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School Leadership Practice:
Putting School Subjects into the Leadership Equation

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Jennifer Zoltners Sherer

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ABSTRACT

School Leadership Practice:
Putting School Subjects into the Leadership Equation
Jennifer Zoltners Sherer

In an era of high stakes testing and increased accountability measures, school leaders face an escalating challenge to improve teaching and learning. When it comes to instructional change, school leadership matters. In order to support school leaders in their efforts to improve instruction, we must build a better understanding of school leadership practice. This dissertation presents the results of a theory building study investigating the following research questions: (a) How is leadership practice in language arts similar to and different from leadership practice in math? (b) How does leadership practice change over time? I consider these questions through a longitudinal case study of leadership practice in an urban elementary (K-8) school over a period of four years. The findings are presented in three research papers. The first paper, Constructing leadership practice in and through subject matter contexts: Commitment and control, describes how mathematics and language arts are core to instruction although leader and teacher perceptions of the subjects vary, examines how school leaders—over time—built their practice differently in math and language arts, and considers elements of subject matter leadership practice through the lens of control and commitment organizations (Rowan, 1990). The findings suggest that school leaders built their practice in language arts with more elements of the commitment model—collaboration, collegiality, and communication—while they designed, but incompletely implemented, more control elements in math. The second paper, Consistency and change as complementary processes in leadership practice: The role of routines, describes how
exogenous factors can contribute to significant changes in an organization through the establishment of new routines and considers one routine as it simultaneously stabilizes and changes the school. The findings suggest that, through routines, individuals change organizations. The third paper, Distributed leadership practice in math and language arts: One school’s enactment of an organizational routine, continues the examination of how leaders build their practice differently in mathematics and language arts through a comparative case study of the same routine in math and language arts. The findings show differences in the ways in which leaders use tools and in the networks that evolve in mathematics and language arts.
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On the first day of orientation, I introduced myself to my cohort with these words, “I decided to leave teaching in order to find a way to make school a better place for more kids.” While a lot has changed since that September day, and in the intervening years I have learned many important lessons about schools, how people learn, and the role researchers can play in the world of education, that initial intention still remains. In the same way that it takes a village to raise a child, it took a community to complete this dissertation. I would like to acknowledge the people who form that community, for the contribution they have made to my learning and for the support they have offered throughout this process.

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CHAPTER ONE
INTRODUCTION

Education reform is a popular pastime among policy makers, philanthropists, and others in the United States. Some reforms are orchestrated from outside the schools—but within the school system (standards, NCLB, new curricula, comprehensive school reform models). Other reform efforts are developed within the school. Regardless of the nature or origin of the reform effort, one consistent theme in the literature over the past 40 years is this: school leadership is critical for the successful implementation of school reform, and in efforts to improve schools (Purkey & Smith, 1983; Berman & McLaughlin, 1976; Louis, Kruse, & Bryk, 1995; Westheimer, 1999). We know that when it comes to instructional change, school leadership matters. If we want to influence schools, understanding leadership practice is critical. Most of the work done on leadership tends to focus its analysis on individual leaders; and the individual leader is a critical component of leadership. However, another way to view leadership is to see it as more than just about the leader, but instead as a system, distributed across multiple individuals (leaders and followers) as well as across the situation (routines and tools), and situated in specific contexts. When we expand our view of leadership, we are able to examine not only the people in leadership roles, but also the followers, the routines and tools leaders use to do their jobs, and the contexts within which their leadership decisions are focused.

By choosing to look at leadership practice in this way, we can begin to unpack the complexities of leadership. We know a lot about characteristics of good leaders, functions of effective leadership, and elements of successful schools, but we know very little about what leaders actually do in successful schools. One way to examine leadership practice is to focus on the activity of leadership. In this dissertation I consider leadership practice at one urban
elementary (K-8) school—Adams School—by examining the activity of leadership, the people involved, and the situation, all within a particular context: I will consider both the context of subject matter as well as grounding my case within the context of the school district. Leadership practice is often talked about in very general terms, particularly elementary school leadership. However, I argue that leaders lead differently in math than they do in language arts.

This dissertation is organized into three papers. I use the distributed leadership framework to study instructional leadership practice at one elementary school. In my efforts to better understand leadership practice, the overarching question I explore is: How is leadership practice in language arts similar to and different from leadership practice in math? Additionally, I focus on organizational routines as a way to better understand leadership practice. In doing so, I explore the role of routines in leadership practice through an examination of the question, How does leadership practice change over time?

In Chapter 2, Constructing leadership practice in and through subject matter contexts: Commitment and control, I begin with a discussion of how school leaders build their practice over time in math and language arts. Math and language arts are at the core of the leadership for instruction in elementary schools. However, when school leaders talk about their instructional practice, they often speak in subject matter neutral terms. In addition, they often build structures that are parallel in math and language arts. While math and language arts are both core to the instruction in schools, I argue that leadership practice in math and language arts is different. In this chapter I consider the leadership practice in math and language arts at Adams School. I use Brian Rowan’s (1990, 2002a, 2002b) organizational commitment and control framework as a lens with which to study Adams, considering how leaders built their practice differently in math and language arts. I begin by showing how math and language arts are at the core of instructional
leadership at Adams, even though leader and teacher perceptions vary across subject area. I then show that, at Adams from 2000-2003, leadership practice in language arts had several elements of a commitment model. Specifically, more teachers and leaders talked about language arts, they had more frequent and more sophisticated discussions about reading and writing, and these differences in participation created a community of practice in language arts that was more heavily populated, more focused on classroom instructional problem solving, and had higher levels of professional collaboration and idea sharing than the math community of practice. On the other hand, math leadership practice, as designed, had several elements of an organizational model of bureaucratic control. Leaders built clear pacing guides that were intended to drive teacher instruction with a standardized textbook, and discussions of math tended to be simplistic and resource focused. I explore consequences of these differences for school leaders and policy makers.

After examining ways in which leadership practice at Adams School was different in math and language arts, I move to an analysis of one organizational routine in order to continue to build an understanding of leadership practice. The work of organizations happens through organizational routines. Examining routines is one way to understand leadership practice. In Chapter 3, Consistency and change as complementary processes in leadership practice: The role of routines, I show, through an analysis of one language arts routine, how leadership routines can be both a source of change and stability. I begin with an examination of how exogenous factors can contribute to significant changes in an organization through the establishment of new routines. I then argue that routines act as a stabilizing force, particularly in times of leadership transition. I show how routines influence leaders’ practice, become integral to the organization, and protect new leaders to do sensitive work.
Routines are often seen as inhibitors to change. In the second section of this chapter, I counter this preconception through an examination of ways in which routines can simultaneously act as a source of change. Because individuals act within routines, human agency is an important component of organizational routines. Using Martha Feldman and Brian Pentland’s (2003) work on routines, I examine aspects of the routine in its ideal, as well as in practice, and show how the connections between these aspects help us to understand how routines have the potential to change an organization. I show patterns of ways in which leaders change aspects of a routine and discuss why they make changes to the routine. I conclude with a discussion of how routines can help us better understand leadership practice and organizational change.

In Chapter 4, *Distributed leadership practice in math and language arts: One school’s enactment of an organizational routine*, I analyze differences in leadership practice in math and language arts through a comparison of how leaders build their practice in one routine. I begin with an examination of the common origin of the Five Week Assessment routine in math and language arts. I then consider how the routine, as designed, has characteristics of a control organization. In practice, however, school leaders enact this routine differently across math and language arts as evidenced in differences in both their use of tools and in the social networks that formed. I show how leadership practice supported these differences, and consider how epistemological differences between math and language arts are reflected in the leadership practice.

In Chapter 5, *Conclusions*, I present a summary of my findings, implications of this work within the current policy climate, and close with ideas for future work.

The purpose of this dissertation is to build theory as well as contribute to a growing understanding of leadership practice and how subject matter influences that practice. As we
better understand what leaders in schools do, we can learn ways to better support them in their work. And as we better understand how leaders lead differently in math and language arts, we can better support their instructional leadership.
CHAPTER TWO

CONSTRUCTING LEADERSHIP PRACTICE IN AND THROUGH

SUBJECT MATTER CONTEXTS:

COMMITMENT AND CONTROL

Introduction

We know that when it comes to instructional change, school leadership matters. If we want to influence schools, understanding leadership practice is critical. Much of the research done on leadership tends to focus its analysis on individual leaders (e.g., Covey, 2003; Ramirez & Guzman, 2003; Blasé & Blasé, 1998; Blasé and Anderson, 1995; Gougeon, 1990), and the individual leader is a critical component of leadership. However, another view is that leadership practice is more than just about a single leader and her practice; instead we can view leadership practice as a system, distributed across multiple individuals. When we expand our view of leadership practice, we are able to examine not only the people in leadership roles, but also the followers, the routines and tools leaders use to do their jobs and the contexts within which their leadership decisions are focused. By choosing to look at leadership practice in this way, we can begin to unpack the complexities of leadership. We know a lot about characteristics of good leaders (e.g., Ramirez & Guzman, 2003; Blasé & Blasé, 1998; Blasé and Anderson, 1995; Gougeon, 1990), functions of effective leadership (Firestone, 1996; Firestone & Corbett, 1988), and elements of successful schools (e.g., Fullan and Hargreaves, 1996; Hallinger & Heck, 1996a, 1996b, 1998; Hallinger & Hausman; 1987), but we know very little about what leaders actually do in successful schools. In this paper I examine leadership practice by focusing on the activity of leadership.
Many researchers see subject matter as an important context for teachers' work (Ball & Lacey, 1995; Little, 1995b; McLaughlin & Talbert, 1993; Siskin, 1990, 1991a, 1991b, 1994; Siskin & Little, 1995). Much of this work has focused on high schools, where teachers’ practice is structured around subject matter constructs (see Stodolsky 1988 for an exception.) Only recently have scholars turned to the implications of subject matter for leadership practice. (Burch & Spillane, 2003, 2005; Cobb & McClain, 2005; Knapp et al, 2005; Spillane, 2006; Spillane & Burch, 2004, in press; Stein & D'Amico, 1999, 2002). In this paper I examine how subject matter differences influence leadership practice in one urban elementary school, Adams, from 2000-2003.

Although both math and language arts are at the instructional core of elementary school, leadership practice in these subject areas is not the same. I examine these differences, using Brian Rowan’s (1990) conceptual framework for developing theories of organizational design for schools. Rowan describes two organizational designs: the control model (bureaucratic control) and the commitment model (a more collaborative model). I argue that subject matter influences leadership practice in elementary schools. In this paper I show how the mathematics leadership practice at Adams was organized more like a control model than the language arts practice was. Leadership practice in language arts more closely followed Rowan’s commitment model. Through an examination of the core of instruction at Adams, the perceptions leaders and teachers have about subject matter, and the activity of leaders and teachers, I show how math and language arts leadership practice was enacted differently in one urban elementary school.

Since scholarship on how the subject matters in elementary school leadership practice is thin (Burch & Spillane, 2003, 2005; Spillane, 2006; Spillane & Burch, 2004, in press for exception) this study adds to this growing body of research. Building an understanding of subject
matters differences in leadership practice will help us to better support leadership practice in elementary schools. Decisions policy makers, central offices, and school administrators make can be influenced by the recognition and examination of these subject matter differences in elementary school leadership practice.

Theoretical framework

School leadership

School leadership is defined in many ways by many people. There are multiple ways that people think about the work of school leaders (i.e. participative, democratic, transformational, moral, strategic, administrative, etc. (Leithwood, Louis, Anderson, & Wahlstrom, 2004). School leaders lead many aspects of the school organization. In this work I focus on instructional leadership. Instructional leadership practice is constituted by the activities of individuals who either intend to bring about change in instruction or are perceived by others as intending to bring about this change. I borrow from Spillane’s (2006) definition of leadership which “refers to activities tied to the core work of the organization that are designed by organizational members to influence the motivation, knowledge, affect, and practices of other organizational members or that are understood by organizational members as intended to influence their motivation, knowledge, affect, and practices,” (pp. 11-12).

Distributed leadership

Distributed leadership is a framework with which to study leadership practice. Distributed leadership is not a prescription for how to lead well but rather a way of looking at the complex phenomenon of leadership practice. The purpose of my work is to continue in the theory-building domain. Through this empirical work that uses the distributed leadership
framework, I glean findings that help us to better understand school leadership. With these findings, we can better train and support school leaders.

Using the distributed leadership framework to study leadership shifts the focus of analysis from leaders to leadership activity (Gronn, 2000; Spillane, Halverson, & Diamond, 2001, 2004). Distributed leadership borrows from distributed cognition, in which the activity of cognition happens in the interaction of multiple components (Pea, 1993; Resnick, 1991; Salomon, 1993). Using this framework, we see that leadership is not just about whom the leaders are and the characteristics of those leaders. While this is important, it is not the whole picture. Leadership practice is situated in the interactions of leaders, followers, and elements of the situation. (See Figure 1 below.) In this work, situation includes elements of the context, both tangible and intangible. Borrowing from socio-cultural theorists, context can be things like reifications of practice (Wenger, 1998) or stable practices (Leont'ev, 1981).

![Figure 1. Distributed leadership framework](image)

This conceptual lens pushes us to expand our study of leadership to elements beyond the characteristics and beliefs of individual leaders. Leaders build their practice in many ways; they are constantly influenced by internal and external factors. As they respond to these factors, they use their own internal resources (expertise, social capital) as well as external resources (outside
experts, current research) to make decisions. The tools leaders use in their practice, and the
routines they create or perpetuate, are elements of their ongoing construction of leadership
practice. The roles they play, the priorities they define, and the tasks they undertake also impact
leaders’ construction of their practice.

