview followed a case study interview protocol, in which questions were standardized and included probes, but the interviewer had some discretion in terms of order of questions (Harrell & Bradley, 2009). Interview

questions were focused on the actions taken by the principals in acquiring, interpreting, and distributing information (see Appendix C).

Document review. Merriam (1998) describes archival documents as "a ready-made source of data easily accessible to the imaginative and resourceful investigator" (Chapter 6, par. 1), making documents an obvious choice in the data collection process for this research. Prior to and following the interview process, school and district documents were reviewed for evidence of principals' role in organizational learning. Documents collected prior to the interviews offered context for the curriculum reform effort underway. This documentation was retrieved from district and school websites, as well as provisioned by school and district personnel, and included curriculum documents and district and school improvement plans, among other publicly accessible documents. Interviews were expected to, and did, uncover additional recommended documents for review, including memos, newsletters, and meeting agendas.

Data Analyses

After data were collected, the data set analysis included interview transcriptions, as well as documents and associated notes. Interview transcripts and notes from document review were coded by team members to identify themes relevant to the research questions and conceptual framework proposed in this study. Subsequent rounds of coding were used to identify sub-themes, adding specificity to the relevant themes and individual studies. Additionally, data from the principal interviews were examined alongside data collected from interviews with other school and district entities with an eye on *converging lines of inquiry* (Yin, 2009, p. 115).

Validity and Reliability

"Ensuring validity and reliability in qualitative research involves conducting the investigation in an ethical manner" (Merriam, 1998, Chapter Ten, para. 2). Researchers have a responsibility to subjects as well as practitioners to present accurate and meaningful findings. As such, each of the following four aspects of validity and reliability were examined: construct validity, internal validity, and external validity; and data reliability.

Construct Validity. Construct validity refers to the identification of the "correct" measures of the concept studied (Yin, 2008), meaning that the measures describe what they claim to describe. To overcome issues associated with construct validity, I used multiple data sources, including interviews and documents, to ensure that findings were consistent across participants. While some documents were collected prior to on-site interviews, others were identified by and provided by interview subjects, potentially providing a more valid means of studying the practices of the principal, themselves. During the drafting of interview protocols, the team drew upon feedback from pilot interviews in an effort to ensure that the questions revealed information relevant to the study. Following the interview process, coding and analysis, interview subjects were given an opportunity to review the draft study to verify the facts presented and allow for further validation of the measures chosen.

Internal Validity. Internal validity relates to the extent to which research findings represent what is actually happening (Merriam, 1998) at a specific case study site. In an effort to ensure internal validity of the study, multiple data sources were

utilized, including interviews and documents. In addition, multiple researchers were engaged in data collection and analyses. The use of multiple researchers and varied sources of data offered opportunities to check for consistency of findings across researchers and data sources.

External Validity. External validity relates to "whether a study's findings are generalizable beyond the immediate case study" (Yin, 2008, External Validity Section, para. 1). Due to the exploratory nature of this study, findings were not expected to be generalizable to the larger population of principals, and were only intended to provide insight and understanding as to how four principals in the same district support organizational learning for the purpose of curriculum reform. As the purpose of this study was to understand more deeply the role of the principal in organizational learning for curriculum reform, the generalizability of the study may be strengthened by comparing findings with those from similar studies (Merriam, 1998).

Reliability. In ensuring reliability of the study, a researcher seeks at the most basic level to ensure that "*results are consistent with the data collected*" (Merriam, 1998, Chapter 10, part 4). Taking it one step further, Yin (2008) suggests that in ensuring reliability of the study, a researcher makes sure that if another researcher conducted the same study, using the same procedures in the same setting, using the same data set, the second researcher would arrive at the same conclusions. To increase reliability, a case study protocol was developed and documentation of processes was prioritized.

Researcher bias and assumptions. As I am currently the principal of a school, I brought to the research some preconceived notions about the role I intended to study.

Prior to beginning the research, I had spent an entire year planning for and implementing practices aimed at building what I hope will become a high functioning learning organization. I entered the research process with very specific ideas about how a principal should communicate with district and school level personnel about this organizational objective, how a principal gathers information for distribution, and where that information should originate. Because I entered with preconceived notions about the role a principal plays in organizational learning, I ran the risk of becoming blind to other ways to get the work done and remain too focused on what I expected to find. As such, it was especially important to adhere to interview protocols and use multiple researchers to norm interpretations of the data particularly when it had to do with the role of the principal in promoting a learning organization.

Results

In order to understand the role of the principal in organizational learning, it was important to examine how principals, themselves, learned about district initiatives, the ways in which they used internal structures to support organizational learning in their schools, and how they decided what worked and what didn't. In what follows, I describe the ways in which principals learned about district reform initiatives. Subsequently, I describe how principals leveraged existing structures and resources within their schools to support organizational learning. Lastly, I describe how they monitored the efficacy of the organizational learning mechanisms in place.

School Reform: How Principals Learn About District Initiatives

Principals are expected to lead change in schools. Their actions are important because their actions can either make or break school and district-wide change efforts, and are often highlighted or scrutinized when reform efforts are either successful or not. Silins, Mulford, & Zarins (2002) found "Principals' transformational practices, directly or indirectly, influenced every school and outcome variable except students' participation in school. These results continue to support the crucial role of principals in restructuring schools and their role in promoting organizational learning" (p. 634). Their actions are also indicative of their skill sets, belief systems and understanding of the work to be done. In this section, I share how four principals described how they acquired and made sense of new information before they distributed that information to other parties. Their actions are discussed in two sections: information acquisition and information interpretation. Their actions around the dissemination of information for the purpose of change are discussed in a later section.

Information acquisition. Whether by name or description, all four principals identified their participation in monthly cabinet meetings as their primary vehicle for taking in information with respect to district priorities and reform. These cabinet meetings were facilitated by the superintendent and assistant superintendent, and included principals and directors. As described by one of the four, "I think those monthly meetings are key… they're non-negotiable. You go. You don't miss them." As indicated by principals through interviews and shared meeting notes, these meetings were especially important because of the wide range of information shared – anything from

district-wide data analysis and instructional practices to school-based practices around security and social-emotional support of students. Additionally, three of the four referenced the superintendent's sharing of her five-year plan as contributing to their understanding of district priorities. The plan was shared with the entire district during the superintendent's first whole-staff meeting. Stated one principal, "Her plan is exactly… what she expects to achieve. It's laid out. It's getting everyone involved." Three of the four principals also referenced emails from the superintendent as an avenue for acquiring information around district priorities. Overall, information acquisition on the part of principals appeared to stem directly from communication with the superintendent.

Information interpretation. Similarly, all four of the interviewed principals referenced their participation in the monthly cabinet meetings as an opportunity to ask questions, get clarity, and make sense of new information around reform efforts. Explained one, "I think those cabinet meetings are very important because you talk." Another said, "If you have any questions, those all-administrative meetings or cabinet meetings are really good times to answer questions, to help discussions." Two of the four also described participation in "Just Us" meetings that allowed principals to get together following the cabinet meetings to make sense of the information for application at the building level. Specifically, meeting notes suggested that principals used this opportunity to talk about what district-wide structures and initiatives (PLT, data collection, and teacher evaluation, e.g.) looked like across schools. One principal explained, "That's really a chance to kind of hash out what you need to do, things that are building specific or level specific." Another principal elaborated:

On the most basic level, it looks like we have a cabinet meeting, and then we as principals get together to process the information together. From that, oftentimes, we'll all find that we don't have clarity amongst ourselves, and one of us will be delegated to reach out to the superintendent or assistant superintendent about more information about clarity. (See Figure 3.1.)

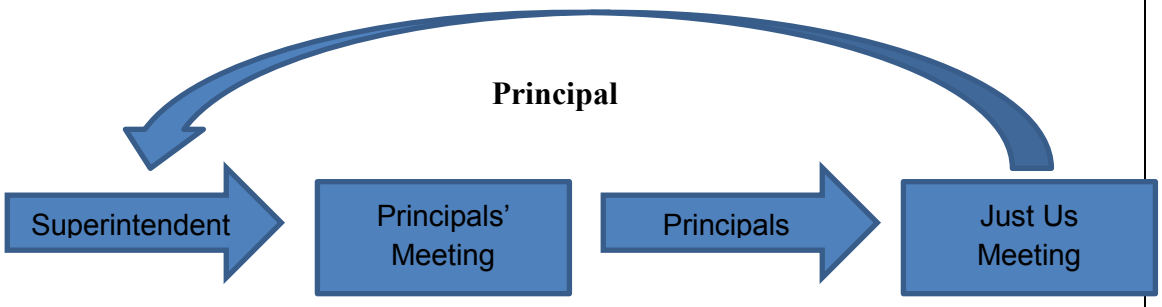

Figure 3.1. How principals get clarity around reform efforts. This figure illustrates the process by which principals acquire and get clarity around district initiatives.

Evidence of this process was found in a meeting notes' section titled, "Questions for Central Office," and included other topics like requests for support around professional learning through mentoring and content meetings.

Taking part in building level meetings with instructional coaches provided yet another layer of sense-making for principals. These content-specific coaches were building-level staff members who provided instructional support for teachers through modeling and weekly professional development. One principal described his meetings with coaches as "an opportunity for them to fill me in on their weekly meetings and then

also for me to check for understanding, to make sure that we're all on the same page when I come back from cabinet meeting or an all-admin meeting." Another explained, "It's really an open forum to discuss, to clarify, to make sure we understand, well we have a common understanding rather, because they look for feedback from us."