Leaders and followers

While the principal of a school is clearly a leader, there are many other individuals who
take on leadership roles. In this paper I use several terms to differentiate between different kinds
of leaders. I consider formal leaders to be administrators and other leaders with formal titles,
such as the literacy coordinator and the math coordinator. Teacher leaders are teachers who act in
a leadership capacity. I use the term followers to denote individuals (like teachers) who, in a
particular activity, do not take on a leadership role. Leadership roles are fluid. An individual may
be a leader in a literacy activity and then walk down the hall and become a follower in a grade
level meeting.

Situation

The distributed leadership framework uses socio-cultural theory as one of its core
theoretical underpinnings with which to understand elements of the situation. Situation is a main
concept within the distributed leadership framework. To study leadership practice, one has to
study the interplay between leaders, followers, and elements of the situation. While situation, as
discussed by socio-culturalists, has many elements, in my work I focus on three aspects of the
situation – structures, routines, and tools.
**Structure**

Structure has many definitions across different disciplines. For the purposes of this analysis, I think about structure as a formally defined/recognized way of organizing. In this sense, structure is distinct from routine and tools in that it is the frame within which the routines and tools exist (Feldman and Pentland, 2003). I focus my use of structure on the ideas of institutional structure that “refers to the cultural or normative ideas that organize how people interact with one another; structure as a cultural phenomena that guides social action – roles, positions, expectations,” (Spillane, 2005, p.386).

**Routines**

By routine I mean “a repetitive, recognizable pattern of interdependent actions, involving multiple actors,” (Feldman and Rafaeli, 2002, p. 311). Because routines are an important part of the work that organizations do (Feldman, 2000; Feldman & Pentland, 2003; March & Simon, 1958), I use scholarship on routines to help me frame the ways in which I study the activity of leadership. While some theorists believe that routines have inertia which inhibits growth and change (Hannan & Freeman, 1984) others believe that routines are actually a source of flexibility and change (Feldman & Pentland, 2003). Much of the work of schools, like any other organization, happens in multiple routines which coexist simultaneously.

**Tools**

The concept of “tool” is an important one in socio-cultural theory and has many definitions. I borrow from Norman’s and Wertsch’s work in defining tools as externalized representations of ideas and intentions used by practitioners in their practice (Norman, 1988) which serve as mediating devices that are used to shape action in certain ways (Wertsch, 1991).
The origins of structures, routines, and tools vary (Halverson, 2003). Sometimes, schools design their own structures, routines, and tools from scratch. Other times, schools receive structures, routines and tools from external agencies or agents such as the local school district. Often structures, routines, and tools are inherited. For instance, when a new leadership team enters a school, they inherit the structures, routines, and tools of the previous administration. In this paper, I focus particularly on routines and tools used by school leaders, as well as their participation within school activities. In doing so, I expand the notion of leadership beyond the actual leaders, and begin to understand how they lead (through the routines they build and sustain as well as through their participation) and what tools they use to lead.

Organizational change

The contingency theory of organizations proposes that organizational features vary depending on how well defined the task environment is. In environments where the tasks are well defined and not variable, a classical bureaucratic type of organization is more appropriate, whereas in organizations where the tasks are variable and not well defined, then a more participatory organization is better suited (Perrow, 1967). Brian Rowan (1990) takes up this idea in his work on the organizational design of schools. He describes two organizational designs: the control design and the commitment design. In the control model, teaching is viewed as a well-defined, non-variable activity. In response to this, leaders develop a standardized system of input, behavior, and output controls that constrain teacher’s methods and content decisions. This model involves curricular alignment. When teaching is viewed as a complex technology, teachers extend their networks and participate more in problem solving, collaboration, and leadership activities. Characteristics of a commitment model include teacher participation in
decision-making, network structures of professional control, collegiality among teachers, and the development of community within the school. Rowan views these models as incompletely implemented in schools, although they work best when applied intensively. In this paper I will show that, while implemented incompletely, math leadership practice at Adams more closely followed a bureaucratic control model while leadership practice in language arts more closely followed the commitment model.

Subject matter as context for practice

Shulman (1986) identified the need to consider the relationship between teachers’ cognitive understanding of subject matter and their practice. While many researchers see subject matter clearly as an important context for teachers' work (Ball & Lacey, 1995; Little, 1993; McLaughlin & Talbert, 1993; Siskin, 1990, 1991a, 1991b, 1994; Siskin & Little, 1995), few look at subject matter as it pertains to elementary teachers. Much of the subject matter scholarship focuses primarily on the high school grades, where teachers’ practice is structured around subject matter constructs. Elementary teachers typically teach a variety of subjects, yet little research has been done to consider if and how discrete subject matter is taught differently by an individual teacher. Stodolsky’s (1988) work demonstrates how elementary teachers treat subject matter differently within their own classrooms. She looked at fifth grade classrooms and found that time allocations vary for subject areas, as do the patterns of activities teachers use in different subject areas.

While much of this research on subject matter has focused on teaching practice, very little has examined leadership or the implications of subject matter on leadership practice. (For exception, see Burch & Spillane, 2003, 2005; Cobb & McClain, 2005; Knapp, Grossman, &
There is a critical disciplinary difference between math and language arts at the elementary school level that forces us to conceptualize the foundations of math and language arts differently. Subject matter disciplines have different foundations, and this enables teachers and leaders to build their practice differently in response to those foundations. Consequently, leaders must approach reform of these subject areas differently (Stein & D’Amico, 1999, 2002).

**Language arts and math: Disciplinary differences**

Structurally, secondary math departments look similar across different districts (Johnson, 1990). Structural similarities exist in math at the elementary school level as well. One study found that eight 4th grade math teachers spontaneously taught fractions the same way using the same text, teaching lessons on the same topic in approximately the same order, and using the same pages of text and very similar examples (Leinhardt & Smith, 1985). These similarities were not found in language arts classrooms. One reason for these structural similarities in math may be that, “mathematics is based on permanent and predictable relationships that can be expressed in principles and rules,” (Johnson, 1990).

Another explanation for the differences between subject matter domains is differences in how people perceive them. Math is perceived by teachers as highly structured and sequential (Stodolsky, 1988), while English is seen as more open and flexible (Grossman & Stodolsky, 1994). Math is also perceived by teachers as limited in other ways. Judith Warren Little (1995a) describes a teacher who states the study of mathematics is by itself—it stands alone. While math is perceived by teachers as linear, there is a greater variety of cognitive goals in language arts
Stephen Ball (1981) also found these differences; teachers of English were more open to heterogeneous grouping while math teachers were against this structure.

A look at these disciplines at the university level represents another way to look at the differences. Math is a single department, and a single discipline. In contrast, language arts is made up of multiple departments and disciplines including linguistics, English, and communications.

**Teacher knowledge**

Teacher knowledge is a critical element of teacher practice (Cochran-Smith & Lytle, 1993; Hill, Rowan, & Ball, 2005; Leinhardt, 1988; Shulman, 1986). Variance in teachers’ subject matter knowledge may also play a role in how leaders and teachers construct their practice. Evidence shows that elementary math teachers may lack the appropriate knowledge to effectively teach math (Ball et al., 2005) while some view elementary teachers as having particularly weak math skills (e.g., Ma, 1999). In response to this, both No Child Left Behind legislation requires and many math associations call for math teachers at all levels to fulfill minimum coursework in mathematics. These same requirements are not as forthcoming for teachers who teach reading and writing.

**The study**

**The context**

In order to study leadership practice in math and language arts, I observed the activities of leadership at one school: Adams School\(^1\). Adams is a public elementary school in Chicago.

\(^1\) Adams, and all other names associated with the school, are pseudonyms.
serving between 900-1200 pre-K-8th grade students. At the time of my study, the student body was 99% African-American; 97% low income, and the mobility rate was high, approximately 35%. There were several transitions in leadership roles over the course of my study. I observed two principals and three literacy coordinators, as well as the departure of a math coordinator and the math coordinator’s assistant.

Urban schools serve as an important focus for the study of instructional leadership because of the challenges they face: high poverty rates, high mobility rates, and high teacher turnover rates. The public, and some scholars, share a certain skepticism about the appropriateness of intellectually rigorous curricula for poor students (Anyon, 1981; Spillane & Jennings, 1997). In light of this, leaders in urban schools in high poverty neighborhoods share a heightened challenge in making instructional changes happen. The leadership at Adams was known for building successful instructional leadership.

During the time that I studied Adams School, the district context is particularly relevant as there were several mandates that impacted math and language arts. In 1996, a restructured Chicago Public School administration introduced two major initiatives that brought high stakes accountability into the district. First, they put schools with 15% or fewer students performing at or above grade level on academic probation. Second, in an effort to end social promotion, students in 3rd, 6th, and 8th grades were required to meet certain scores on the Iowa Test of Basic Skills (ITBS) in order to move to the next grade. These accountability measures dramatically transformed the landscape of the Chicago Public Schools, and Adams was no exception. Leaders acted, to some degree, in response to these district accountability measures. In the third year of my study, the district implemented a reading initiative that prescribed the amount of time students were to receive language arts instruction (minimum two hours each day) and the types
of instruction that were to be delivered. While not the focus of this paper, I want to acknowledge
the district context as one of many that influences school leadership practice.

Methodology

Data collection

This work is embedded in a larger research project: The Distributed Leadership Study (DLS), a 5-year longitudinal study of elementary school leadership funded by the National
Science Foundation and the Spencer Foundation. The research team conducted the 6-month pilot
phase during the winter and spring of 1999. The first full year of data collection commenced in
September 1999 and involved eight Chicago elementary schools as intensive case sites (an
additional five schools served as interview only sites). For the purpose of this analysis, I look at
data collected during the course of five consecutive school years: 1999-2004. The first year’s
data (1999-2000) were collected by colleagues of mine on the Distributed Leadership Project. I
use these data as historical context. I focus my analysis on the following three school years

I use a case study approach (Naumes & Naumes, 1999; Strauss & Corbin, 1997) to study
instructional leadership practice at Adams School. Case study methodology pushes for the
collection of multiple sources of data: documentation, archival records, direct observation,
participant observation, and physical artifacts (Yin, 1994). Collecting a variety of data helps

\[2\]

I began studying Adams School in September, 2000. My extensive data collection period
ended with the 2002-2003 school year, but I continued to periodically visit the school in 2003-
2004. Prior to 2000, Richard Halverson, and several of my colleagues (Lisa Walker, Lauren
Banks, Baylen Linnekin) collected data at Adams School as well. Therefore, I have data for
Adams School that has been collected over the span of five consecutive school years, spanning
six calendar years, 1999-2004.
reduce the likelihood of misinterpretation—it allows for redundancy of data gathering and procedural challenges to explanations (Stake, 1995). These methods of triangulation help achieve reliability in qualitative work. In this work, I engaged in the following forms of data collection: interviews with leaders and teachers, observations of leadership and teaching practice, field notes, leader attendance at key language arts and math meetings, relevant artifacts, and social network surveys.

*Interviews with leaders and teachers*

Interviews are a critical way to uncover multiple facets within a case study (Stake, 1995). Follow-up interviews are critical to determine why and how the changes have occurred. In addition, interviews are effective ways to get at what leaders think they do, as well as to determine who teachers and leaders identify as leaders. Interviews are also important venues for learning about leaders and teachers. Interviews provide a critical opportunity to identify the instructional goals that leaders and teachers have.

Over the five-year study I formally interviewed 17 leaders. Five of these women were formal leaders over the course of my study, three held both formal and teacher leader positions, and nine were teacher leaders (eight teacher leaders and one literacy assistant who acted in an informal leadership role). In total, I collected 38 formal interviews with formal leaders and 42 formal interviews with teacher leaders. The formal interviews were primarily audio taped. When taping was not a possibility, I recorded copious field notes. In addition to the formal interviews, I conducted frequent informal interviews. (These interviews were not recorded and were conducted in the style of informal conversations). I recorded these informal interviews as field notes.
Observations of leadership and teaching practice

Shadowing leaders throughout their day is a good way to see leaders enacting their practice. Leader shadows also provide an opportunity to observe leaders using tools. I shadowed six formal leaders. Classroom observations—accompanied by follow up interviews—allowed me to watch and better understand teaching practice both in how it relates to leadership practice as well as subject matter context. In all, I observed ten teacher’s classrooms (seven of whom were teacher leaders), for a total of 15 classroom observations.

Thick description (Geertz, 1973) field notes for each visit

The nuances of leadership are often found in the in-between places of the school day. For this reason, I found field notes to be a valuable source of data with which to capture leadership practice. In this way, I captured observations and snippets of conversations caught in the hallways, after meetings, before school, and in various offices and public spaces. I have field notes that capture weekly visits over the course of four years.

Attendance at key literacy and math meetings

Meetings are one of the most tangible ways that leadership practice can be observed. They provide a powerful opportunity to observe leadership practice, as well as to watch the interactions between leaders and followers. I observed 20 meetings over the course of three school years. Meetings involving math and/or language arts were primarily video taped. When taping was not possible, I recorded meetings in field notes.

Collection of relevant artifacts

School artifacts serve as one important tool leaders use in their practice. In this study, I collected several artifacts that serve as the reification of practice at Adams: School Improvement
Plans and the topic list of professional development meetings for each of the three focus years (2000-2003).

Social network survey

In the spring of 2002 I collected a social network survey from the faculty. In this survey, teachers and leaders identified what tools and people they used in their math and reading practice. These data create a school-wide picture of social connections and tool use that school personnel identified within their own practice.