Additionally, all four principals offered examples of how phone calls and emails between all administrators, including the superintendent, assistant, superintendent, principals, and curriculum directors, contributed to their deepened, shared understanding of initiatives that ranged from instructional to managerial in nature. As opposed to the information acquisition process, where principals appeared to depend primarily on the superintendent, interpretation of information by principals depends on a wider network of groups and individuals. Ongoing communication among administrators at the school and district level contributed to a shared understanding of expectations with regard to the school-based implementation of district-wide practices and initiatives aligned with the district's mission.

Making Change: How Principals Support Organizational Learning

At times, school principals create and utilize formal structures in schools in an effort to support specific learning or change. At other times, less formal internal structures may be credited with providing valuable support to change initiatives. In this section, I share the various meeting structures and other mechanisms that were offered by principals as they described the different ways in which they support learning for change in their schools. Across schools (but not in each), such mechanisms included building level meetings, written communication, and the educator evaluation process.

Building level meetings. Principals described their information distribution to staff as similar to the ways in which they themselves acquire information, and appeared to rely heavily on meetings. Referring specifically to information acquired by principals at monthly cabinet meetings, one principal shared, "a lot of information is passed out through there with the expectation that it is then discussed at a principal's (staff) meeting and sort of permeates through the building." In this sense, monthly staff meetings at the school level are viewed as similar in process and purpose as the superintendent's cabinet meetings, again giving the impression that building principals valued the meeting time and format, as they were replicating the meeting structure in their own schools.

As described by principals, building-based meetings included monthly Principals' Staff Meetings, Coaches' Meetings, Common Planning and Professional Learning Groups, as well as other meeting opportunities offered only to those schools offered Extended Learning Time (ELT) for students and staff. ELT schools enjoy a longer school day four days each week, with an early release of students one day each week. While most of this time for teacher collaboration was allotted during the school day, teachers at ELT schools were able to meet more frequently and for longer periods of time. Shared one principal, "There are a lot of structures in the school day where teachers are meeting, teachers are working together, the coaches are working with them, and so that's really helped a lot." Meeting agendas and interview data suggested that the wide range of meetings varied in purpose and facilitator. Two of the most common are discussed in the following subsections.

Principals' staff meetings. All four principals spoke of monthly meetings of school based staff as an avenue for information distribution and professional development at the school level, although principals played different roles in those meetings. Data gathered from review of agendas and principal interviews indicated that agenda items included staff updates and discussion with regard to assessments, policy, schoolwide practices, and upcoming events, among others, but also provided opportunity for whole-school learning and development. In reference to these monthly meetings, one explained, "We take that opportunity not to just download information of things that can take place in an email, we really set it up for professional development and teachers will participate in either stations or workshops, or different things." Though termed "Principals' Meetings" by three of the four principals, planning and facilitation did not appear to be the sole responsibility of the individual principals. One stated, "We do a monthly PD, two hours every month…that's when I'll take my 30 minutes with the staff." Providing even more insight with regard to a meeting focused on professional development around instructional practices, another principal shared:

> I'm still the face and owner of most of the content, but the other team members were all facilitating the group portion of the session. They were heavily involved in the planning of what it would look like and what we would want to accomplish with the time, and what we would need to be able to present as an introduction to the teachers.

Given the shared responsibility for planning and facilitation of the monthly "Principals' Meetings," the meeting title may be a misnomer. Based on data gathered from

respondents, principals took a role and had ownership of the time, but the meetings were not theirs, alone. Instead, they resembled what Spillane, et al. (2003) describe as distributed leadership, as "Using

their respective knowledge, these leaders together executed this leadership task" (p. 539).

Common planning and professional learning groups. Three of the four principals spoke of common planning time (CPT) and/or professional learning groups (PLGs) in their schools as opportunities for collaboration, although one referenced no building level meetings other than monthly professional development. While there was not absolute uniformity in how the weekly CPT and PLGs meeting time was used, or in how or by whom these meetings were facilitated, all three principals spoke of the value of such meetings as the primary means of communication with teachers. This was especially true with respect to grade-level specific information around curriculum and data.

One principal described the meetings' value and function with, "Primarily we're communicating to teachers through those CPT meetings, so the literacy and math coach and I will meet (in advance)… and synthesize or prioritize what it is that we want to communicate out to teachers." Echoing this idea, another principal explained, "If I can get into common plannings and get to talk to teachers and really listen to what they need, I can be responsive and push out some PD around what it is they need." A third principal, when asked how he pushes information out to staff, replied, "Our teachers meet daily by content area, so there's an hour in which me, the assistant principals, or the content coaches can go in and work with the teachers." In none of the schools did

principals take a regular lead in the planning or facilitation of the CPT meetings, as they relied heavily on content coaches.

While at least one principal appeared to understand and describe professional learning time/groups and CPT to be the same thing, another noted a distinct difference in the purpose of the meetings, as well as the fact he had changed the focus and facilitation of CPT and PLG upon becoming principal. In his school, that meant additional time for collaboration between teachers. He explained:

> We have weekly common planning time meetings and also PLG – Professional Learning Group meetings….In previous years, the coaches were facilitating the PLG meetings, and CPT meetings were more teacher-driven. Just knowing the purpose of those two meetings, and also talking to the coaches and the assistant principal and the previous principal, it just made sense to me that those were actually happening in the opposite way than it should be.

In his school, daily CPT is facilitated by instructional coaches, while weekly PLGs are facilitated by stipended teachers. Here, the PLGs appear to function similarly to the "just us" meetings described by principals, and offer teachers an opportunity to make sense of what is rolled out in CPT. This similarity in meeting structures, as provided by this principal, may speak to the value he placed on the collaborative structures available to him and even a conscious employment of distributed leadership practices that valued the expertise of teachers and by which teachers "are empowered to engage in leadership roles

and transfer their knowledge and skills throughout the school organization" (Grenda & Hackmann, 2014, p. 56).

Memos and emails. In addition to providing for and facilitating meetings as a means for information distribution, all four principals referenced the use of some kind of daily messaging as a way to introduce and reinforce new information. One, when asked how he got important information to staff, stated simply, "Morning messages every morning…what's going on in the school," before describing the various meeting structures in place. Two other principals shared the same sentiment, with, "I would say I do send a lot of e-mails…but big global things, I think you have to push out either through a staff meeting or if it's smaller, then maybe through some of the common plannings," and, "I send daily morning messages where sometimes I can use that as a forum just introduce or put things on their radar."

The fourth principal was more detailed in what seemed to be very deliberate use of daily messages to staff, as he provided a description of his daily messaging in comparison to other whole-staff emails regarding curriculum and instruction:

> What I want is either the literacy coach or the math coach to be the gatekeeper of that content information, so that I'm not impeding or slowing down the process in any way. The coaches and I decide if something's worthwhile…There'll be two or three emails that go out to teachers about certain things that got discussed at those meetings. Which is fine, because teachers know that if it's coming from the literacy coach or coming from the math coach, (then) it's content and curriculum related. Whereas I could be sending emails about copy paper, and the holiday

> concert. I don't want the instructional stuff to slip through because people are getting waves and waves of operational and…other emails.

Overall, written communication was part of a larger system of information distribution to staff. In all cases, however, principals' descriptions of the purpose of their messaging, alluded to by three of the principals and described in detail by the fourth, this written communication from the principal was less instructional for staff and more "nuts and bolts" in nature. Here, again, was a communication structure described in a way that pointed to a more distributed approach to supporting the growth and learning of staff. Principals were sending frequent emails to push out the more global, day-to-day information, leaving the development-oriented sharing of information to either other school leaders or other communication structures.

Supervision, evaluation, and coaching. Other collaborative structures referenced by principals included the district's teacher evaluation tool, as well as opportunities for coaching. The tool utilized self-assessment, goal-setting, and observation of practice with feedback relative to a common rubric to support the development of instructional practices. All four of the interviewed principals referenced the tool, including its inherent feedback loop, as the greatest lever for change and improvement in the district. As one principal explained:

> If it's looked at not just as an evaluative one-way forum, if it's looked at a two-way growth model where I'm working with a teacher in a coaching capacity and a mentor capacity and I'm working with teachers and using the evaluation system as a way to improve instruction, that's going to

> improve the experiences of the students. That, to me, is probably the best way that I can be influential, is to work collaboratively with teachers around their instructional practices.

Another principal offered, "I think the evaluation piece of walking through teachers' classrooms (to observe practice), giving the feedback, getting those conversations in, I think that's a way to communicate back and forth." In this sense, the district tool was recognized as a viable and effective means of communicating and collaborating around teaching learning and improved practice.

Three out of the four principals interviewed recognized content-specific, instructional coaches as imperative to the work being done at the school level. Whether facilitating CPT or pushing in to support PLGs, coaches were described as central to the work of supporting teachers around content and instruction. Shared one principal:

> Right now I have those coaches designated as the point people because they have the existing relationships with the staff, but also they have the depth of knowledge of not just the content, but they're involved in some of the decision-making from last year about the curriculum, so they have the technical expertise when it comes to the curriculum that I wouldn't necessarily be able to support teachers on.

Another principal, referencing a school-based data team that reviewed and analyzed student performance data for the purpose of informing teacher practice and next steps, explained, "Our coaches run it, but I'm sort of part of it." Offering more evidence of the value of coaches, the same principal shared,

> I think one key way that I can support teachers is by being knowledgeable myself, so participating actively in the PD that we receive, being knowledgeable about it, but at the same time knowing that I'm not going to be an expert in all areas, having those two coaches as my go-to people is very important.

Principals' responses to coach-specific questions served to reinforce data collected in reference to the coach's role in CPT and written communication, and indicated that principals often deferred to the expertise of the content coaches when addressing questions or issues around academic content. This practice of shared responsibility around content is supported by Spillane, et al. (2003) who described the distributed approach as practical and essential, explaining that , "It is highly unlikely that a principal practicing solo can improve instruction in his or her school" (p. 542).

Differences in school structures. While monthly and weekly professional development (PD) opportunities were also touted as big levers for getting information out to staff, not all PD schedules (and, therefore, not all opportunities) were created equally. Expanded Learning Time (ELT) schools enjoyed daily CPT in addition to weekly and monthly school-based PD. The two principals of expanded learning time (ELT) schools spoke of allotted time during the school day that is used to support teacher growth and development. Describing the opportunities provided by ELT in one school, the principal said:

> It used to be done at the end of the day and we embedded it into (the school day), so we have three 45 minutes blocks back to back to back (on Fridays)…and so that frees up the homeroom teachers for three, four, and five together for a two hour PD block.

Another principal of an ELT school explained how this opportunity for teacher development during the school day impacts the use of the twenty hours enjoyed district-wide:

> In an ELT school we're basically on our own for PD. We do have all district PD, which is at least a day, maybe a day and a half, where the whole district goes through PD at the high school. The rest of the time, the 20 hours that we have, is basically structured around what we think we need… It's not extra work for them. It's stuff they never would get to if they were just in the classroom… extra hours of something they think might be meaningful for kids, teachers and families together.

In ELT schools, principals were able to leverage their schedules in a way that increased professional development time for staff. In doing so, they were able to maximize potential impact of collaborative structures such as common planning and professional learning groups. Conversely, one of the two principals not enjoying ELT in their schools contrasted his opportunities with theirs, offering:

> They (ELT schools) do fun Fridays. We do a monthly PD two hours every month… a chance where they'll be doing two hours of PD at the end of the day when the kids are released.

It was clear from descriptions provided by principals, that there were recognized differences among schools with regard to the availability and use of professional development time. The ELT schools, with increased time on learning for both students and staff during regular school hours, did not have to rely as heavily on the district-wide two hours of monthly professional development time. The ELT principals appeared to have more autonomy with respect to how that time was spent, and used the time to provide support that was more targeted to the needs of the school.

As principals described the ways they supported organizational learning in their schools, their dependence on other school and district leaders was apparent. From the facilitation of meetings and professional development, to the distribution of information through emails and coaching, principals relied heavily on the instructional coaches in their buildings to get the work done. In this way, principals appeared to support organizational learning in their buildings using a distributed approach.

What's Working: How Principals Monitor Work in Progress

As even the best laid plans can go awry, it is imperative that principals keep a close eye on the work in progress and the processes in place. Only then might they ensure that the structures in which they invest are truly moving the organization forward; when they are not, principals can adjust practice. Principals identified classroom observations and meetings with coaches as specific ways in which they monitor the

effectiveness of the mechanisms they employ to promote and support organizational learning.

Observation and feedback. All four principals spoke of the teacher evaluation process as a way to monitor progress and increase the effectiveness of practices in place. In concert with the use of student assessment data, one principal described the value of the evaluation system with, "The teacher evaluation system is the primary way to ensure the efficacy of the structures in place. If we provide PD for teachers, the best way to ensure it is being implemented is to observe teachers in action." A second principal, when asked how the evaluation system is leveraged in his school, stated, "I guess you could say (for) accountability, but I think it's been more or less a tool for improvement. We can all get better. That's how we know (that) what's happening in the classrooms is what should be happening." A third principal stated, "(During classroom visits), we're looking for evidence of the district mission and goals being portrayed in the classroom and we give feedback to teachers through our communication window – an online system for dialogue." As described, principals used observation of practice as the primary mechanism for monitoring the efficacy of structures for supporting teacher learning. They theorized that if they were supporting teachers effectively, then evidence of their growth and achievement of PD goals would be observed in their teaching.

Meetings with coaches. Principals also pointed to their own weekly meetings with coaches as being important in helping them to monitor progress. Once again

referencing the importance of coaches, this time with respect to monitoring progress, on principal shared, "For the most part I'm relying on the coaches to dipstick and take the temperature of how things are going….So, then, at our weekly coaches meeting we'll often strategize around how to support the coach and how to support the teachers…" Similarly, another principal described his regular meetings with coaches as "an opportunity for them to fill me in on their weekly meetings and then also for me to check for understanding, to make sure that we're all on the same page." Here, again, principals spoke of a shared responsibility with coaches, this time in monitoring the progress of school initiatives, offering more evidence of a distributed approach to their leadership.

Discussion and Conclusions

As suggested by the literature, the role of the principal changes as organizational learning becomes more widely recognized as a lever for change (Schechter, 2008; Schechter & Atarchi, 2014). Harris (2010) suggests that "the model of the single leader is gradually being eroded within schools as the demands upon one individual are too great" (p. 321) However, results from my study suggest that principals still play a crucial role in learning organizations.

Data collected from principals suggested that they saw themselves not as the experts around any particular learning initiative, but more as conduits of information and implementers of structures for learning. They relied heavily on content coaches and/or other curriculum leaders to provide ongoing professional development and support for classroom teachers. This is not to say that principals were or saw themselves as inconsequential or irrelevant to the organizational learning process, only that they were

not the primary information keepers or distributors of information as such activities pertain to organizational learning.

Principals did play a primary role in the acquisition and interpretation of information in relation to district's priorities around curriculum reform and implementation, as well as other initiatives around the use of data to inform instruction, the supervision, evaluation and development of teachers, among others. Interviews clearly suggested that monthly meetings with the superintendent were valuable and reliable means of acquiring first-hand knowledge around district-wide initiatives and expectations, as were subsequent communications via email and telephone. Principals also had the responsibility of making sense of the information shared, and used their peers to do just that after monthly meetings with the superintendent. An example of this was found in a cabinet meeting agenda item around educator growth that showed up in the notes of a subsequent "Just Us" meeting that included follow-up regarding the same.

No doubt, there was also some school-specific interpretation required, especially since individual schools differed in their length of school day as well as staffing and other resources. Principals described vast differences in the amount and types of professional development offered to staff, and these differences were most directly aligned to whether or not schools were designated as ELT schools. When they were designated as such, ELT schools were able to offer more frequent CPT, weekly PLT facilitated by teachers and weekly early release time for PD, and in addition to the CPT and monthly PD time found in all schools. Outside of the presumed benefits of increased time for teacher development and time on learning for students, the increased time provided by ELT

offers also increased opportunity in those schools to cultivate and enact their practice of distributed leadership. In particular, PLT facilitated by stipended teachers in one of the schools was an example of the time Harris (2010) proposes must be made available to teachers as they develop their leadership skills and processes in a distributed leadership model.

Across the board, principals articulated their roles in terms of how they relayed information, created and implemented structures, met and planned with coaches and other administrators, and communicated expectations based on their interpretation of district priorities. On the surface, and as described by the principals, themselves, the principals ran the risk of diminishing the perceived importance of their roles to those within and outside the school community. As they are more than just managers and relayers of information, it is imperative that the principals promote an understanding of their roles as more than that. A model of Instructional Leadership such as Distributed Leadership may prove helpful to principals in articulating the comprehensive approach each appeared to be taking through their empowerment of coaches and teacher leaders in their buildings. To fully enact the model, principals must actively pursue structures, activities, and climate that support the distribution of leadership (Harris, 2010; Leithwood et al, 2007).

While all of the principals interviewed appeared to be making the best of what they were dealt, it was clear that there was an opportunity divide between the ELT and non-ELT schools. Beyond the opportunities extended to students who were afforded more time on learning, the ELT structure offered professional advantages as well. These included more PD for district-based priorities, as well as more flexibility with respect to

how additional PD time was used. Non-ELT schools seemed to rely heavily on the monthly two-hour PD sessions to deliver quality, whole-school PD, whereas ELT schools with early release on Friday were able to use some of the extra time afforded to focus on things that are more school and classroom-specific. By giving all schools the opportunity for ELT and the presumed benefits that come with it, the district could increase its opportunities for collaboration around best practices that may not be transferrable from school to school given the current structure and opportunities, therein.

Principals appeared to utilize a distributed approach to leadership in the phases of organizational learning explored, here – acquisition, interpretation, and distribution of information. In no phase did the principals act independently, as they employed collaborative practices in all three – from meetings with other principals for acquisition and interpretation purposes, and their work with coaches in the distribution phase. The distributed nature of their practices made difficult the exploration and understanding of their specific contributions to the learning of the organization.

CHAPTER FOUR: FINDINGS, RECOMMENDATIONS, AND LIMITATIONS[4]

Introduction

School districts are large and complex human organizations. Historically, school systems have struggled to establish broad and sustainable change efforts due to their size and complexity. Organizational learning theory presents district and school leaders with a valuable theoretical framework that may support effective and sustained reforms in their districts and schools. As researchers, we sought to understand how district and school leaders used organizational learning theory to implement and support curriculum reform. Specifically, the current study aimed to develop a rich understanding of (a) the systems and structures employed by a school district to support organizational learning and implement curriculum reform and (b) district practices and procedures that enhanced or limited opportunities for organizational learning.

To investigate these problems of practice, the research team employed a qualitative case study methodology across five individual studies. The studies utilized an extensive review of district documents and eighteen in person interviews with a representative sample of administrators and teachers from three elementary and one middle school. Upon analysis, the results of individual studies produced four major themes that served as the basis for our collective findings:

1. The district had established effective collaborative structures that appeared to support individual and organizational learning

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[3] This chapter was jointly written by the authors listed and reflects the team approach to this project: Andrew Berrios, Tracy Curley, Marice Edouard-Vincent, Bobbie Finnochio, and Ian Kelly

2. The district had established effective collaborative structures, however, inequities in time available for professional learning between traditionally scheduled and non-traditionally scheduled schools appeared to impact the use and perceived efficacy of existing organizational learning mechanisms.
3. The district had established strong leadership teams to carry the curriculum work forward, but these teams lacked strategic overlap to support effective organizational learning.
4. The district had established directors and coaches as the instructional leaders of district- and school-level curriculum reform efforts, thereby diminishing the connection of principals to the organizational learning process.