I collected data around the instructional goals of the leadership teams. I focused my analysis on activities that directly relate to these stated goals. I collected and analyzed interview data to identify the instructional goals that the leaders had for the school, across time. Interestingly enough, despite a large shift in leadership that took place over these five years, the goals remained remarkably consistent: raise student performance on standardized tests both in literacy (reading and writing) and math. Because of this singular and clear goal, I chose to concentrate my research on leadership activities that most strongly connected with the achievement of this goal.

The data collection process has been iterative. As I found evidence of leadership activity that was important to the school’s goals, based on formal interviews or informal discussions with people, I periodically widened, narrowed, or shifted my data collection net. The purpose of collecting this variety of data, across time, is to gain a better understanding of leadership practice in both math and language arts. This data captures the activity of leadership practice across

\[3\] This is not very surprising since the district and the state put large emphasis on improving test scores with severe consequences tied to any failure by schools to do so.
several leadership teams/eras. Information about the tools used and the people involved are also captured in the data collected.

Data analysis

The purpose of this work is to develop an understanding of how subject matters in instructional leadership practice. One way to get at a leader’s priorities is to look at the actions undertaken by that individual. Another way is to look at what they say they do. Research shows that there is often significant variance between what people say that they do and what they actually do (Argyris & Schon, 1974; Brown & Duguid, 1991; Orr, 1996). There are many reasons that may account for this difference. While some people do tend to embellish their work when they talk about it, most often the difference can be explained by other reasons, such as a disconnect between what they think they do and what they actually spend time doing. When a task is so ingrained in people’s practice, they tend to forget to identify it in their list of day-to-day activities. Consider, for example, a teacher who has acted as department chair for ten years. She is so accustomed to carrying out the additional duties of department chair that, when asked in an interview to explain her duties outside of classroom teaching, she will forget to mention them.

My approach was to capture leadership practice in two ways: by looking at what leaders do, (based on data from meetings, leader shadows, and field note observations) and by looking at what they say they do (based on informal and formal interview data, artifacts, surveys, and observations of practice). I also chose to examine what followers do and say they do because leadership practice is not only about leaders, but also about followers and the interactions between leaders and followers.
What they say they do

Interviews, artifacts, and observations of practice. I analyzed interviews and artifacts using grounded theory. I initially coded the interview data for subject matter relevance—each time math or language arts came up in an interview, it was coded. I then broke down how often positional leaders talked about subject matter and examined what they said about it, based on the codes I developed in the meeting analysis (see next section). I searched for patterns demonstrating what leaders talked about in math and language arts. In a similar vein, I content coded the artifacts. Artifacts such as the school improvement plans and the yearly plan for professional development workshops serve as reifications of what the leaders set forth as priorities in their practice. I analyzed this data around the patterns that emerged, looking at the dominant patterns of talk and representation within the interviews and artifacts. Leaders also share the notion of “what they say they do” in certain activities such as in “kick-off-the-year” meetings and when they share their work with the public. In these cases I also coded these relevant data for content. Using the network surveys, I mapped math and language arts social networks across the school. I then triangulated these maps with observations of practice to determine subject matter maps that captured which tools and social connections people use.

What they do

Meetings and observations of practice. My first cut through the meeting data was based on theory around leadership tasks and functions (Firestone, 1996; Firestone & Corbett, 1988, Heller & Firestone, 1995). I organized speech events, defined as a segment of speech that represents one idea, (Duranti, 1997) by the following six leadership functions (Firestone & Corbett, 1988):
1. Providing and selling a vision
2. Obtaining resources
3. Providing encouragement and recognition
4. Adapting standard operating procedures
5. Monitoring the improvement effort
6. Handling disturbances

(See Appendix A for components of coding categories.) I found evidence of all six functions, but there were other elements of the meetings that did not fit into these six categories. I did a content analysis of these elements and found evidence of two emergent patterns:

1. Academic Press (degree to which schools are driven by achievement oriented goals, values, and norms; high expectations) (Murphy et al, 1982; Shouse, 1997)
2. Teacher Empowerment (Elmore, Peterson, McCrthey, 1996; Smylie & Denny, 1990)

In addition, I found that there were elements from the meetings that were important to leadership practice but were not content specific. I wanted to capture the elements of how leaders spoke, not just what they spoke about. I used Goffman’s (1981) work on speech events, as well as grounded theory, to develop these three categories:

1. Talk Coordination (how leaders coordinated the talk at meetings)
2. Reporting (how and who reports information at meetings)
3. Mode of operation (ways in which leaders engage in the meetings)

I analyzed 20 meetings, across all four years, using these codes. In this paper, I report on patterns identified in that analysis. In my analysis of how leaders participated in meetings, I analyzed a subsection of seven meetings. This subsection is representative in that it samples from multiple meetings, over four school years, and across math and language arts. The meetings in this subsection are typical of meetings at Adams School. I use this sample, rather than my entire data set, to focus my analysis on elements of leadership practice specific to math and language arts.
Variety and uncertainty in teaching

Contingency theorists characterize the work of organizations into four categories based on the levels of task variety and task certainty people experience in their work (Perrow, 1967). Brian Rowan modified this characterization for teaching. He named the categories: Routine, Expert, Amateur, Non-routine When teachers view their work as having low task variety and low task uncertainty, they consider their work to be straightforward. However, when their work has high task variety and high task uncertainty, then they consider their work to be non-routine (see Table 1).

Table 1.

<table>
<thead>
<tr>
<th>Task Variety</th>
<th>Task Uncertainty</th>
<th>Routine (straightforward)</th>
<th>Expert</th>
<th>Amateur</th>
<th>Non-routine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Task Variety</td>
<td>Task Uncertainty</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Task Variety</td>
<td>Low</td>
<td>Routine (straightforward)</td>
<td>Expert</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Task Variety</td>
<td>High</td>
<td>Amateur</td>
<td>Non-routine</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Brian Rowan’s analysis of teacher surveys shows that teachers experience their work in different ways, even within the same schools. In this paper I focus on two components, routine and non-routine, as these two task perceptions map onto Rowan’s control and commitment model of organizational design. In order to avoid confusion with his use of “routine” (to mean straightforward) and my use of “routine” (to mean a repetitive process within organizational leadership practice), I chose to change his term slightly. I use the term “straightforward” in place of his term routine. The contingency model describes different organizational features that are prevalent depending on how people within the organization perceive their work (Fiedler, 1973; Perrow, 1967). Perrow states, “To understand the nature of the material means to be able to control it better and achieve more predictability and efficiency in transformation. We are not
referring to the “essence” of the material, only to the way the organization itself perceives it,” (Perrow, 1967, p. 197).

When the technology of the organization is stable and predictable (straightforward), a classical bureaucratic type of organizational design is most appropriate. But when people’s work is poorly understood and variable (non-routine), they tend to delegate authority to specialists and collaborate with peers (Tyler, 1985). Rowan uses these distinctions in his control and commitment framework for the design of organizations. He observes that school leadership inconsistently and partially implements these models. I use this framework as a starting point to frame an analysis of the leadership practice at Adams in math and language arts from 2000-2003. I begin by showing that math and language arts are at the instructional core of Adams School leadership practice. I then examine ways in which teachers and leaders perceive their work around math and language arts instruction. Based on these perceptions, I show how leaders built their practice differently in math and language arts. Finally, I discuss implications this has on future study and support of subject matter leadership practice.

Mathematics and language arts as core subjects

Math and language arts are at the core of the leadership for instruction at Adams School. While the ways in which leaders talk about their school and their practice are initially subject matter general, the documentation they create to represent their vision and programs, and the organizational routines they build, all focus on this core. The school district’s high stakes testing policy in math and reading is one factor that defines this core, often at the expense of other subject areas.
When interviewed, leaders talk about their work in subject matter neutral ways. At Adams, every positional leader I interviewed had a similar response when asked, “What are your goals at Adams this year for math, science, and language arts?” One assistant principal’s response illustrates this similarity, “Well, basically our overall goal is to strive for having 50% of our kids at or above grade level in all subject matter,” (Assistant Principal, 2001). Even the literacy coordinator described the school’s goal as generic. When asked, “What do you see the school’s goal being?” She replied, “Well, I mean we always mention this…we’re always looking for 50% of our students or more succeeding according to the standardized tests,” (Literacy Coordinator, 2002). Clearly, the party line at Adams at this time was for at least half the students to “succeed” as defined by the standardized tests. From 2000-2003, the high stakes tests were in reading and math (Iowa Test of Basic Skills—ITBS). The Illinois Standard Achievement Test (ISAT), which tested reading, writing, and math at all grade levels, was increasingly a testing priority in the school and district. While the ISAT did not determine promotion like the ITBS did, the district was in the process of planning a shift from the ITBS to the ISAT.4

The artifacts leaders built that represented their vision were similar in math and language arts. The School Improvement Plan, visionary statements, and other formal structures documented in school artifacts at Adams stress the importance of math and language arts. An analysis of the School Improvement Plans, an annual artifact required by the district, reflects the leaders’ priority, and usually equal, treatment of math and language arts. (See Table 2 below.) The documents show that the school’s priority goals and mission statements changed slightly

4 By the 2005-2006 school year, the Iowa Test of Basic Skills (ITBS) was no longer administered in the Chicago Public Schools, having been replaced by the Illinois Standard Achievement Test (ISAT).
over the time I studied Adams, but math and language arts were always listed as priority goals and/or included in the mission statement.

Table 2.

*School Improvement Plan*

<table>
<thead>
<tr>
<th>School Year</th>
<th>Priority Goals</th>
<th>Mission Statement</th>
</tr>
</thead>
</table>
| 2001-2002   | • Improve instruction in reading/writing to increase student achievement by 3%.  
• Improve mathematics instruction to increase achievement by 3%. | No mention of subject areas.  
Budget allocations are listed for math and language arts only. |
| 2002-2003   | • Improve instruction in reading/writing to increase student achievement by 3%.  
• Improve mathematics instruction to increase achievement by 3%.  
• Improve science instruction to increase student achievement by 3%. | “The mission of the Adams School is to focus on the literacy components and to integrate reading throughout the content areas by providing…”  
Budget allocations are listed for math and language arts only. |
| 2003-2004   | (No Priority Goals listed.) | “The mission of the Adams School is to focus on reading, math, and science components…” |

While reading emerges as a priority in the mission statement in 2002-2003, the leaders carved out budget allocations for both math and reading, and priority goals for math and language arts. In all other years, school leaders have given an equal weight to math and language arts across the school improvement plans.

An inventory of organizational routines at Adams shows several of the same routines in math and language arts. Over time, the leaders at Adams built many routines for the purpose of supporting and improving classroom instruction and student learning. One important routine the leaders built was the Five Week Assessment routine—a routine that tracked student performance on math, reading, and writing tests. The leaders also built other routines with the goal of
instructional improvement, often driven by goals created from data generated in the Five Week Assessment routine. These routines were Teacher Leader (in-house professional development) and Breakfast Club (faculty discussions of current research). Each core subject area in the school (Math, Language Arts, Social Studies, Science) had teams of teacher leaders—one identified from each grade level—who were to meet periodically to make decisions around their core area of focus. So, in addition to regular faculty and grade level meetings, leaders at Adams designed many other subject matter routines. With the exception of Breakfast Club, which focused primarily on classroom practice and research related to language arts, leaders gave math and language arts equal treatment, on paper, in all school routines. Wherever there was a language arts routine, there was its math counterpart. While school leaders designed similar routines, the enactment of these routines varied. I discuss this later in the chapter, as well as in Chapter 4.

Leadership practice, as designed, was similar in math and language arts at Adams School. In interviews, every formal leader stated the same overall goal—to get at least half of their students to succeed on the standardized test and/or to see a 3% improvement in standardized test scores for math and reading. This party line about the school’s goal considered both domains as school priorities. In addition, leaders at Adams created written documentation that clearly stated the importance of instructional improvement in the areas of both math and language arts. Finally, they spoke about routines in place to support and improve instruction in both math and language arts. Clearly, as designed, math and language arts at Adams were very similar.

Math is easier to teach than reading

While math and language arts are core to instruction at Adams School, instruction around these two subject matters, and leadership for instruction, was not the same. As the principal said
in an interview in December, 2000, “Reading has been steady, but reading is much harder to improve,” (Principal, 2000). Teacher conception of math has been shown to influence instructional practice (Thompson, 1984). Teachers and leaders at Adams perceived math to be easier to teach than reading and writing. As I show in this section, this is a reflection of high stakes test structures, previous leadership strategies, and teacher actions.

Interview and observation data show that teachers structure much of their instructional practice in response to the high stakes tests. Differences in the material tested in math, reading, and writing may account for some of these perceptions of math as more straightforward than language arts. For the benchmark grades, the ITBS tests in math are more skill focused and require the students to do less problem solving and less higher level thinking than the tests in reading. (See Table 3 for the exact breakdown.)

Table 3.