Based on these findings, the team developed a series of recommendations that aimed to build on the existing strengths of the Belvedere schools and to enhance organizational learning. The recommendations included: (a) providing equitable time for professional learning across all schools, (b) building strategic connections between key district leadership teams, and (c) integrating principals into the existing teaching/learning mechanisms of the district. The following pages provide a detailed summary of each finding before concluding with the chapter recommendations and a discussion of implications for practice.

Findings

Integrated Collaborative Structures

Belvedere's collaborative structures support the distribution of critical organizational information from one level of the district to the next. Data analysis identified a number of primary collaborative structures used to distribute through the organization's hierarchy. The collaborative structures at each level of the district are summarized in Table 4.1. During interviews, participants answered a series of questions that asked them to identify (a) to whom they go for information and (b) how they distribute information. Interestingly, and as Table 4.1 highlights, faculty meetings were the only collaborative structure identified for which there was not agreement between participants who perceived the structure as a distribution point (principals) and participants who were the target audience for that information (teachers and coaches). Otherwise, agreement in perceptions between those distributing and those receiving information appeared to support the notion of relatively stable distribution of information throughout the district's hierarchy, supporting the finding that the cohesive nature of the collaborative structures facilitated organizational learning.

Table 4.1

Collaborative structures in the Belvedere Schools

Level	Structure	Distribution Point(s)	Acquisition Point(s)	Agreement
Central Office	Cabinet Meeting	Superintendent Assistant Superintendent	Principals Directors	Yes
Directors/	Directors Meeting	Director	Coaches	Yes

Principals				
	Faculty Meeting	Principal	Faculty	No
Teacher/ Coach	Common Planning time	Coaches/ Teachers	Coaches/ Teachers	Yes
	Professional Learning Communities	Coaches/ Teachers	Coaches/ Teachers	Yes

Individual and organizational learning: The impact of cohesion. As stated earlier, the cohesive nature of Belvedere's collaborative structures appeared to support the accurate and efficient distribution of organizational information and, thereby, supported organizational learning. Participant responses, particularly at the teacher/coach level, suggested that these collaborative structures were critical to their professional learning and growth. At the teacher and coach level, the common planning time (CPT) and professional learning community (PLC) structures were identified as central to the ongoing growth and learning of teachers and coaches. In both structures, teams of teachers, coaches, and other licensed professionals worked to implement and refine curriculum, plan assessments, analyze student performance, and resolve other pressing problems of practice.

Consistent with research on human learning, these collaborative structures provided teachers and instructional coaches with socially mediated learning opportunities in communities of practice. These structures were situated in direct proximity to teaching and learning and, therefore, represented organizational learning mechanisms that were of critical importance to the implementation and efficacy of district curriculum reform

priorities. While these collaborative structures were present and identified by all participants, transcript analysis uncovered a difference in the perceived efficacy of these structures by teachers and coaches working in schools with traditional schedules and those working in schools with non-traditional schedules.

Inequitable Time for Professional Learning

Our analysis indicated that (a) the Belvedere Schools took intentional and strategic measures to deploy an integrated system of collaborative professional structures throughout the district's hierarchy; (b) these structures appeared to have a positive impact on individual and organizational learning; and (c) there were significant differences in terms of time available for and, therefore, access to these professional learning opportunities. As we shall see, the collaborative structures employed in Belvedere represented a strong foundation for organizational learning while, at the same time, presented with clear opportunities for growth.

Time and equitable opportunities for professional learning. While data indicated that Belvedere had deployed an effective system of collaborative structures that supported the distribution of information and organizational learning, there were disparities across the district in terms of the time available for and, therefore, the ability to access the collaborative structures. Two of the four participating schools operated non-traditional school schedules. These non-traditional school schedules included additional time on learning for students as well as additional collaborative time for teachers and other professionals. The other two participating schools operated traditional school schedules that did not include additional time on learning for students or collaborative

time for teachers and other professionals. As we shall see, the variance between school schedules appeared to be the primary cause of differences in both the implementation and perceived efficacy of common planning time and professional learning communities.

Common planning time (CPT) was the organizational learning mechanism most impacted by the differences in school scheduling. Teachers and instructional coaches in schools operating traditional schedules reported having CPT once per week while teacher and coaches in schools operating non-traditional schedules reported having CPT daily. Each CPT was forty-five minutes in duration which, over the course of a 180 day school year, created a significant discrepancy in time afforded to professionals for collaboration and learning. Further exacerbating this inequity, schools operating non-traditional schedules also afforded teachers and instructional coaches two hours of release time each week. Over the 180 day school year the cumulative impact amounted to approximately 26.25 hours of common planning time and collaborative work time for teachers in traditionally scheduled schools and approximately 205 hours of common planning time and collaborative work time for teachers in non-traditionally scheduled schools. Put simply, teachers and instructional coaches in traditionally scheduled schools appeared to access roughly 13% of the common planning and collaborative learning time of their colleagues in non-traditionally scheduled schools. This discrepancy manifested in (a) differential performance on standardized tests and (b) differing teacher perceptions of efficacy between participants across the two school scheduling models

Student achievement and time for professional learning. State standardized test results were collected and analyzed to gain a general understanding of student

performance in traditionally scheduled and non-traditionally scheduled schools. Four years of data were acquired for three of the four participating schools.

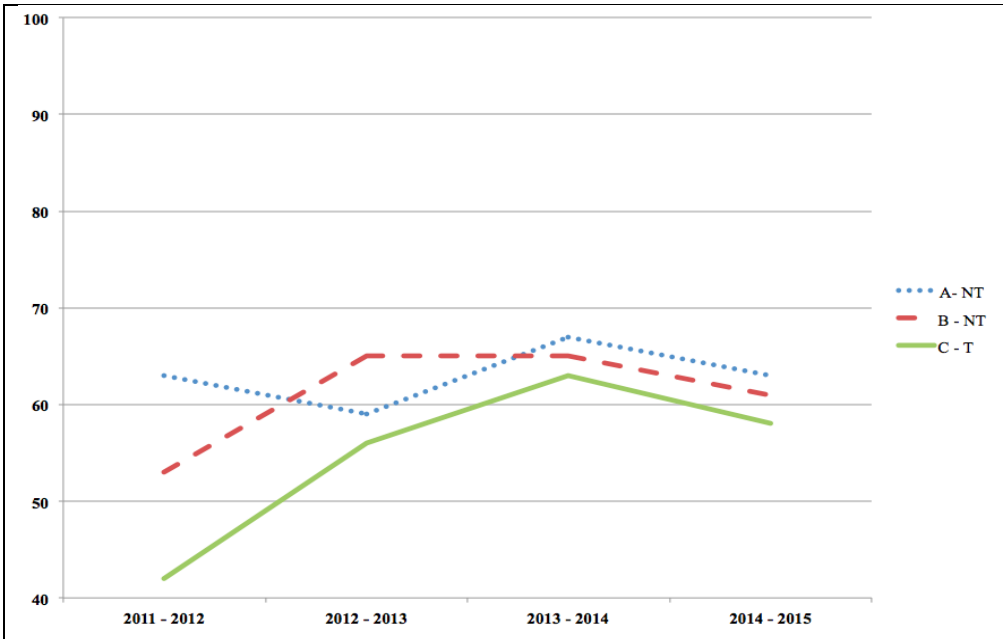

Figure 4.1: District mathematics MCAS performance. The figure captures the comparison of traditional and non-traditional school with regard to mathematics MCAS performance.

The fourth was excluded from the comparison due to the fact that it served different grade levels than the other three schools. Two of the elementary schools in the comparison were non-traditionally scheduled and the third was traditionally scheduled. Figures 4.1 and 4.2 summarize four years of student performance data in ELA and Math. Dashed lines represent the performance of non-traditionally scheduled schools, solid lines represent the performance of the traditionally scheduled school.

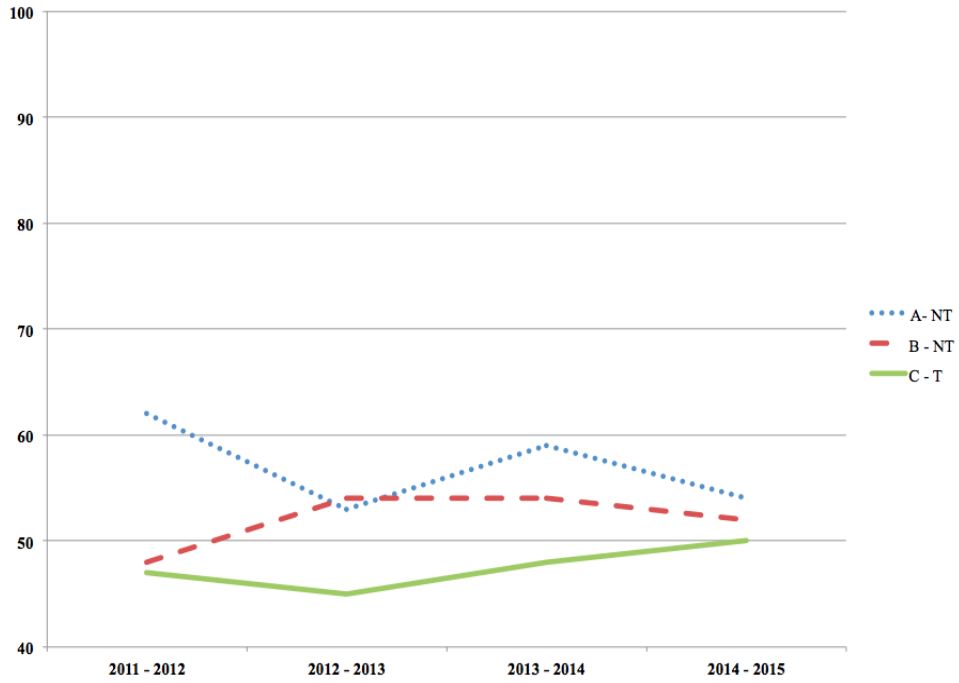

Figure 4.2: District ELA MCAS performance. The figure captures the comparison of traditional and non-traditional school performance with regard to ELA MCAS.