*ITBS Test Breakdown (Numbers represent % of test per category)*

<table>
<thead>
<tr>
<th></th>
<th>3rd grade</th>
<th>6th grade</th>
<th>8th grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Factual</td>
<td>33</td>
<td>41</td>
<td>32</td>
</tr>
<tr>
<td>Inferential</td>
<td>47</td>
<td>29</td>
<td>28</td>
</tr>
<tr>
<td>Evaluative</td>
<td>20</td>
<td>29</td>
<td>38</td>
</tr>
</tbody>
</table>

% of Test per Category

<table>
<thead>
<tr>
<th></th>
<th>3rd grade</th>
<th>6th grade</th>
<th>8th grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Concepts</td>
<td>25</td>
<td>24</td>
<td>31</td>
</tr>
<tr>
<td>Estimation</td>
<td>9</td>
<td>9</td>
<td>11</td>
</tr>
<tr>
<td>Problem Solving</td>
<td>16</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>Data interpretation</td>
<td>11</td>
<td>18</td>
<td>12</td>
</tr>
<tr>
<td>Computation</td>
<td>39</td>
<td>34</td>
<td>32</td>
</tr>
</tbody>
</table>

5 Benchmark grades are 3, 6, and 8. This means that student performance on the ITBS in these grades is a large factor in determining promotion to the next grade.
For instance, one third of the third grade reading test is skill based, whereas over half of the math test focuses on skills. In reading, third graders are asked to evaluate, interpret, and make inferences about text, often non-fiction text which is particularly difficult for urban students. Classroom observations show that these same students are asked to do very little problem solving in math.

This difference between reading and math is echoed throughout the actions and words of teachers and leaders within the school. An historical precedent was set at Adams in the mid-1990’s that may contribute to this perception. At that time, school leaders decided to use the same strategy to improve student performance (as measured by standardized test scores) in math and in language arts: they adopted a new textbook series for each subject. The following year, test scores in math rose but scores in reading did not. After that, math leaders continued to use the math textbook as the core focus of instructional support while language arts leaders extended their practice beyond a common textbook series to include a variety of text books, trade books, and other reading materials. I discuss this shift in practice in more detail later in the chapter.

Other patterns from my data analysis showed that teachers and leaders perceive math to be an easier subject to teach than reading and writing. In half the classrooms I observed and/or teachers I interviewed, this perception was illustrated. Here, a grade level math leader explained how she does not need to support her teachers in mathematics. After discussing the collaboration between her grade-level colleagues in reading, she replied to my inquiry regarding math,

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6 The data from remaining classrooms and interviews are inconclusive. In some cases I only have the teacher teaching/talking about one subject. I do not, however, have any evidence from teachers that math is harder to teach than reading.
We (the second grade team) haven’t really (met about math) yet…I think they pretty much, I mean it’s pretty easy. I just follow the book. Like I do an activity with (the students) to start out like to warm them up. And then you go in and do the page together and then they do it on their own for practice. (Teacher, 2001)

A teacher transition in the third grade in the fall of 2002 serves as another example of teachers who find teaching language arts to be more complex than teaching mathematics. A math leader—Ms. Sunny—and a new teacher to the school who was formerly a reading specialist—Ms. Lander—began the year with departmentalized third grade classrooms. Ms. Sunny taught math to both third grade homerooms while Ms. Lander taught reading and writing to both groups of students. Several months into the school year they decided to change their structure back to self-contained third grade classrooms. Ms. Sunny’s response was to quit the math team in order to focus on reading instruction, something she saw as a daunting burden. Here she explains her departure from the math team,

It was just like (sighs) a big huge transition. And like I said, I’ve started doing reading and I haven’t done reading in a long time…I don’t have a system anymore…I just couldn’t do it (be a member of the Math Team) anymore. I lost my focus after I had to start doing reading I had to focus so much on how to reach (my students) in reading that I um, I felt like I could only focus on math for that classroom. I couldn’t focus on the school and what everybody else was trying to do. I just had to focus on my classroom. (Teacher, 2002)

One might assume that Ms. Lander would have a similar dramatic response, particularly since she was a new teacher from a reading specialist position who had never taught math before. In an interview shortly after the decision was made, she did reflect on her initial concern, “My only hesitance was that I’ve never taught math in elementary school. I mean not that I can’t regroup, I will have to retrain myself, so it’s not called borrowing,” (Teacher, 2001).

The contrast in perceptions around math and language arts is clear in Ms. Lander’s description of their planning time,
And then the clincher for me (to make this change) was that Ms. Sunny said, because she hasn’t taught reading for three years, so she’s also taking on a big planning thing. And reading and writing are bigger planning potentially than math. So she said that we would make sure we set aside like our prep time so that we would plan the reading and writing lessons together. (Teacher, 2001)

Leaders and teachers at Adams School think math is easier to teach, and requires less planning and collaboration, than reading and writing require. This might have something to do with the skills teachers and leaders perceive students to already possess when they arrive at school. At Adams, the average student test scores in math are higher than in reading. The assistant principal explains,

(When) we look at the Iowa tests scores, you don’t see that much of a difference, but you will see a difference in the math score and the reading score. You will find that the math score, on the average, is higher than the reading score. So they are problem solvers. And we take a look at their environment. These are – we have a high percentage of kids from poverty level. They’re learning early how to struggle. They’re learning how to problem solve early. Because whatever is going on in their home environment and their community, they have to find a way to survive. It’s all about a survival plan. You definitely have to have some type of strategies for problem solving. A lot of them are – when it comes to reading word problems or if they had concepts where they have to actually read something to be able to solve the problem, you will find difficulty there. But if it’s just dealing with numbers, shapes, things of that nature, patterns, they’ll get through it. They’ll get through it. As long as they don’t have to read. If you had someone who could actually sit there and read what the words say – what – what the problem – what they’re expected to do, they can solve the problem and they’ll get it right for the most part. So I find their strength to be math. (Assistant Principal, 2001)

In the next section, I discuss how this difference in perception about math and language arts gets played out in the ways in which leaders build their practice.

Commitment and control: Differences in leadership practice

In schools characterized by bureaucratic control, leaders develop a standardized system of input, behavior, and output controls that constrain teachers’ methods and content decisions. Leaders align the curriculum using clear inputs (standards and objectives) and create tools such
as pacing guidelines to control teacher practice. They use tests as a form of clear outputs. “One theory holds that teaching is a routine technology and that control-based strategy of organization design can enhance school effectiveness,” (Rowan, 1990, p. 358). In a commitment organization, individuals view teaching as complex and non-routine (Rowan, 1990). Leadership is expanded beyond authority figures like the principal to utilize teachers’ expertise. In theory, teachers’ commitment and motivation increases as teachers have more authority, variety, and collegiality in their work. In the commitment model, leadership is distributed across a wider array of individuals. Rowan describes commitment organizations as having characteristics such as teacher participation in decision-making, network structures of professional control, collegiality among teachers, and the development of community within the school. I argue that at Adams from 2000-2003, leadership practice in language arts had more elements of a commitment model than math leadership practice. The leadership practice in math, by design, had components of an incompletely implemented control model.

Commitment: Leadership practice in language arts and mathematics

In this section I explore three of Rowan’s commitment characteristics (network structures of professional control, collegiality among teachers, and the development of community within the school) as they relate to leadership practice in language arts and mathematics at Adams School from 2000-2003. I start by showing how the network structures of professional control at Adams were more complex in language arts than math. I then use Judith Warren Little’s (1982) work on collegiality to show how the same teachers were more collegial in their language arts practice than they were in their math practice. Finally, I show how the development of
community was more powerful in language arts than it was in mathematics. I discuss how leaders, through their practice, built structures to support these differences.

*Network structures are more connected in language arts than in math*

Teachers and leaders built more connected network structures of professional control in language arts than they did in math. This can be seen in two ways: 1) in the array of routines that leaders built and carried out in language arts and not in math and, 2) in the different distribution of leadership practice in math and language arts.

*Wider array of enacted language arts routines*

Over time the principal, Dr. Williams, and her literacy coordinator, Ms. Tracy, built a series of interconnected routines in language arts. While they designed a few of the same routines in math, observation data show they were not enacted in similar ways. (See Table 4 below for routines.) The routines they built are described below.

- *Breakfast Club.* A series of monthly morning meetings, often led by teachers, to discuss recent research. Teachers discussed literacy journal articles together as they ate breakfast provided by Dr. Williams.

- *Teacher Leader.* The faculty voted to lengthen the school days so they could have a monthly half-day for professional development sessions. Instead of bringing in outside “expertise” to lead these professional development meetings, Dr. Williams tapped into the strengths of her faculty, and the teachers taught each other in these *Teacher Leader* sessions.
• **Content Focused Groups.** Two smaller groups—the Literacy Committee and the Math Team—met to plan language arts and math activities, discuss classroom practice, and reflect on progress made and desired.

• **Five Week Assessment.** Every five weeks students were assessed in math, reading and writing. The assessments, designed by the literacy coordinator, provided an opportunity for students to gain practice with test taking. The assessments also provided an opportunity for leaders to get the pulse of the school, looking at the resulting student data to identify strengths and weaknesses. Leaders used this information to plan various leadership tasks, including topics for Breakfast Club and Teacher Leader meetings. The routine also provided formative assessment data that the teachers could then use to improve their instruction.

Table 4.

<table>
<thead>
<tr>
<th>Routine</th>
<th>Language arts intended</th>
<th>Language arts enacted</th>
<th>Math intended</th>
<th>Math enacted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Five Week Assessment Routine</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Teacher Leader(^7)</td>
<td>X</td>
<td>8/13 meetings</td>
<td>X</td>
<td>1/13 meetings</td>
</tr>
<tr>
<td>Breakfast Club</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Content Focused Groups</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

Several of the routines were enacted in math as well as language arts. There were one to two math Teacher Leader sessions per year. The majority of the Teacher Leader sessions were language arts related, and several were subject matter neutral (test preparation, for instance).

\(^7\) Based on observation data and school artifacts.
\(^8\) Data for this column is from 1999-2000. Over time, these numbers varied slightly, but the ratios remained similar.
Additionally, teachers and leaders enacted the Five Week Assessment routine in math as well as reading and writing. However, leaders enacted the math routine differently than the language arts routine. I address this more thoroughly in Chapter 4.

Wider distribution of leadership in language arts

The individuals responsible for enacting leadership tasks in math extended from the administrative staff to four classroom teachers and a math assistant. These four teacher leaders constituted the Math Team. They took charge of instructional decisions in math including pacing, leading professional development sessions, and distributing resources to other math teachers. The math assistant was responsible for copying assessments and supporting special education teachers in the math Five Week Assessment routine.

In language arts, there was a broader array of individuals who carried out leadership tasks associated with these routines. For instance, in 2003, the literacy coordinator, the literacy coordinator’s assistant, the reading coordinator, a middle school coordinator, a primary librarian, and five classroom teachers were all responsible for instructional decisions including selecting materials, observing classrooms, and developing and leading professional development sessions that include Teacher Leader, Breakfast Club, and Literacy Committee meetings. Unlike in math where the principal was rarely involved, the principal was very involved in language arts. While the four Math Team teachers and the math assistant did most of the tasks in the math routines, up to nine teachers and leaders did the work of the language arts routine. See Table 5.
Table 5.

Leadership Network Structure: Math v. Language Arts

<table>
<thead>
<tr>
<th>Math</th>
<th>Language Arts</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Met annually to discuss scores</strong></td>
<td><strong>Met periodically to discuss scores</strong></td>
</tr>
<tr>
<td>Principal</td>
<td>Principal</td>
</tr>
<tr>
<td>2 members of the Math Team</td>
<td>Literacy coordinator</td>
</tr>
<tr>
<td><strong>Ran Professional Development</strong></td>
<td><strong>Ran Professional Development</strong></td>
</tr>
<tr>
<td>Math Team</td>
<td>Principal</td>
</tr>
<tr>
<td></td>
<td>Literacy Coordinator</td>
</tr>
<tr>
<td></td>
<td>Middle School Coordinator</td>
</tr>
<tr>
<td></td>
<td>Librarian</td>
</tr>
<tr>
<td></td>
<td>Five classroom teachers</td>
</tr>
<tr>
<td><strong>Created teaching schedule</strong></td>
<td><strong>Created teaching schedule</strong></td>
</tr>
<tr>
<td>Math Team</td>
<td>Literacy Coordinator</td>
</tr>
<tr>
<td><strong>Attended External Training</strong></td>
<td><strong>Attended External Training</strong></td>
</tr>
<tr>
<td>Math Team</td>
<td>Literacy Coordinator</td>
</tr>
<tr>
<td></td>
<td>Reading Coordinator</td>
</tr>
<tr>
<td></td>
<td>Middle School Coordinator</td>
</tr>
<tr>
<td></td>
<td>Teacher</td>
</tr>
<tr>
<td><strong>Ran copies of the assessments</strong></td>
<td><strong>Ran copies of the assessments</strong></td>
</tr>
<tr>
<td>Math Assistant</td>
<td>Literacy Coordinator’s Assistant</td>
</tr>
<tr>
<td>Math Team members</td>
<td></td>
</tr>
<tr>
<td><strong>Scored assessments</strong></td>
<td><strong>Scored Assessments</strong></td>
</tr>
<tr>
<td>Teachers</td>
<td>Literacy Coordinator</td>
</tr>
<tr>
<td></td>
<td>Literacy Coordinator’s Assistant</td>
</tr>
<tr>
<td></td>
<td>Writing Committee</td>
</tr>
<tr>
<td><strong>Entered math scores</strong></td>
<td><strong>Entered reading and writing scores</strong></td>
</tr>
<tr>
<td>Literacy Coordinator’s Assistant</td>
<td>Literacy Coordinator’s Assistant</td>
</tr>
<tr>
<td>Math Team member</td>
<td></td>
</tr>
</tbody>
</table>

Both the depth of the professional network, as well as the tasks network members were responsible for, varied greatly between language arts and math at Adams from 2000-2003. There were more individuals involved in leadership practice in language arts than in math, the tasks
were more widely distributed in language arts than in math, and there were more enacted
routines in language arts than in math.