While it was not possible to draw a direct correlation between increased student performance and the additional professional opportunity to learn in non-traditionally scheduled schools, it was worth mentioning the difference in performance. Across four years of data on two standardized test measures the non-traditionally scheduled schools outperformed the traditionally scheduled schools.

Teacher/coach perceptions of efficacy. Beyond differences in student performance, teacher and coach perceptions of efficacy varied significantly between traditional and non-traditionally scheduled schools. One central office administrator recalled their experience in a non-traditionally scheduled school, “I was in a non-

traditionally scheduled school, so we had more time, more consistent time to be able to do those things [work in collaborative teams]." Consistent with the notion that affording more time for professional learning is beneficial, one principal qualified the difference as such, "This particular school has had a major turnaround because we, as a group with non-traditional schedules, we're a different school." Both administrators expressed perceptions of advantage in the non-traditionally scheduled schools and spoke to the belief that the additional time enhanced school performance.

Consistent with administrators, classroom teachers articulated perceived advantage and perceived benefits to school performance. A teacher who has worked in schools with both scheduling models made a poignant comparison, "In our school we have a 45-minute block every day to common plan within our grade level team because of the non-traditional schedule. Previously I had come from a school that we were lucky to get 45 minutes a week. Even then it was often getting taken over by data meetings or you know coaches and stuff. We have a lot of ownership. We do a lot of creating." This teacher's comments referred to (a) the advantage in terms of opportunities to learn in communities of practice through common planning time every day and (b) the benefits in terms of ownership and creativity.

Teachers and coaches in traditionally scheduled schools indicated that the scheduling inequities created a situation in which (a) they were not able to use the collaborative structures effectively due to time constraints, (b) the inequity acted as a basic limitation to their ability to effectively support students, and (c) tension between professionals with and without additional student and professional learning time was

common. In their commentary, one professional in a traditionally scheduled school described the situation as such, “They all had an extra week [referring to additional time for student and professional learning]. Now you have in-district arguments amongst teachers. You’re comparing us with them and they had an extra week and they get extra time in their day. They can do more with their kids than we can. There is friction in the district with that.” This professional’s sentiments effectively captured those of other professionals in traditionally scheduled schools and reflected the ways in which this inequity may have had a negative impact on individual and organizational learning.

The district developed and implemented collaborative structures to support organizational learning relevant to ongoing curriculum reform efforts. While these collaborative structures were found consistently across the district, their implementation and perceived efficacy varied significantly between traditionally and non-traditionally scheduled schools. Schools that afforded teachers additional time to use the collaborative structures appeared to outperform schools that did not provide this time. Through our analysis of the collaborative structures used by the district, it also became evident that opportunities for individual and organizational learning may have been hindered in situations where the collaborative structures lacked strategic connections and overlap.

Collaborative Structures and the Need for Strategic Overlap

The collaborative structures employed by the Belvedere schools represented the primary mechanisms by which the district promoted professional learning relevant to curriculum priorities. As discussed earlier, these collaborative structures, particularly at the teacher/coach level, were perceived as effective professional learning mechanisms.

While they were regarded as such, perceptions of efficacy did not explain the broad discrepancies between professional perceptions of district curriculum priorities within and across the hierarchical structure of the district. Further analysis of participant interview data uncovered that, while these mechanisms were effective in many ways, key collaborative structures at the district and central office level lacked strategic overlap that may have contributed to the lack of clarity around district priorities and, as such, had a deleterious effect on organizational learning.

The superintendent held monthly meetings with central office staff, building principals, and curriculum directors and indicated that this collaborative structure was one of the primary mechanisms used to distribute information to district leaders. Moving from the superintendent's meetings, curriculum directors and principals held meetings that either (a) distributed the information from the superintendent's meeting to their respective level of the organization or (b) processed and interpreted the information from the superintendent's meeting. In either situation the distribution and/or interpretation of this critical organizational information took place in isolation from other leaders. The actions taken by these discrete groups to work with and distribute information independently created a situation in which these key OLMs missed opportunities to strategically overlap as teams and process the district information in a broader community of practice. Figure 4.3 captures the existing structure of the district's OLMs, while at the same time highlighting the missed opportunities for strategic overlap between the OLMs.

Areas A, B, and C of the Venn diagram each represent one of three collaborative teams that operated as OLMs at the central office level (ELA curriculum meetings, STEM curriculum meetings, and principal meetings). In each area, a key group of district leaders, independent of the other groups represented by areas A, B, and C, distributed or interpreted information acquired during the monthly superintendent's meeting. Here we saw the missed opportunities for more strategic and intentional connections between these OLMs.

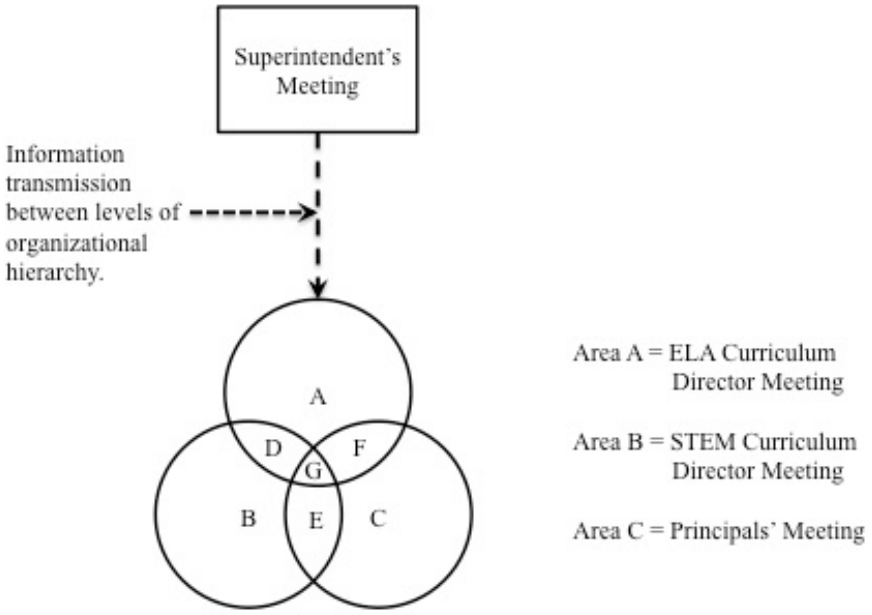

Figure 4.3: Strategic connections for information distribution and interpretation

As seen in areas D, E, and F of Figure 4.3, there were situations in which key district leaders distributed and/or interpreted information together, but these overlapping areas of OLMs were not systematically employed across the district. Area D represents the overlap of math and ELA instructional coaches that happened informally at the

building level. Area E represents the overlap of principals and math coaches while area F represents the overlap between principals and ELA coaches. The interactions represented in areas D, E, and F are all informal OLMs that may or may not, depending on the composition of building and practices of principals and coaches, operate in all schools.

Area G represented the point of strategic overlap and connection that was not identified by any participant as an operational OLM within the district. Area G represents the possibility for a strategic and intentional overlap between the three leadership teams and, as we will discuss in our recommendations, an opportunity to increase the clarity of critical district information and agreement between stakeholders on district curriculum priorities.

Disconnect Between Teaching/Learning and Building Principals

Through the collection and analysis of data two distinct operational task systems were identified in the Belvedere Public Schools. These task systems, for the purpose of this discussion, are referred to as: (a) management and operations, and (b) teaching and learning. Management and operations functions included budget, policy, scheduling etc., while teaching/learning functions included all aspects of curriculum development, curriculum implementation, and students' achievement. Participants indicated that the superintendent and central office administrators straddled both domains and coordinated primarily with building principals on the management and operations of the district. Curriculum directors, instructional coaches, and teachers were consistently identified as the professionals responsible for the teaching and learning task systems. While the structure of district responsibilities appeared to support individual and organizational

learning in Belvedere, two primary obstacles to improving organizational learning appear to exist.

The first obstacle to improving organizational learning manifested in the operational task systems within the district. This arrangement of management/operations and teaching/learning task systems created a situation in which participants perceived principals to be disconnected from the teaching/learning task systems of the district. When teachers and coaches were asked to identify to whom they go for (a) information relevant to the current curriculum reform and (b) expert professional advice, building principals were not identified. Instead, classroom teachers identified job-alike colleagues as their primary sources, while instructional coaches identified curriculum directors. These data points illuminated the composition of the teaching/learning task system of the district and underscored the extent to which building principals were perceived as separate from those systems. While, across the district hierarchy, there was a perceived disconnect between building principals and the teaching/learning mechanisms of the district, those perceptions were reinforced by structural processes and procedures within the district.

More specifically, this structural division appeared to begin centrally and was reflected at the building level. As illustrated in Figure 4.3, district leaders moved away from the superintendent's meeting into job-alike or department-specific meetings that served to distribute and/or interpret that information. As coaches came together with curriculum directors at this level, principals were not present. Conversely, building principals convened meetings as a team to process and interpret the same information

without curriculum directors or instructional coaches present. This may have contributed to the perception that principals were not a part of the curriculum director/curriculum coach instructional team and, therefore, disconnected from the teaching and learning task systems of the district.