More collegiality in language arts than in math

Even though the same teachers taught math and language arts at Adams School, there
was considerably more collegiality in language arts than there was in math from 2000-2003. Judith Warren Little (1982) defines four aspects of practice that indicate characteristics of
schools with high levels of collegiality: frequent talk, teachers observed and critiqued, teachers
design and plan materials together, and teachers teach each other in a variety of ways. Using
three of Little’s categories, I examine how teachers and leaders at Adams talked more about
language arts than math, observed language arts classrooms more frequently than math, and
 taught each other more often in language arts than in math. I then describe how leaders built their
practice differently in order to allow for these differences in collegiality.

At Adams School, teachers talk about reading more than they do about math. Network
survey data from Spring 2001 at Adams\textsuperscript{9} gives a snapshot of the connections that were in place
in language arts. The survey asked teachers and leaders to identify which individuals they seek
out for help in math and reading. The 27 teachers who responded about reading identified 31
different individuals, ten of whom are mentioned by more than one person. While the literacy
leaders often show up on people’s lists (the literacy coordinator is the third highest ranked person
for the K-3 building and the most often sought out person in the 4-8 building), the majority of
connections teachers make to people regarding advice about reading are to other

\textsuperscript{9} While the results of this network survey are only a snapshot of their practice at that moment in
time, and are influenced by self-reporting issues, the overall picture of these results offer insight
to my discussion of the role followers play in language arts.
“followers”—28 out of 43 connections. In all, teachers identify 23 individuals, and several identify their entire grade level, as those they went to for help with reading. While followers may depend on the Literacy Coordinator for advice, they almost all talk to other teachers in the building about reading instruction. Three teachers noted that they do not go to anyone for help with reading.

In math, the distribution looks slightly different. Nineteen teachers responded about math and identified nine individuals who they went to for math help. Of these nine people, teachers sought out the four members of the math team more than half the time. Out of 28 connections, they sought out the math leaders 17 times. Nine did not use anyone for math help. In essence, the followers at Adams seek advice from a broader array of individuals regarding language arts than they do regarding math.

Not only do followers go to a variety of people, including many “followers” for advice about reading, they do so with fair regularity. The average teacher talked to someone about every other day about reading while in math the average teacher spoke to someone once or twice a week about math. See Table 6 below.

Table 6.

<table>
<thead>
<tr>
<th></th>
<th>Times per month teachers talk about math</th>
<th>Times per month teachers talk about reading</th>
</tr>
</thead>
<tbody>
<tr>
<td>K-3 teachers</td>
<td>6.65</td>
<td>15.125</td>
</tr>
<tr>
<td>4-8 teachers</td>
<td>5.5</td>
<td>14.27</td>
</tr>
</tbody>
</table>

The survey results clearly show that the teachers at Adams discuss reading more than twice as often as they discuss math.
In addition to frequent talk, Little (1982) identifies collegial environments to include classroom observations. While not dramatically different at Adams, leaders observed reading and writing instruction more often than math instruction. The main reason for this is that the literacy coordinator, who had no classroom teaching responsibilities of her own and therefore a flexible schedule, spent some of her time observing classrooms. She listed observations as an important part of her job responsibilities,

I’m responsible for observing teachers and then coaching afterwards which would mean individually going back to the lesson, come back with a one-on-one with that teacher’s individual feedback. I’m responsible for walk-throughs and they’re supposed to take place with the team. So I would go in with the reading team or with the principal only, stay in the room probably for about five minutes, rather than the observation which would be like a whole period, and then give some feedback about the atmosphere and what’s going on in the room. If the teachers need me to model something that has to do with language arts in their classrooms, I would do that. The literacy coordinator observes each teacher at least once, does walk-throughs on a weekly basis, and does the modeling on an as needed (and less frequent) basis. (Literacy Coordinator, 2002)

The literacy coordinator did not, however, enact classroom observations or walk-throughs as frequently as intended, but she was able to observe more than the math team was able to do. “I got into about seven rooms this year,” Ms. Kelly shares in her end of the year interview (Literacy Coordinator, 2002). While the math team talked about doing classroom observations as part of their math leadership responsibilities, the logistics of this was made much more difficult because of their individual teaching schedules. When asked if she had had the opportunity to observe a math classroom this year, Ms. Holmes, the sixth grade math teacher and a math team member, replied, “Oh this year? Not since school has started this year but of course last year, yes. Several times,” (Math Leader, 2001).
Clearly, the literacy coordinator had more time and more opportunities to observe teachers than the math team did. More supervision and more monitoring provided teachers and leaders with more opportunities to build collegiality in language arts than in math.

A third element of collegiality Little (1982) identifies is teachers instructing each other in a variety of ways. Teachers at Adams taught each other about reading and writing in a variety of ways while their math teaching was infrequent and took a singular form. The majority of Teacher Leader sessions (the in-house professional development routine) were language arts related. (7 of 13, in the case of school year 1999-2000, for example, as compared with 2 of 13 for math.) Additionally, teachers led many of the Breakfast Club meetings. These meetings were most often focused on language arts. In the four years I studied Adams, I observed nine Breakfast Club meetings. The literacy coordinator was in charge of the meetings, and she either chose the article or tapped someone else to select an article. She also determined who would lead the meeting. Of the nine meetings I observed, one was math and language arts related (economics in fairy tales), two were related to teacher talk, one was on discipline, and the remaining five were focused on language arts related articles. In November 2000, Adams School showcased the Breakfast Club by allowing The Video Journal to videotape the meeting. This particular Breakfast Club meeting focused on using picture books to teach at all grade levels, again highlighting the importance of language arts in this meeting venue. Breakfast Club meetings provided a different teaching context that focused on current research and how it related to classroom practice. Conversely, math Teacher Leader sessions followed the same format: Math Team members would run through a series of problems they brought back from a Math Workshop with Local University.

10 The other four were about test preparation and technology.
Using three of Judith Warren Little’s (1982) measures of collegiality as indicators, teachers at Adams had more collegiality in language arts than they did in math, despite the fact that these were the same teachers. This collegiality may influence, in part, the opportunity and capacity for teachers and leaders to build communities of practice around math and language arts. From 2000-2003, Adams School had more connected networks and higher levels of collegiality in language arts than it did in math. Additionally, the ways in which teachers and leaders at Adams talked about language arts was more sophisticated than their math talk.

More sophisticated language arts-related talk

In environments where the work tasks are unclear and more variable, people need to talk to each other to discuss the uncertainty and make sense of their work. Leaders and teachers at Adams participated more often and in more sophisticated ways in language arts meetings than they did in math meetings. This difference in participation had a direct impact on the different communities of practice that were built around math and language arts.

At Adams, formal leaders (principal, literacy coordinator) attended all of the language arts meetings, but rarely attended math meetings (less than 40% of the time) and spoke little if at all when they did attend. For this reason, I compare the talk of these formal leaders in the case of language arts with the talk of the four math teacher leaders in the case of math. Leaders participated differently in language arts meetings than they did in math meetings. In language arts, leaders talked broadly about goals and strategies, while in mathematics they were more focused on the day-to-day practice issues and the distribution of resources. These differences in speech not only framed different communities of practice, but they also tracked along control and commitment lines. In math, leaders talked about what they do in the classroom and how to
distribute resources. In language arts, the talk was less simplistic and linear—the teachers
discussed what they do but they also discussed strategies and vision.

In the subset of meetings analyzed, the most frequent speech patterns of formal leaders in
literacy meetings at Adams were presenting broad vision, offering strategies in response to
teachers’ self-identified needs, offering expertise and resources, and encouraging collaboration.
Most often formal leaders provided a broader vision to tie ideas together. For example, at the end
of a Breakfast Club meeting, the principal closed the meeting with the following statement,

I would like to say that when I taught, we always started out with a picture book and that
always motivated them. I saw the connection right here—our strategy is to make
connections: text-to-text, text to self, text to world. I also saw that we could use the
verbal connections. We’ve been talking for many years about connecting the subjects. So
we’ve been focusing on those readers that are struggling. Many of the middle school
students are reluctant to read the harder novels, and we often turn them off on reading.
(Principal, 2000)

She took the opportunity to tie the faculty’s discussion of picture books with the school’s
work on making connections between subject areas, as well as having the students make
connections in their own reading. In a subsequent interview, she described how she sees her role
in these Breakfast Club meetings, “I think that my role is not as a leader in those meetings…I
generally try to interject or in some cases clarify or talk about ways in which there may be some
school-wide things that might support certain kinds of things,” (Principal, 2001).

While needs were often identified by people other than the formal leadership, formal
leaders dominated the floor when it came to offering strategies for change. Consider two
examples from a literacy committee meeting.

• I have a packet with lessons on teaching vocabulary—I’ll pass it around and if you want
me to make you a copy, put your name on the green sticky note. (Literacy Coordinator,
2000)
• Teacher modeling is important—only after the teacher models, then we move to the next phase, guided practice, scaffolding… Don’t just jump to the strategy. The framework is still: model, guided practice, independent then strategy. (Principal, 2000)

The formal leaders did a lot of coordinating the talk at meetings, selecting who talks when, and determining how the meetings flow. Finally, they often offered their expertise (see above quote about how the principal used picture books in her own classroom), discussed resources,

• Those of you who have the book, go to page 265, the appendix section. It is a cheat sheet, so to speak, for making connections. I’m not saying that this has to be it, but it gives a starting point if you just want an overview to use for the future. Appendix F, you’ll see it connects to the other sections… (Principal, 2000)

• One of the concerns that we had was not enough short stories. I asked Mrs. Literacy Assistant to pull the Harcourt text booklets. (Literacy Coordinator, 2000)

and encouraged collaboration,

Take ten minutes right now, as a grade level, and think about what you’re going to do. The problem is, we don’t expose them (the students) to enough non-fiction. It’s boring so they don’t get through it. We need to expose them to other genres. How will you make connections across content areas? How are we going to deal with reading across content areas? Begin to think about strategies. You will report back to the group in ten minutes. (Principal, 2000)\footnote{While I use excerpts from only two meetings, these are representative of the broader array of positional leader rhetoric in literacy meetings. I could sample from numerous meetings to show similar leadership behavior.}

In contrast, formal leaders were rarely present at math meetings. Instead, math teacher leaders led math meetings. Four types of speech dominated their talk at these meetings:

monitoring the improvement effort, resources, what they do in their classrooms, and inviting others to speak. In the next excerpt, one of the math leaders explains to the math teachers:

What that is, we know that third, sixth, and eighth grade are our targeting grades for the Iowa (ITBS). Third, fifth, and eight are targeted for the ISAT. We are not going to wait
until our students get into third, fifth, sixth, eighth grade to prepare them for the Iowa and the ISAT. We want to start at kindergarten and we want it to be a progression through eighth grade. (Math Leader, 2003)

Another math leader, (Ms. Sunny, a third grade teacher) explains what she does in her classroom by sharing a resource:

I’ve been reading some literature books (holds up a picture book by Marilyn Burns). I’ve been reading The Greedy Triangle. It’s about a triangle who’s not really happy about himself…he wants one more side… It builds up to 13 sides and one kid noticed that it started looking like a circle. (Math Leader, 2001)

In the next excerpt, one of the math leaders (Ms. Brown) invites others to contribute to the meeting, and a teacher asks a clarifying question, which the other math leader (Ms. Sunny) further clarifies by getting a reflector out and showing the group how it works.

Ms. Brown: Any questions, comments, suggestions?  
Teacher: What’s a reflector?  
Ms. Sunny gets one out and shows how it works.  
Later in the meeting Ms. Brown again extends the same invitation, stating, “Questions, comments, suggestions? We love suggestions,” (2001).

Teacher leaders in language arts, as in math, talked about what they do. In addition, they offered strategies, identified needs, offered broader vision comments, and discussed professional development ideas. Teachers who did not take leadership roles in these meetings primarily shared their practice in language arts while they asked clarifying questions in math. These followers talk 39% of the time in literacy meetings while they only talk 27% of the time in math meetings. They say what they do 53% of the time in language arts while they ask clarifying questions nearly 100% of the time in math. This distinction is telling: in language arts teachers feel confident about sharing their practice with their peers, while in math they ask for clarity about the professional development session. This is an interesting difference in light of a perception in the school that reading is harder to teach than math.
One explanation for this may be a difference in teacher expertise or perceived expertise. Teachers at Adams felt more confident in language arts than math. But the high frequency with which they discuss reading is important. Clearly the culture of talk about language arts that does not have an equivalent parallel in math at Adams. This difference in tone shapes the communities of practice that form around these different subject matter areas.

The discrepancies in speech on the part of the teacher leaders reveal differences in the communities of practice formed around math and language arts. The math community of practice in Adams from 2000-2003 can be characterized as having few active individuals, infrequent communication, and surface level connections. A few math leaders instructed teachers how to teach math, and the “followers” were primarily silent. The community of practice in language arts, by comparison, had more active voices, more diversity of focus, and went more deeply into issues of classroom practice and strategies for instruction. In language arts, teacher leaders were pushing the discussion to a higher level, characterized by their participation in meetings, while in math the teacher leaders were mainly carrying out a lower level of activity: distributing resources and clarifying information for the other teachers.

Another striking difference is that the language arts meetings tended to involve more creative rhetoric from a more diverse population, while the participation in math meetings tended to be very limited—both in speakers and in scope. In addition, a further notable difference between math and language arts is the discrepancy in the actions of formal leaders regarding meetings in each subject area. In math meetings formal leaders rarely attended and spoke only rarely while in language arts meetings, they not only attended frequently, but they opened and closed most meetings and they offered big picture ideas to tie the discussions together. This involvement influences the ways in which communities are formed. Leadership support is
critical for teacher buy-in, and when leaders actively participate, teachers follow their lead. The lack of involvement on the leaders’ part in math was mirrored by the infrequent and weak participation of math teachers in the community of practice.

**Structures to support collegiality**

Leaders at Adams built structures that supported frequent talk, classroom observations, and variable teaching opportunities in language arts. Essentially, school leaders created more time for language arts meetings. By assigning a literacy coordinator, and not a math coordinator, the principal made the decision to support certain kinds of activity in language arts (like classroom observations) while not doing the same for math.

School leaders at Adams consistently created more meeting time for language arts activities than they did for math activities. I show this in two ways—the meetings the leaders planned for the year (see Appendix B for professional development topic chart) and the meetings that I observed (see Table 7).

Table 7.

*Meeting Types and Frequency*\(^12\) (Year 01—04; 48 meetings total)

<table>
<thead>
<tr>
<th>Meeting Type</th>
<th>Frequency Language Arts</th>
<th>Frequency Math</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breakfast Club Meeting</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>All-faculty Meeting</td>
<td>7</td>
<td>2(^13)</td>
</tr>
<tr>
<td>Literacy Committee Meeting/ Math Team Meeting</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Grade Level Meeting</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Professional Development Meeting</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>School Improvement Planning Meeting</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Other Meetings</td>
<td>15 (non-language arts, non-math)</td>
<td></td>
</tr>
</tbody>
</table>

\(^12\) Based on meetings observations between the fall of 1999 and the spring of 2003.

\(^13\) Math is one topic, of several, at these meetings.
This is another striking difference in how leadership practice was enacted in math and language arts at Adams. Interestingly enough, the time that leaders created for language arts work, as represented in the meeting data, is not only illustrated by the number of meetings they scheduled, but also by the meetings that they attended. School administrators at Adams attended more language arts meetings, and spoke more often at language arts meetings, than they did at math meetings.

The focus of general meetings was most often language arts. Language arts meetings dominated all-faculty meetings 7 to 2 (Table 7), I found no evidence of math discussion at any grade level meetings I attended, and the teachers and administrators that ran professional development meetings predominantly focused their agendas on language arts issues. Sometimes faculty meetings included several subject matter domains at once. An analysis of these “general” meetings shows again the leaders’ choice to focus primarily on language arts issues. For instance, at “kick-off-the-year” meetings, the principal shared the test scores in reading, writing, and math each year. Every year the literacy coordinator shared district reading initiatives and/or the school’s literacy plan for the year. One year, there was a separate math meeting for math teachers only, so the math leaders did not share at the all-faculty meeting. The next year, a math team member presented at this all-faculty back-to-school meeting. However, rather than present the plan for math, as the literacy coordinator had done for language arts, the math leader played Math Bingo with the teachers. Her presentation was shorter than the literacy coordinator’s, and she did not contextualize the activity. In meetings where both math and language arts were discussed, leaders spent almost twice as much time on language arts related topics as they did on math topics.
In commitment organizations, teachers view their work as non-routine, having high variability and high uncertainty. They collaborate with other teachers, seek out opportunities to work together, ask for advice, and participate in decision making. At Adams from 2000-2003, this is how much of the leadership practice in language arts was organized. Teachers were involved in enacting language arts routines, they led and planned professional development sessions, they spoke about ideas, strategies, and broad vision in language arts. Conversely, math leadership practice at Adams had more elements of a control organization, as will be discussed in the next section.

Control: Math leadership practice

At Adams from 2000-2003, the math leadership practice, by design, can be characterized as largely one of a control organization. While the behavior controls in math at Adams are inconsistent and in some cases non-existent, input and output controls characterize the math leadership practice at Adams.

Input controls

In the late 1990’s, the school’s adoption of a new textbook series was thought to be the way to improve test scores in math. From 2000-2003, math teachers depended largely on these textbooks to guide the content and pacing of their instruction. In the majority of the math classes I observed, the students were working on activities related to their textbook. Additionally, teachers identified textbooks as the most influential tool whereas in reading they stated that their most influential tool was the Chicago Curriculum Framework. In 2001, when math test scores went down again after a temporary improvement throughout the late 1990’s, leaders made two changes: they created a pacing guide and they added problem solving to the Five Week
Assessment routine for math. In response to this decline in scores, math leaders gave teachers two internally designed tools to use to improve student performance in math. The first was an item analysis of all the questions on the high stakes standardized test (the ITBS), organized by grade level. The second item, created by the math team, was a fast paced teaching/assessment schedule, based strictly on the textbook, for the teachers to follow. One math leader gave the following instruction to the math teachers in the fall of 2001, “Ms. Richards gave you that Iowa test (item analysis) thing. Please use that 9 to 5. Please use that; it will make all the difference in the world in your kids test results for the math,” (Math Leader, 2001). She later explains to the math teachers how the math team created the pacing guide and how it works,

Ms. Jones: We looked at how many days it took, it took us a long time to set this up. This wasn’t something we just sat down and threw this together. Ms. Brown, Ms. Sunny and I spent a long time on this. And we looked at it by the number of days. On the syllabus everything you teach it shows the number of days, we counted those days. Every one of your books shows the number of days it takes to teach a unit. And that’s how we came up with those, even when the cumulative comes together. So, we counted those days and there’s a certain thing, we even allotted you a few days extra. So it’s not like if it’s 40 days we allotted you 40 days to teach the lesson. No, we didn’t do that. No, no, no we didn’t do that. We allotted certain days because we know that, like Ms. Brown said, some of the kids, you can’t cram all those days in like that. So we made allotments for that and we said that will fit into here. And you may have five or six days over the time it’s actually supposed to take (to teach the chapters), if you go back and look at the dates for those chapters because this (assessment cycle) is every five weeks. Ok, so in five weeks, some of you only have three chapters to teach. Teacher interrupts: Five or six days for each chapter?
Ms. Jones: No, five or six days over the allotment for each section that is actually on here. There’re holidays, we took a lot of things into consideration when we set this schedule up. (Math Leader, 2001)

The math team (which consisted of four classroom teachers) intended to monitor the school’s math progress with frequent assessments. However, after the first month of school, observation data show no evidence that math leaders followed up on instruction or these frequent assessments, perhaps due to the demand of their own teaching schedules. Teachers were
essentially left alone to teach according to the pacing guide. Through these actions, the math leaders depended on these two input controls (the pacing guide and the item-analysis)—which directly connect to the textbook and the standardized tests—to support teachers’ math instruction.

In contrast, the leaders’ response to falling test scores in reading and writing was more collaborative. In 2003, the principal pulled three teachers out of the classroom to act as reading coordinators. These literacy leaders—in addition to the principal—convened frequent meetings where faculty discussed teaching strategies based on a variety of books and tools. In fact, grades K-3 were the only grades that consistently used a textbook series at all—and even so, the teachers did not all use the same textbook series. Teachers in grades 4-8 used a variety of teaching tools other than textbooks, including trade books (chapter books), grammar books, story anthologies, and a variety of old textbooks, sample textbooks, and other resources—many of which were located in the literacy coordinator’s office. While school leaders depended on the pacing guide to control instruction in mathematics, they created opportunities for teachers and leaders to collaborate and used a wider variety of tools in order to improve instruction and student performance in reading and writing.

Behavior controls

According to the organizational frame that Rowan presents (1990), control organizations have behavior controls. These include in-service training to show teachers what “effective” teaching practices are and increased evaluation of teachers that is both frequent and tied to their professional development. Math leaders at Adams ran professional development sessions, during Teacher Leader institute days, in which they showed teachers how to teach specific skills or
concepts. Each of these professional development sessions was based on materials from an external workshop that these math teacher leaders had previously attended. These sessions, generally two per year, represent the extent of the professional development in math, with the exception of a meeting at the beginning of one school year (August 2003) in which math leaders explained the pacing guide, item analysis from the ITBS, and the new problem solving component of the Five Week Assessment routine. As discussed earlier, the math lead teachers depended heavily on their own practice in the professional development sessions where they specifically explained how to teach certain concepts or mathematical ideas (geometry, for example).

Neither the math leaders at Adams nor the administrative leaders (principal, assistant principals) observed math teachers frequently. This control component was missing from math leadership practice at Adams. Given the constraints that arose due to their classroom teaching responsibilities, observing classrooms was logistically problematic for the math leaders. Without consistent and frequent behavior controls, the leadership practice in math did not exactly follow the control model. This, however, is consistent with Rowan’s findings that these designs are only partially implemented in schools.

### Output controls

Tests serve as an output control in a bureaucratic organization. At Adams, two forms of tests acted as control elements for the school: the district mandated high stakes testing and school-wide assessments for students every five weeks. In mathematics, the input controls teachers used were directly connected to these output controls. The textbook drove the content for the school-wide assessments—in most cases math leaders took the five-week assessments
directly from the math textbook. Leaders created the item analysis to act as a road map for classroom instruction that connected to the content of the high stakes testing. Leaders created these input-output pairings to control the content that the mathematics teachers taught. The pacing guide was designed by the math team to connect with textbook lessons; this guide determined classroom instruction as well as what was tested in the Five Week Assessment routine. At the same time, math leaders expected teachers to use the item analysis of the standardized test as a guide to prepare students for exactly what they would encounter on the high stakes tests in the spring.

While the input-output controls were closely linked in math, the lack of support by leaders was such that in practice, these Five Week Assessments did not serve as very effective output controls. Teachers graded their own assessments and the leaders’ failure to consistently compile, analyze, and disseminate scores and patterns in math indicate an incompletely implemented control organization. In language arts, on the other hand, the literacy coordinator and her assistant scored the Five Week Assessments, analyzed these data, and shared results with teachers—although inconsistently. Therefore in practice the Five Week Assessment routine served as a better control in language arts than it did in math.

Leaders designed some control elements in language arts as well as mathematics at Adams; they created similar input and output controls. However, the ways in which leaders and teachers used those controls varied. In August, leaders gave teachers an item analysis for the math test and the reading test, and leaders expected teachers to give their students five-week assessments in math, reading, and writing. However, classroom instruction in language arts extended beyond the local assessments, while the instruction in math was tied exclusively to the pacing guide the math team built around the math textbook. In language arts, teachers taught a
wide range of content, some of which was tested on the five-week assessments and some of which was not. The five week schedule in language arts included\(^{14}\). Graphic organizers for story grammar and making connections; narrative, expository, and persuasive writing; practice ISAT and Iowa tests. Additionally, in 2001-2002 leaders covered the following language arts topics in Teacher Leader and Breakfast Club meetings:\(^{15}\) literacy through the content areas, using picture books to teach, reading comprehension strategies, literacy fair, literacy testing issues, economics in fairy tales, test preparation in reading workshop, and how to use the new primary library system. So while the input-output pairings were clear and linear in math, reading was not linear, the language arts leaders presented opportunities to discuss a wider variety of issues, and therefore the input-output pairing was less clear and less structured.

How test results reflect control and commitment differences

According to Rowan, when control organizations use controls that narrowly focus on basic skills (the way the ITBS does), basic skills are improved but problem solving is not (Rowan, 1990). We would expect, then, a control organization that uses narrow output controls to have improved skills but not show improvement on problem solving or higher level thinking problems.

In the time I studied Adams, the math leaders introduced new input control measures (a pacing guide and a problem solving component of the five week assessment routine), and they explicitly designed them to link with the existing output measures (ITBS, ISAT, and the five week assessments). These elements, as designed, made math practice at Adams more like a

\(^{14}\) Based on 2000-2002 data.
\(^{15}\) Based on 2000-2001 data.
control organization. While these input-output control measures were weakly implemented, and there were no formal behavior controls in place, the test scores in math reflect outcomes consistent with control organizations that focus on narrowly defined output measures.

A break down of 2005 math scores shows that the students were actually performing well on skills, while they struggled with the problem solving components of the test. (See Figure 2) While only 19% of students were at or above norms in concepts and estimation, and 23.1% of students were at or above norms in problem solving and data interpretation, 40.1% of the students were at or above norms in computation. This is consistent with a control organization. The teachers and leaders at Adams believed that math was straightforward. Thus the teaching and leadership practice reflected these beliefs. Had teachers and leaders believed that math instruction was complex, as problem solving in math is, then their approach to math might have been different, and the students’ test performance on the higher level thinking sections might also have been different.
Figure 2. ITBS math score breakdown: Concepts, problem solving, skills (2005)

At the time of my study, students at Adams were taking two standardized tests: the ITBS and the ISAT. The ITBS was the high stakes test (promotion depended on performance on this test), and the district was in the process of phasing in the ISAT to eventually replace the ITBS. By 2005 the ISAT became the high stakes test in the district and the ITBS was no longer given. The overarching difference between the two tests is that the Iowa is more skills-based and the Illinois has more higher-level thinking problems which historically have proven more difficult for students at Adams.

In math, the “ITBS is oriented toward measuring students’ basic mathematics skills and has a much heavier emphasis on computation than the ISAT,” (Easton et al., 2003). While it is hard to compare exact numbers, the report claims that “it is clear that the ITBS is much more
heavily weighted toward computation, and that the ISAT contains up to three times as many items on algebra, geometry, measurement, and probability and statistics,” (Easton et al., 2003).