The second obstacle to improving organizational learning manifested in the building based task systems that appeared to reinforce (a) the meeting structures at the district level and (b) the perceived disconnect between principals and teaching/learning task systems. This perception was rooted in data from transcripts indicating that instructional coaches were more involved when it came to providing support for teachers' professional development and learning. Instructional coaches and classroom teachers indicated that coaches facilitated weekly common planning time, contributed to professional learning groups, and coordinated with directors to plan/facilitate monthly professional development. Described by principals as anything from "point people" to "gatekeepers" with respect to curriculum information and expertise, they were perceived as responsible for the performative aspects of the teaching and learning task systems at the building level. From the teachers' point of view, coaches provided instructional leadership, while the principals assumed responsibility for the management and operations task systems.

Interestingly, teacher perception of principal involvement with teaching and learning task systems contradicted principal perceptions of their own involvement in teaching and learning. As one principal explained,

> Formally, I meet with my literacy and math coaches and my assistant principal every week, so that's an opportunity for them to fill me in on their weekly meetings and then also for me to check for understanding, to make sure that we're all on the same page when I come back from cabinet meeting or an all-admin meeting.

This data indicated that teachers may not possess information about how coaches interacted and communicated with building principals and other administrators that meet, weekly, to "strategize around how to support the coach and how to support the teachers." Regardless of the practices of principals and coaches, teachers appear to perceive a division of task systems that positioned instructional coaches as the primary resource for information and expertise relating to teaching and learning.

The Belvedere Public Schools have developed and deployed effective mechanisms for collaboration, leadership, and enhancing the practice of teachers and coaches throughout the district. With minor adjustments to these practices and procedures, the Belvedere schools can leverage established strengths to further support organizational learning and, potentially, enhance the implementation of curriculum reforms. In an effort to build on Belvedere's existing strengths and extend organizational learning, we move the following recommendations.

Recommendations

Data indicated that the Belvedere schools utilized a number of integrated systems and structures to support professional learning in service of ongoing district curriculum

reform efforts. While these integrated systems were found to be effective in many ways, findings also indicated specific opportunities for growth that, if leveraged, may enhance opportunities for individual and organizational learning across the district.

Ensure Equitable Time for Professional Learning Across All schools

Opportunities for socio-cultural learning in communities of practice are central to learning. At the building level in Belvedere, common planning time (CPT) and professional learning communities (PLC) provided this research based learning context and were perceived by teachers and coaches as central to their professional learning. Schools participating in the current study operated both traditional and non-traditional school schedules. Non-traditional schedules afforded additional time for student and professional learning and, therefore, created inequities in opportunity to learn for students and staff. It is our strong recommendation that the district look for creative solutions that would provide schools and professionals across the district with equitable access to the collaborative professional learning structures deployed in Belvedere.

At the time of this study, teachers and coaches in traditionally scheduled schools had access to one CPT block per week (26.25 hours per year), while teachers and coaches in non-traditionally scheduled schools had access to one CPT block per day (135 hours per year) and an additional two hours of release time for collaborative work each week (70 hours per year). The cumulative impact of these inequities on opportunities for professional and, therefore, organizational learning cannot be understated. To make the comparison clear, this discrepancy creates as situation in which professionals in

traditionally scheduled schools access 12.8% of the total common planning and collaborative learning time as their colleagues in non-traditionally scheduled schools.

Beyond limitations to opportunity to learn, this significant inequity in access between schools creates friction amongst professionals and feelings of helplessness in teachers and coaches working in traditionally scheduled schools. Participants in traditional schools expressed frustration that they were compared to colleagues and schools who had clear advantages over them. We believe that in finding a way to provide equitable opportunities for professional and student learning across the district, Belvedere will enhance organizational learning and support collegiality across the district.

Establish Strategic Overlap of Key Leadership Teams

Belvedere has implemented effective collaborative structures and leadership teams throughout the district's hierarchy. Through our data collection and analysis, however, it became clear that a subset of the key leadership teams were not connected in strategic, intentional ways that support the effective interpretation and accurate distribution of key organizational information. More specifically, we found missing connections between meetings that included curriculum directors and coaches, and those that included building principals. Data indicated that this disconnect may result in disparate perceptions of district priorities throughout the district. As such, it is our recommendation that the district establish these connections by bringing curriculum directors, instructional coaches and building principals together, regularly at the district level, to discuss and address issues relevant to the district's curriculum priorities. In doing so we project that the district would (a) increase clarity about district priorities

throughout the district; (b) elevate the efficacy of existing collaborative structures; and (c) as we will discuss later, connect building principals more closely to the teaching and learning mechanisms in Belvedere.

Increase clarity around district priorities. The broad range and limited alignment of perceived district priorities identified by participants in the current study reflected the breadth of individual interpretations of Belvedere's primary strategic curriculum reform initiatives. Information moves through organizations via individuals and groups of individuals. As organizational information moves among and between groups, it is interpreted based upon individual mental models of the district's priorities. As such, individual interpretations are not uniform and can alter, for better or for worse, the information before it is distributed further into the organization. This alteration of information is exacerbated as it is interpreted by and passes through additional individuals. This is analogous to the broken phone game and presents a logical explanation for the discrepancies between participants' identification of district priorities.

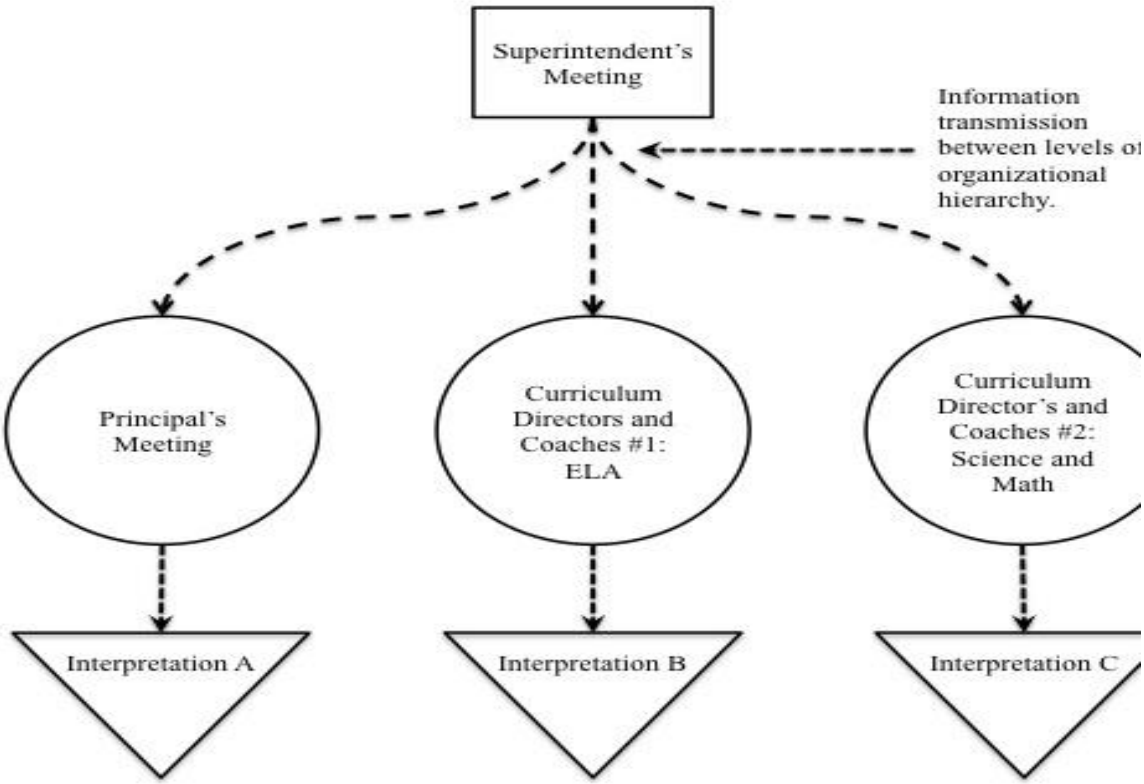

Figure 4.4: Structural influences on information interpretation. The figure highlights the isolated interpretation of information in the district.

As described by participants, the current leadership structure (See Figure 4.4) situates the superintendent's meeting as a focal point for the distribution of key organizational information. From that meeting, participants indicated that the information acquired during superintendent's meetings is then distributed via (a) meetings with instructional coaches from across the district, and (b) meetings between building principals. This structural arrangement between teams, as seen in Figure 4.4, creates multiple venues for the interpretation of critical information regarding district priorities

and, as such, sets the stage for a higher degree of variance further into the human structure of the district.

Considering the impact of isolated interpretations of organizational information on the fidelity of that information as it is disseminated through the organization, the importance and impact of shared interpretations comes into focus. Connecting curriculum directors, instructional coaches and building principals to process, interpret, and develop a shared understanding of district priorities (organizational information) before distributing that information further into the district is an important step that may increase clarity and consistency around the district's strategic curriculum initiatives.

By bringing these key instructional leaders together to building shared understandings and interpretations, Belvedere may create a situation in which a continuous interpretation of Belvedere's strategic initiatives is more likely across individuals and groups throughout the district. In addition to this primary benefit, the district will also further its support of and coherence to the existing system of collaborative structures at the teacher/coach level.

Elevating the efficacy of existing collaborative structures. Common planning time (CPT) and professional learning communities (PLC) were the primary collaborative structures for professional learning identified by teachers and coaches. Our evidence suggested that these meetings were productive, supporting (a) individuals with their practice and (b) the district in moving curriculum reform priorities forward. It is our belief that by aligning the interpretation of district curriculum priorities between

curriculum directors, instructional coaches, and building principals the district stands to enhance the existing efficacy of CPT and PLC structures.