As the district puts more pressure on the ISAT, Adams will have to respond through their math practice. In the fall of 2001 we see the beginnings of this shift. At that time, school leaders were responding to falling test scores. At this same time, the district had begun to shift its emphasis from the skills-based ITBS to the higher-order thinking test (ISAT). Traditionally, the students at Adams had not performed well on the math problem solving section of the ISAT. In response, the Math Team added a problem-solving component to the five-week assessment program. As designed, all students in grades 3-8 would solve a problem-solving problem every five weeks. The Math Team planned to collect the assessments, collaboratively score them, and return feedback to teachers and students. Despite their intended shift in practice, the Math Team did not follow through on this plan. They did not collect the problem solving problems, and the math teachers I interviewed could not find the folder of problems to share them with me, indicating a lack of follow through on their part as well. While the Math Team designed a collaborative approach in response to this added task variety and uncertainty, their practice did not change. The potential for mathematics instruction to move toward a commitment model, in response to a shift in the technology of teaching (from straightforward to non-routine), was not to be. Instead, the math practice remained focused on coverage of the textbook with a heavy focus on skills. This may be one factor that accounts for some of the low scores on the mathematics component of the ISAT, scores that get progressively worse as the students get older. See Figure 3.
During the time of my study, student performance on standardized tests at Adams may be discouraging, particularly in reading (see Figure 4). However, a comparison of the students at Adams with other students in the same racial categories within the district and the state shows that they are not, in fact, performing as poorly as the national comparison indicates. (See Figure 5.) In fact, in writing, Adam’s students are outperforming the rest of the African-American students in the district and the state, and they are very close to African-American students across the district and the state in reading and math.
Figure 4. ISAT scores: Reading, writing, mathematics (2004-05)
Figure 5. Racial comparisons of ISAT data (Adams as compared with the district and state for students with a similar racial profile).

An analysis of the differences between the Five Week Assessment routine in math and language arts will shed more light on the control and commitment organizational elements at Adams. (See Chapter 4.)

Test scores are one way of determining success, and for a school in a high stakes testing environment, test scores matter. However, there are other ways in which the teachers and leaders measure success in their school. In the late 1980’s, Adams was a school divided—teachers in the two buildings had little to no interaction, nor did they have much connection with teachers in their own building. Status quo at Adams was for teachers to shut their door and do their own thing. The principal, Dr. Williams, opened up practice, got her teachers to talk to each other, and overall built a community of engagement and sharing. While this community changes over time,
and is different in math and language arts as I have shown, overall the climate at Adams changed to one that teachers are proud to be a part of. Interview and observation data show that teachers and administrators like to work at Adams, they respect their colleagues, and they are proud of their school.

This pride and respect can be seen when the principal welcomes them back to a new year and they all clap and applaud: “And let me just say welcome back to a new school year 2001-2002. It is good to see all of you and to see all of you looking well and healthy. Let me say this to, that this is going to be a wonderful school year.” Teachers all begin applauding and clapping. (Principal, 2001)

The closeness of the staff is reflected in this teacher sharing her experience, at a Breakfast Club meeting, with a visitor from another school:

Teacher: I think one thing here that works with us, really we’re like one great big family and we do respect one another and we can also laugh with each other as well as cry with each other so…
Leader: And we don’t really want get here at 8:15 (for these early meetings) either but you know…
Teacher: …there’s a respect there. We also respect that um…
Leader: ___with the breakfast and…
Teacher: …with respect to each other’s opinion. I mean we even ask each other to just, to solve a problem. We know how to go to one another and say, ‘look, can you help me with this?’ or ‘do you have information on this?’ So I think that’s one thing that has us so successful here is the respect that we have for one another. Then, like they say, if they say we have to meet we tell them we have to do it so we work around whatever we have to do and be there. (Teacher, 2002)

This positive environment can also be seen in the birthday celebrations they hold for one another and in the informal conversations they have about each other’s families, health issues, and weekend plans. An atmosphere of caring and support pervades the school. So while the test scores dropped over the time I studied Adams, and this is acknowledged by the people who work in the school, they would not say that their school is a “failing” school, particularly as compared
with where they have come from in the most recent decade and in light of the challenges they faced.¹⁶

Discussion

Brian Rowan’s work using contingency theory points toward different ways in which teachers conceptualize their work. In this paper I argue that teachers and leaders have different conceptions of teaching and leadership based on subject matter. At Adams Elementary School, from 2000-2003, math and language arts are core to leadership for instruction. Teachers and leaders think that teaching mathematics is easier than teaching reading and writing. These different conceptions may be one element that leads to differences in leadership practice, as well as the development of different communities of practice in mathematics and language arts.

From 2000-2003 at Adams elementary school, leadership practice in language arts followed more of a commitment model than math. See Figure 6.

¹⁶ Between 2001 and 2003 Adams had two principals and three literacy coordinators. During that time they also had an influx of students from the closed down housing projects entered Adams School with severe learning and emotional needs.
CONTROL

<table>
<thead>
<tr>
<th>Input Control</th>
<th>Math designed</th>
<th>Math enacted</th>
<th>Language Arts Designed</th>
<th>Language Arts Enacted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Behavior Control</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Output Control</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

COMMITMENT

<table>
<thead>
<tr>
<th>Frequency of talk</th>
<th>Fragmented networks — very little talk</th>
<th>Connected networks — frequent talk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teachers teaching teachers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quality of talk</td>
<td>Clarifying questions</td>
<td>Goals, strategies, big picture</td>
</tr>
</tbody>
</table>

**Figure 6. Elements of control and commitment elements.**

For teachers and leaders, the network structures around language arts were more connected, with a wider array of routines enacted by a broader pool of individuals. There was also more collegiality in language arts than there was in math. The leaders structured more opportunities for teachers—and leaders—to talk about language arts, they observed classrooms on a more frequent basis, and teachers taught each other about reading and writing in a wider variety of ways than they did math. While there is evidence that there was more collegiality in language arts at that time than there was in math, I would argue that it was not sophisticated enough to have an impact on student learning or test scores in reading. Reading scores at Adams improved dramatically in the four years prior to my study (1996-2000). These four years represent the final years of a strong language arts team (Dr. Williams and Ms. Tracy) who, over 12 years, enacted a
structure of integrated language arts routines. The transition in leadership, and the influx of many new—and high-needs—students into the school more than likely disrupted existing student learning. These factors likely explain some of the fall in test scores. These data indicate the importance of a strong leader to support—through actions and resources—the routines that build this collegiality.

The language arts community of practice functioned at a higher level than the math community of practice from 2000-2003. Effective communities of practice collaborate around common goals, share their practice, collectively reflect about practice and outcomes (Wenger, 1998; Steigler & Hiebert, 1999; Westheimer, 1999). When teachers at Adams talked about language arts they talked about their classroom practice, but they also talked about strategies for improvement, goals they had, and a broader vision for the teaching. Conversely, in math, teachers—even teacher leaders—talked primarily about what they did in their classroom and how to distribute resources. They did not discuss the broad vision of math for the school, nor did they come up with many strategies for improvement. Some might argue that the explanation for these differences may be a difference in teacher expertise. I argue that it may have more to do with perceived expertise. Teachers at Adams felt more confident in language arts than math, even though leaders identified reading scores as harder to improve than math scores. The high frequency with which teachers discuss reading is something to consider. If they were completely confident in their reading instruction, why did they seek out help so much more frequently than they did in math? (See Table 6.) Is it just that the culture of talk that exists around language arts does not exist in math at Adams? In future work I would like to further explore if teachers and leaders do indeed know more about reading and writing, or if they just think they do.
One notable difference between the commitment and control models is that in the case of Adams from 2000-2003, the commitment model used more resources. During that time, leaders clearly prioritized language arts over math in terms of resource allocation. They carved out more meeting time for language arts, they had more non-classroom personnel to carry out leadership tasks in language arts, and they had more material resources in language arts. Additionally, administrators at Adams spent more of their own time on language arts related leadership tasks than they did math related leadership tasks.

If the leadership had behavior controls in place for math, it would have been more resource intensive. Clearly, in order to control the behavior around instruction, through frequent classroom observations and clearer tracking of the formative assessment routine, leaders would have allocated more resources to math. But because the leadership practice around math was an incompletely executed control design, and because the language arts organization was more in line with a commitment model, which requires extensive resources to propagate the building of community, the end result at Adams School from 2000-2003 was that leadership practice in language arts was better supported than the math leadership practice.

As the expectation of student learning in math and reading gets more complex, which the shift to the ISAT indicates, the teachers at Adams will require more support because their work will get less and less straightforward, particularly in math. If Rowan’s commitment theory is right, teachers and leaders will reach out more and more to each other, as they try to make sense of the shift in teaching that must occur in order for their students to understand the higher-level

\[17\] A shift from ITBS to ISAT creates more cognitive demand on students. In reading, the stated goals of the tests are slightly different. The ITBS reading comprehension test measures skills important in reading comprehension while the ISAT reading comprehension passages measure “reading to gain information and reading for literacy experience,” (Consortium report, p. 4).
work they will be increasingly asked to do. The control model in math should shift to a commitment model, in order to support this non-routine teaching.

In response to No Child Left Behind and the standards movement, states and districts are in the process of defining input and output measures. Successful school leaders will incorporate these into their instructional practice. However, teaching math, reading, and writing is not straightforward work. The increased collegiality in language arts at Adams created a professional learning environment of which the teachers were proud. Leaders—both at the district and the school level—need to create space for teachers and leaders to explore the uncertainty and variety that comes with the responsibility of teaching high-risk, urban students to read, write, do math, think critically, and problem solve. For these reasons, I posit that successful leadership practice will have a balance of control and commitment elements.

The first step in math has to be a shift in teacher and leader thinking about the technical core of mathematics instruction. High-stakes standardized tests that demand higher level math thinking from students may be the tool that pushes teachers and school leaders—at Adams and elsewhere—to begin to see math as the complex domain that it is. This change in perception will also hopefully change leadership practice in math. I believe that if math leaders built more time for teachers to talk about math, challenged math teachers to think about math in more complex ways, and held teachers and students accountable for the five week assessments, including the problem solving component, math scores at Adams would improve.

While math and literacy have epistemological differences, there are some things we can learn from the leadership practice in literacy at Adams to support better leadership practice in math. And as we continue to better understand differences in school leadership practice, as they
relate to subject matter, policy makers and central offices can better support elementary leadership practice.
CHAPTER THREE

CONSISTENCY AND CHANGE AS COMPLEMENTARY PROCESSES IN LEADERSHIP PRACTICE: THE ROLE OF ROUTINES

Introduction

Much of the work of organizations takes place in the routines that people within the organization build and enact. Some people believe that routines are responsible for stagnation in organizations, viewing the inertia of routines as a barrier to change (Hannan & Freeman, 1984). In some cases, this is true; changing routines is hard. Other scholars question this view of routines and argue that routines can act simultaneously as a source of stability within organizations as well as serve as a source of change (Feldman & Pentland, 2003). In this chapter I examine school leadership practice through an in-depth case study of one language arts routine at an urban public elementary school. I argue that a routine both provides consistency of instructional practice within an organization and simultaneously enables change in leadership practice and teacher practice around classroom instruction. I show how this particular routine changed over time while also acting as a stabilizer for the school and the leadership practice. In developing this argument, I draw on Martha Feldman (2000) and Feldman and Brian Pentland’s work (2003) on organizational routines, analyzing different elements of the routine in both its ideal state as well as in its practiced state.

Because the work of organizations happens in the routines, routines manage the ways in which an organization evolves. In this chapter I study the evolution, over time, of leadership practice for instruction at one school as seen through the lens of the Five Week Assessment routine in language arts. At Adams School, the principal built, sold, and enacted her vision
through a series of interconnected routines. Her leadership practice was influenced by the context within which it took place. Initially, the Five Week Routine was new and created a disruption to the standard operating procedures at the school. As teachers got accustomed to the tasks of the new routine, it became a stabilizing factor in the language arts practice of both teachers and leaders. Over time it became an integral part of the organization, stabilizing the transition of new leaders and protecting leaders to do sensitive work. While the routine did stabilize the organization through the transition of leaders, it simultaneously provided an opportunity for change. In this paper I examine the ways in which the ideal and practiced aspects of the routine changed over the time I studied Adams School. Finally, I discuss ways in which these changes help us to better understand leadership practice and organizational change.

**Theoretical framework**

In order to study the activity of leadership, I chose to focus this analysis on routines. I use theoretical constructs from organizational change literature to frame my study of an organizational routine. I also consider the tools leaders use as they construct and enact the routine.

**Routines**

Routines are an important part of the work that organizations do (Feldman, 2000; Feldman & Pentland, 2003; March, 1981; March & Simon, 1958). By routine I mean “a repetitive, recognizable pattern of interdependent actions, involving multiple actors,” (Feldman & Pentland, 2003, p.311). While some theorists believe that routines have inertia which inhibits growth and change (Hannan & Freeman, 1984) others believe that routines are actually a source of flexibility and change (Feldman & Pentland, 2003). James March highlights the need to look
at both stability and change in an organization: "Changes in organizations depend on a few stable processes. Theories of change emphasize either the stability of the processes or the changes they produce, but a serious understanding of organizations requires attention to both," (March, 1981, p. 563). Routines have elements of both agency and structure (Bourdieu, 1977, 1990; Giddens, 1984). Much of the work of schools, like any other organization, happens in multiple routines. The enacted routine is based in part on each person’s individual power and agency within the routine, as well as other factors such as the perceived structure of the routine.

The idea of agency is critical here. Agency, in this case, is the actual performance of the routine by specific people, in specific times, in specific places (Feldman & Pentland, 2003). People create and enact routines. And while routines help to frame and sustain practice, the people who function within the routine do so with the possibility of individual choice. They chose to carry out the aspects of the routine in the ways in which they see fit, based on their own goals, expertise, capacity, as well as their perception of the organization’s goals. Additionally, people carry out routines based on the interactions they have with other people in the organization, the tools that they use, and the context in which their practice lives. Routines do not simply happen automatically; they are driven and sustained by the everyday actions and interactions of people.