When discussing the collaborative structures in which they distribute and acquire organizational information, curriculum directors, principals, and coaches described team meetings in which they (a) bring and share important organizational knowledge and perspective, (b) work to interpret this shared pool of organizational information and knowledge, and (c) use this shared pool of organizational information to make decisions that influence their collaborative work at the building level. These behaviors are consistent with socio-cultural theories of human learning within communities of practice (Brown, Collins, & Duguid, 1996; Kimbell & Hildreth, 2008; Kolb, 1984; Lave & Wenger, 1991; Orr, 1997; Vygotsky, 1978) and have the potential to greatly enhance individual and organizational learning. The pressing issue, here, is that these three teams use a pool of information to inform their thinking and decision making, a pool that is naturally limited by the meeting structure currently employed by the district. Figure 4.4 captures the structure and portrays the isolated nature of these three teams of instructional leaders.

Each team's ability to process organizational information and make effective operational decisions is limited by the absence of rich organizational knowledge embedded in the other two teams. As a result, each of the three teams operates at less than optimal capacity and individual members of those teams carries structurally limited interpretations of district priorities and district needs back to their buildings. These narrow interpretations of district information and priorities are transferred back to each

building and used to inform the professional collaboration that occurs in CPT and PLC structures. Here, we see the direct link between district instructional leaders' mental models and the potential efficacy of building level CPT and PLC structures.

To further enhance the efficacy and rigor of the CPT and PLC structures, we believe that the district must bring together curriculum directors, instructional coaches and principals for the purpose of building shared mental models of district curriculum priorities. Doing so may enhance CPT and PLC work by ensuring coherence within and between professional teams and, consequently, ensuring more cohesive and valuable feedback/organizational information loops back from the CPT/PLC structure to the instructional leadership team. As a result, these instructional leadership teams would have the opportunity to enhance their work to identify critical issues relevant to teaching and learning across the district.

Integrate Principals into the District's Teaching/Learning Mechanisms

Principals in the Belvedere schools represent an integral part of the district's task systems. As we discussed earlier, building principals are perceived as an instrumental part of the management and operations task systems that support teaching and learning. Creating the conditions for professional and organizational learning is important, but the role of building principals must be perceived more broadly in Belvedere to include the role of instructional leader. Schools in which principals operate as instructional leaders are more likely to provide successful opportunities for professional and organizational learning (Mitchell & Sackney, 2006; Schecter & Qadach, 2012). With this in mind, we

make our final recommendation to strategically integrate the building principals into a more direct and obvious role in the teaching and learning task systems of the district.

Strategic is a key qualifier in the articulation of this recommendation. The management and operations of the district are in good working order and building principals should not be removed from their key roles within those task systems. With minor adjustments to existing systems and structures on the teaching and learning side of the organization, the integration we recommend can be accomplished. More specifically we believe that by (a) combining district level meetings between curriculum directors, instructional coaches, and building principals and (b) ensuring that all principals meet with instructional coaches on a regular basis at the building level, the district will enhance its support of professional and organizational learning.

As suggested earlier, bringing curriculum directors, instructional coaches and building principals together to process and build shared mental models of critical district information will potentially support greater clarity around district priorities throughout the district and enhance the existing efficacy of PLC/CPT structures. Additionally, making this structural adjustment clearly ties principals to the teaching and learning task systems of the district. Centrally connecting district level instructional leaders supports the notion that the district should ensure that individual principals connect with instructional coaches at the building level on a regular basis.

In some instances, data indicated that principals in Belvedere make it a practice to meet regularly with the instructional coaches in their buildings. Doing so provides a critical opportunity for individual and organizational learning in that (a) the principal was

able to check for understanding and alignment around district curriculum priorities, and (b) the principal was able to access important organizational information about the implementation and efficacy of the ongoing curriculum reform efforts. In buildings where this is not the practice of principals, opportunities for district alignment and organizational learning are missed. In prescribing this practice, the district ensures that principals are more closely tied to and informed about the teaching and learning task systems within the district and, consequently, are better equipped to engage in those teaching and learning systems.

Limitations

The development and implementation of the current study was limited by a number of factors and readers should carefully consider the results and their ability to be generalized within the context of the following limitations.

Participant sample size represents a significant limitation to the current study. The study included semi-structured in person interviews with eighteen individuals representing central office administrators, principals, directors, coaches, and classroom teachers. The sample size represents a small portion, approximately 3.3%, of the district's overall teaching and administrative work force. While the in-depth interviews provided a rich perspective on organizational learning within the district, a broader sampling of participants would have added validity and supported generalization of results. Future research including a larger professional sample would support results that are more easily generalized.

The data collection and analysis ability of the current study was limited due to the time constraints of the research project. Due to time limitations, the research team was unable to employ direct observations of organizational learning mechanisms within the district. This data collection method would have complemented data collected through archival document review and in-person interviews thereby providing a more thorough and rich analysis of organizational learning.

Researcher bias must also be taken into account when considering the results of this study. While many steps were taken to mitigate the influence of potential bias on the part of the research team, the composition of the team may have influenced the results. At the time of the study, four members of the research team were building principals and one member was a central office administrator. A more diverse research team that included classroom teachers and/or non-education professionals may have provided additional and valuable perspective on organizational learning within the district.

It was beyond the scope of this study to explore the influence of the district's organizational learning mechanisms on teacher and coach perceptions of equity and, therefore, their perceptions of district values and beliefs about the professionals they employ. It was clear in many interviews with professionals in traditionally scheduled schools that they believed the district did not value them in the same way they valued professionals in non-traditionally scheduled schools. These perceptions are subtle and represent affective barriers to individual and organizational learning. Future inquiry into disparities in opportunities for professional learning would strengthen the existing research as it relates to organizational learning in school settings.

Conclusion

The current study explored how one district leveraged organizational learning theory to implement and support ongoing curriculum reforms. Through a qualitative case study methodology, the research team conducted an extensive review of archival documents and in-depth in person interviews with eighteen professionals in Belvedere. Participants included the superintendent, central office leaders, principals, instructional coaches, and classroom teachers.

Through the collection and analysis of data, it became clear that the Belvedere Public Schools employed an integrated system of organizational learning mechanisms (OLMs) that appear to support both individual and organizational learning. These OLMs included print/digital resources, human information networks, and collaborative teaming structures. While these OLMs appeared to be effective, the research team identified specific recommendations that may enhance overall organizational learning. These recommendations included: (a) ensuring equal time for professional learning across the district's schools, (b) establishing strategic connections between key human organizational learning mechanisms, and (c) the strategic integration of principals into the teaching and learning organizational learning mechanisms of the district.

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Appendix A

Superintendent/ Executive Administrators for Curriculum and Development

Interview Protocol

Position:
Name of District:
Years of experience in Education:
Years of experience in current role:

Question 1: What are the district's major curriculum priorities/initiatives?
Probe: Can you tell me specifically about the UbD curriculum reform?

Question 2: What is the district's plan for addressing those priorities?

Question 3: How do you identify district priorities around curriculum?

Question 4: How do you communicate district priorities around curriculum to central office leaders? Principals? Teachers?

Question 5: How do you know if central office leaders and principals understand the goals and priorities associated with the UbD curriculum reform?

Question 6: How Do you check that district's goals and curriculum priorities are implemented?
Probe: How do you check?
Probe: How do you know if there is alignment between district and school priorities in regards to the UbD curriculum reform?

Question 7: How is information about district goals share with principals? Central office? Teachers?

Question 8: With whom, other than your staff, do you regularly communicate information about school and district curriculum priorities?

Question 9: How do you assure all information about UbD and curriculum resources are accessible for central office leaders? Principals? Teachers?
Probe: How do you know if the methods are effective?

Question 10: How do you know whether the leaders that need the information about the curriculum reform actually get it?

Question 11: What do you do if you realize there is a communication breakdown?

Question 12: Are there any other documents you think I should look at?

Appendix B
Central Office Interview Protocol

Name:
Position:
Name of District:
Years of experience in Education:
Years of experience in current role:

Optional Questions
Gender:
Race:
Age Span: ie. 20-30, 31-40, 41-50, 51-60, 61-70

Question 1: Tell me about how you get information before you select a curriculum reform initiative (UbD)?
Probe: Do you feel you get the information you need?
Probe: Is it enough information or too little?
Focus: Information acquisition

Question 2: What are the district's major curriculum priorities/initiatives?
Probe: Can you tell me specifically about the UbD curriculum reform?
Focus: Organizational memory

Question 3: How did you select this curriculum reform initiative (UbD)?
Focus: Information acquisition

Question 4: How do you inform principals about this curriculum reform initiative (UbD)? How do you make sense of it? How do you inform teachers?
Probe: How do you get the information you need to support English Language Learners?
Probe: How do you get the information you need to support Students With Disabilities?
Focus: Information acquisition, information interpretation

Question 5: How do you provision before you distribute the information to the principals? How do you provision before you distribute the information to teachers? (IA, ID, II, OM)
Focus: Information acquisition, information distribution, organizational memory

Question 6: How do you present it to principals? How do you distribute it (curriculum reform initiative/UbD) to schools? How do you present it to teachers? How do you distribute it?
Focus: Information distribution

Question 7: What skills do you feel principals need to lead the implementation of a curriculum reform initiative (UbD)? What skills do you feel teachers need?
Focus: Information acquisition, information interpretation, information interpretation, organizational memory

Question 8: So how do you build effective skills for principals around this curriculum reform initiative (UbD)? How do you build effective skills for teachers?
Focus: Information acquisition, information distribution

Question 9: How does that equate to what is offered to the principals? How does that equate with what is offered to teachers? (OM, IR)
Focus: Organizational memory, information retrieval

Question 10: How do you attempt to ensure clarity of communications and expectations around curriculum reform (UbD) to schools?
Focus: Information interpretation, information distribution

Question 11: How do you gather evidence of your own progress when working with schools? (OM, IR)
Focus: Organizational memory, information retrieval

Question 12: Do you have any documentation that would support what you just shared?
Probe: Do you have any documentation related to UbD?
Focus: Information retrieval

Appendix C

Principal Interview Protocol

Name:
Position:
Name of District:
Years of experience in Education:
Years of experience in current role:

Optional Questions
Gender:
Race:
Age Span: ie. 20-30, 31-40, 41-50, 51-60, 61-70

Question 1: What are the district's major curriculum priorities/initiatives?
Focus: Theory of action, theory in use, task systems, mental models

Probe: Can you tell me specifically about the district's implementation of Understanding by Design (UbD)?

Probe: Where might I or someone else find evidence of these initiatives?

Question 2: Who determined the district's curriculum priorities and what processes/structures were utilized to set those priorities?

Question 3: And how does central office communicate district priorities around curriculum initiatives?

Probe: Who, in particular, is responsible for communicating those priorities?

Question 4: What is the district's plan for addressing those priorities?

Question 5: What specific methods does your superintendent employ to communicate her plan of action associated with those intended goals/priorities?

Question 5a: And how about the Executive Administrator for Curriculum and Assessment? What is her role in communicating district priorities around curriculum?

Question 6: Once district priorities are communicated, how do you make sense of what's important?

Probe: What steps, if any, do you take to make sure you and superintendent are on the same page?

Question 7: How do you communicate your understanding of district priorities around curriculum back to the superintendent? How does she know whether you're on the same page?

Question 8: In turn, how do you communicate that same understanding to your staff?

Question 9: What methods do you use at the building level to check for teacher understanding of the priorities?

Probe: What steps do you take to ensure you and your staff are on the same page?

Question 10: What are the school-based priorities around curriculum?

Question 11: What are your plans for addressing them?

Question 12: What school-based structures exist to support professional development around the curriculum initiative?

Probe: What role do you play in and around these structures?

Question 12: What professional learning and/or development has to take place in order for priorities to be addressed?

Probe: At the district level?
Probe: At the school level?

Question 13: What role does your superintendent play in the professional development of school principals?

Probe: Identify specific actions of your super.

Question 14: In turn, what role do you play in the professional development of your staff?
Specifically, how do you support the development of your staff in terms of the curriculum reform efforts?

Probe: Identify specific practices, actions, activities.

Question 15: What superintendent actions do you find most beneficial in your learning both personal and professional?

Question 16: As you consider your actions, which do you think contribute most to the development of staff? How do you know?

Question 17: In what ways have you grown/developed since the start of the district's curriculum reform efforts?

Question 18: In what ways do you believe your staff has grown/developed in terms of the reform efforts? How do you know?

Question 19: In general, and even outside of the efforts around curriculum reform, how does the superintendent get important information to principals?

Question 20: How do you get important information to your staff?

Question 21: Where does documentation of this reform effort live?

Probe: Where is information stored at the district level?
Probe: At the school level?
Probe: Where can people go to access new and old information?

Question 22: What role, if any, does your superintendent play in making sure information is accessible to staff? What role do you play?

Appendix D
Teacher Interview Protocol

Name:
Position:
Years of experience:
Years of experience in current role:

Optional Questions
Gender:
Race:
Age Span: ie. 20-30, 31-40, 41-50, 51-60, 61-70

Question 1: What are the district's major curriculum priorities/initiatives?

Probe: Can you tell me specifically about the district's implementation of Understanding by Design (UbD)?

Probe: How do you define UbD?

Question 2: What is the district doing to support the curriculum priorities that you mentioned?

Question 3: What opportunities do you have to engage in these curriculum priorities/initiatives?

Probe: In the development and planning of curriculum?

Probe: In training that is relevant to the curriculum changes?

Question 4: What opportunities do you have to learn about these curriculum priorities/initiatives?

Probe: If specific professional development opportunities are mentioned, ask the participant to describe:
Probe: Who facilitated the session(s)?
Probe: What did you do during the session(s)?
Probe: What did you learn as a result of the session(s)?

Question 5: Are you provided opportunities to attend workshops and training sessions outside of the district? (Information acquisition)

Probe: If no, what type of training interests you most?
Probe: If yes, what kinds of workshops and training have you attended?
Probe: Does the district expect you to share information with your colleagues? (Information distribution)

Question 6: When you need information about curriculum priorities/initiatives, where do you go to get it?

Probe: Are there specific resources or people in the district who you can go to for support?

Question 7: Who do you seek out for expert professional advice? (Information distribution, organizational memory, information retrieval)

Probe: When considering who you reach out to, what criteria inform your choice?

Question 8: Are you provided opportunities to work collaboratively with colleagues? (Information distribution)

Probe: If so, what are those opportunities?
Probe: How do you use that time?

Question 9: How does the district get information about curriculum priorities/initiatives to you?

Probe: How do those work for you?
Probe: Are there ways that you prefer to get information?

Question 10: What is happening at the school level to address district priorities around curriculum?

Question 11: With whom, other than your staff, do you regularly communicate information around school and district priorities?

Question 12: Would you be willing to provide me with a few lesson plans and teacher generated assessments for review in our study?

Question 13: What, if any, opportunities do you have to provide your input and feedback to the school and district on curriculum reform efforts?

Probe: Do you believe that your feedback is accounted for and used in the ongoing curriculum reform efforts of the district?

Question 14: How have you used the year long plans and UbD units on your practice?

Probe: What factors drive your decision making in the implementation of these units?

Question 15: How would you rate the quality of the UbD units?

Scale: 1 – Low quality 3 – Reasonable quality 5 – High quality

Probe: When you consider the quality of the UbD units of study, what criteria factor into your rating of quality?

Appendix E

Informed Consent

Boston College Consent Form

Boston College Professional School Administrators Program (PSAP)

Informed Consent for Taking Part as a Subject in a Research Study

"District and School Leaders Methods of Implementing and Supporting Curriculum Reform"

Principal Investigator: Ian Kelly

Why have I been asked to take part in the study?

- Because you are a district leader, central office administrator, school leader or teacher over the age of 18
- Because you work with curriculum reform in schools

What do I do first?

- Before agreeing, please read this form.
- Before agreeing, please ask any questions you may have.

What is this Study about?

- What methods district and school leaders use to create and support curriculum reform.

Who will take part in this Study?

- **Approximately 30** school leaders involved in curriculum reform (i.e. superintendents, curriculum development administrators, school principals, and teachers) from Belvedere Public Schools.

If I agree to take part in this Study, what will I be asked to do?

1. Answer questions related to your experience with curriculum reform in your district for approx. 60 minutes.
2. If you do not wish to answer a question, you may choose to skip it.
3. Allow the *confidential* * interview to be recorded.

4. If you do not wish to have your answers recorded, please inform the interviewer, and your answers will not be recorded.

**Note: None of the Study participants will be identified by name. The recording will also be password protected in a secure research database. The recording will also be destroyed, without record, after May 01, 2016.*

What are the risks to being in the Study?

- There is a very small but potential risk that some school leaders and administrators, though unnamed, may be easily identified due to the uniqueness of their job title. This risk is minimal for teachers who participate in this Study.
- **There may be unknown risks at this time.**

What are the benefits to being in the Study?

- Information gathered in this Study may help administrators improve curriculum reform.

Will you be paid for participating in this study?

- There will be no payment to participate in this Study.

Will I be paid for conducting this study?

- There is no cost to you to be in this research study.

How will things I say be kept private?

- All records (physical and electronic) collected during this study will be kept private. All interview transcripts and physical research materials are maintained in a locked office with the principal investigator. All electronic materials are stored in a secure database provided by Boston College.
- In any report published as a result of this study, the research team will not include any information that will make it possible to identify you. Doing so involves the use of pseudonyms for all individuals and schools participating in this study. The research team also considers carefully the use of direct quotes and the formats in which data are reported to further ensure confidentiality of participants.
- All electronic information will be coded and secured using a password-protected file. All members of the research team Ian Kelly-Principal Investigator (PI), Andrew Berrios, Bobbie Finocchio, Marice Edouard-Vincent, and Tracy Curley will have access to the audio recordings. After May 1, 2016, all audio files will be permanently deleted by Ian Kelly, Principal Investigator.
- Only the research team will have access to information you provide. The Institutional Review Board at Boston College and internal Boston College auditors may review the research records upon request.

What if I choose to not take part or leave the Study?

- Taking part in the study is voluntary.

- If you choose not to be in this study, it will not affect your current or future relations with the University.
- You are free to quit at any time, for whatever reason.
- You will not be penalized or lose benefits if you stop taking part in the study.
- During the research process, you will be notified of any new findings from the research that may make you decide that you want to stop being in the study.

Will I be asked to leave the Study?

- We ask that you follow directions the best you can.
- If you are unable to do so, or the sponsor cancels the study, you may be asked to leave.

Who can I contact if I have any questions?

- The researchers conducting this study are Ian Kelly-Principal Investigator (PI), Andrew Berrios, Bobbie Finocchio, Marice Edouard-Vincent, and Tracy Curley. For questions or more information concerning this research you may contact Ian Kelly, Principal Investigator, at 774-292-6857 or ian23505@gmail.com.
- If you believe you may have suffered a research related injury, contact Rebecca Lowenhaupt at Rebecca.lowenhaupt@bc.edu who will give you further instructions.
- If you have any questions about your rights as a person in this research study, you may contact: Director, Office for Research Protections, Boston College at (617) 552-4778, or irb@bc.edu

Will I get a copy of this consent form?

- You will be given a copy of this form to keep for your records and future reference.

Statement of Consent:

- I have read (or have had read to me) the contents of this consent form.
- I have been encouraged to ask questions.
- I have received answers to my questions.
- I give my consent to be in this study.
- I have received (or will receive) a copy of this form.

Signatures/Dates:

Study Participant (Print Name_____ Date _____

Participant or Legal Representative Signature: _____ Date _____