Feldman and Pentland view routines as having both ostensive and performative aspects, based on Latour’s analysis of power (Latour, 1986). Latour believes that power exists both in principle and in practice. The power in principle is the ostensive aspect; the power in practice is the performative aspect. With routines, the ostensive aspect is the idea of the routine—“the ideal or schematic form of a routine. It is the abstract, generalized idea of the routine… the performative aspect of the routine consists of specific actions, by specific people, in specific
places and times. It is the routine in practice,” (Feldman & Pentland, 2003, p. 101). The
ostensive aspect acts as a script for the routine. The performative aspect is more explicit as it
characterizes the routine in practice. Feldman and Pentland believe that the interplay of the
ostensive and performative aspects is important to how the routine changes practice. In my
examination of how routines change over time, I focus on two aspects of the routine—the
ostensive aspect, the routine in its ideal, and the performative aspect, the routine in practice.

Tools

In order to carry out the activities of their work, leaders depend on a variety of tools.
Tools are a critically important element of leadership practice. The study of tools and their use
has increasingly come to the fore, as more scholars examine the importance of tools in leadership
practice (Halverson, 2003, Halverson, Zoltners, Brown, 2001; Spillane, Halverson, Diamond,
2001, 2004). Many social theorists believe that learning takes place in the social interaction
between people and tools in the context of their environment (Hutchins, 1991, 1995a, 1995b;
Brown, Collins & Duguid, 1989). Anthropologists remind us that the tools of a culture embody
its cultural beliefs. The construct of cultural tools is, therefore, given many definitions. For the
purpose of this work, I borrow from Cole and Norman's constructs of artifact when I refer to the
tool component of leadership practice. Cole prefers the more generic term artifact to the term
"tool" that was used by the Russian socio-culturalists. He describes artifacts as fundamental
constituents of culture and sees them as being both material and ideal. He sees artifacts as
existing only in terms of something else--the context of the situation or activity, (Cole, 1996).
Cole’s notion aligns with the idea that leadership practice happens in the interaction, for instance,
between the tools and the leaders. The tool does not stand alone, but lives in the interaction
between the person using the tool and the context that surrounds that interaction. In this study, I vary slightly from Cole in that I focus primarily on tools that are material rather than ideal. Artifacts are externalized representations of ideas and intentions used by practitioners in their practice (Norman, 1988).

I use Feldman and Pentland’s frame to study how an organizational routine formed and reformed through leadership practice. In doing so, I analyze the people within the organization that take on leadership roles, the tools that they use to do their work, and the activities in which they participate.

Methodology

Organizational context

This work is part of an in-depth study of leadership practice at one elementary school. Adams School is located on the south side of Chicago. At the time of my study, Adams housed between 900-1200 African American students with a high mobility rate (35%) and a very high poverty rate (97% qualify for free or reduced lunch). The students were housed in two adjacent buildings—K-3 in the South building and grades 4-8 in the North building. Because of declining standardized test scores in the late 1980’s, this school and its students were very much at risk. Urban schools serve as an important focus for the study of instructional leadership because of the challenges they face: high poverty rates, high mobility rates, and high teacher turnover rates. The public, and some scholars, share a certain skepticism about the appropriateness of intellectually rigorous curricula for poor students (Anyon, 1981; Spillane & Jennings, 1997). In light of this, leaders in urban schools in high poverty neighborhoods face a heightened challenge in instituting instructional change.
My work is embedded in a larger research project: The Distributed Leadership Study (DLS), a 5-year longitudinal study of elementary school leadership funded by the National Science Foundation and the Spencer Foundation. The research team conducted the 6-month pilot phase during the winter and spring of 1999. The first full year of data collection commenced in September 1999 and involved eight Chicago elementary schools as intensive case sites (an additional five schools served as interview only sites). For this study, I engaged in an intensive investigation of leadership practice in one elementary school. Data for this study was collected over five consecutive school years: 1999-2004.\textsuperscript{18} In the first year (1999-2000), my colleagues from a larger study collected pilot data. Over the next three school years (2000-2003), I spent an average of one day per week at the school. In the year following my intensive study (2003-2004), I visited school leaders for follow-up discussions.

Based on the complexities of studying leadership practice, I chose to conduct a case study of one school. Case study methodology pushes for the collection of multiple sources of data: documentation, archival records, direct observation, participant observation, and physical artifacts (Yin, 1994). Collecting a variety of data helps reduce the likelihood of misinterpretation—it allows for redundancy of data gathering and procedural challenges to explanations (Stake, 1995). These methods of triangulation help achieve reliability in qualitative work.

\textsuperscript{18} I began studying Adams School in September, 2000. Prior to 2000, Richard Halverson and several of our colleagues (Lisa Walker, Lauren Banks, Baylen Linnekin) collected data at Adams School as well. Therefore, we have data for Adams School that has been collected over the span of five consecutive school years, spanning six calendar years, 1999-2004.
Because I focused on both the ostensive aspect (the ideal) and the performative aspect (the routine in practice) of a routine in language arts, I collected a variety of data types in an effort to capture as complete a picture as possible of these leadership routines: leader shadows, formal and informal interviews, meeting observations, a social network survey, and informal observations captured in field notes. (See Table 8.)

*Leader*\(^{19}\) shadows

Shadowing a leader throughout her day provides a good opportunity to document the performative aspect of a routine. Leader shadows also provide a view into the tools leaders use. From 2000-2003 I formally shadowed leaders eight times. In that time, I informally shadowed the literacy coordinators approximately once a week.\(^{20}\)

*Meetings*

Meetings are one of the most tangible ways that leadership practice can be observed. They are a good place to observe leadership in practice, as well as to watch the interactions between leaders and followers. While the meetings I observed were not always directly connected with the Five Week Assessment routine, many of them provided an opportunity to

\(^{19}\) Clarification of terms: While the principal of a school is clearly a leader, there are many other individuals who take on leadership roles. In this paper, I consider literacy coordinators to be leaders. I use the term followers to denote individuals who, in a particular activity, do not take on a leadership role. Leadership roles are fluid. An individual may be a leader in a literacy activity and then walk down the hall and become a follower in a grade level meeting.

\(^{20}\) I used the literacy coordinator’s office as my home base, spending time in between meetings, interviews, and other observations at that location. In doing so, I was able to informally observe the literacy coordinator’s practice on a regular basis. These informal observations are recorded as field notes.
better understand relevant elements of leadership practice. I observed an average of eight literacy meetings each year, and a total of ten Five Week Assessment meetings.

*Interviews*

Interviews are a critical way to uncover multiple facets within a case study (Stake, 1995.) In addition, interviews are effective ways to get at what leaders think they do, as well as identify the individuals that teachers and leaders consider leaders. Interviews are also important venues for learning about teachers and leaders. They act as a critical place for leaders to voice the ostensive aspect of the routine. Meetings do this too, particularly kick-off-the-year meetings. I collected a total of 20 formal interviews of administrators (principal, assistant principals), 13 formal interviews with the literacy coordinators, six formal interviews with the literacy coordinator’s assistant, and 29 formal interviews of teacher leaders relating to language arts. I also collected frequent informal interviews related to language arts issues.

*Social network data*

In the spring of 2002 I collected a social network survey from the faculty. In this survey, teachers and leaders identified what tools and people they used in their math and reading practice. These data create a school-wide picture of social connections and tool use that school personnel identified within their own individual practice.

*Informal observations*

Finally, the nuances of leadership are often found in the in-between places of the school day. For this reason, fieldnotes serve as a valuable data type—observations and snippets of conversations caught in the hallways, after meetings, before school, and in various offices and public spaces.
The data collection process has been iterative. As I found evidence of leadership activity that was relevant to the Five Week Assessment routine in language arts, based on formal interviews or informal chats with people, I periodically widened, narrowed, or shifted my data collection net. My purpose for collecting this variety of data, across time, was to gain a better understanding of leadership practice at this school. The data capture the activity of leadership practice across several leadership teams/eras. Information about the tools used and the people involved is also captured in the data collected.

Table 8.

<table>
<thead>
<tr>
<th>Data Collected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of data</td>
</tr>
<tr>
<td></td>
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<tr>
<td>1999-200021</td>
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<td>2000-2001</td>
</tr>
<tr>
<td>2001-2002</td>
</tr>
<tr>
<td>2002-2003</td>
</tr>
<tr>
<td>Formal leader interviews</td>
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<tr>
<td>Informal leader interviews</td>
</tr>
<tr>
<td>Formal teacher interviews</td>
</tr>
<tr>
<td>Informal teacher interviews</td>
</tr>
<tr>
<td>Leader shadows</td>
</tr>
<tr>
<td>Field notes</td>
</tr>
<tr>
<td>Meeting observations</td>
</tr>
<tr>
<td>Classroom observations</td>
</tr>
<tr>
<td>Social network survey</td>
</tr>
<tr>
<td>Test score data</td>
</tr>
</tbody>
</table>

Data analysis

My first challenge was to define the ostensive and performative aspects of the Five Week assessment routine in language arts. I began by identifying the leaders involved in the routine and the roles they each played. Because the routines changed across time, I also had to define the

21 I began studying Adams School in September, 2000. Prior to 2000, Richard Halverson, and several of my colleagues (Lisa Walker, Lauren Banks, Baylen Linnekin) collected data at Adams School as well. Therefore, we have data for Adams School that has been collected over the span of four consecutive school years, spanning five calendar years, 1999-2003.
ostensive and performative aspects of the routines as they changed. In order to capture the
ostensive aspect of the routine, I used interview data from a variety of leaders and teachers as
well as beginning of the year meetings (or “beginning of an era” meetings) in which leaders
announced their expectations around the Five Week Assessment routine. I triangulated this with
the literacy coordinator’s presentation of the routine to visitors. I then analyzed my observation
data (leader shadows, teacher observations, informal observations) to identify the performative
aspect of the routines. Here again I use interview data to triangulate. There are critical moments
in interviews when leaders talk of how the routine changes which can then be confirmed—or
refuted—with observation data.

I systematically coded interview (leader and teacher; formal and informal), leader
shadow, field note, and meeting data for all evidence of the Five Week Assessment routine in
language arts. In all I coded 82 formal interviews, eight formal leader shadows, 57 days of field
notes, and 46 meeting observations. First, I content coded each occurrence of the Five Week
Assessment routine to both define the routine and identify patterns that characterized the routine.
I looked at how and where the routine emerged in the work of the school and in the practice of
leaders and teachers. I found evidence of the routine consistently framing the leader talk, leader
activity, and follower activity. The sheer volume and prominence of the routine in interviews,
field note observations, and meetings speaks to its stabilizing effect.

In order to understand changes that happened in the routine across time, I then
categorized the data by time frame (years 1–4) and by the performed tasks of the routine (identify
needs, plan routine, develop assessments, copy and distribute assessments, administer and return
the assessments, scores assessments, compile and analyze scores, share scores and identify
needs). I categorized similarities and differences across time, using both theoretical frames
(looking for evidence of tools and characterizing ostensive and performative aspects of the routine). I also used the data itself to define my categories (time, tools, expertise, goals, priorities, coordination/logistics, tasks)—content coding both what changed and the reason/catalyst for the change.

Once I coded the ostensive aspect and the performative aspect, over time, I identified connections between these two aspects of the routine. For each ostensive change, I identified what changed, if the performative changed as well, and what kind of a change it was (repair, expanding, or striving; see below). I did the same for each performative change, determining whether the ostensive aspect changed.

In analyzing endogenous changes in Five Week Assessment routine over time, I used Feldman’s (2000) three descriptors for when routines change: to repair the routine (when actions do not produce intended outcomes), to expand the routine (when actions produce outcomes that create new problems to be solved), or to strive to make the routine even better (when actions produce intended outcomes but there is still room for improvement. Rather than producing problems, actions can result in outcomes that produce new resources and new opportunities.) I also use these categories to examine exogenous changes to the routine.

Exogenous factors contribute to significant changes in routines

Routines often change, or are built, in the early stages of establishing an organization (Feldman and Pentland, 2003). For instance, a new leader from the outside can enter an organization and bring about significant changes by building routines. Other exogenous factors, such as new district policy, contribute to major changes in schools through their impact on organizational routines. In the late 1980’s a new principal, Dr. Williams, took over a struggling
Adams Elementary. Test scores were low, the faculty was fragmented, and neighborhood violence was high. The district was struggling as well. Within this context, Dr. Williams, a charismatic new leader, built and sold her instructional vision through a series of new, interconnected routines.

**District context influences leadership practice**

Dr. Williams did not work in isolation—her leadership practice existed within a district and school context that influenced her work. District policy and internal capacity were factors that influenced her practice. At the time that Dr. Williams came to Adams, the district, like her school, was struggling. Test scores were dropping, and Chicago was considered the worst district in the country. In 1995, Paul Vallas became CEO and made sweeping reforms across the district. In the seven years he was in Chicago, Vallas created a district that became a model for the nation. School leaders faced increasing pressure to improve standardized test scores. District policy demanded that schools focus on reading and math. From 1996 to 2000 student test scores across the district increased. Elementary scores improved for six consecutive years. Dr. Williams transformed Adams within, and in response to, the context of these district changes.

**Building a vision through interconnected routines**

Dr. Williams’ had two main goals for the school: to build collaboration among a fragmented staff and to ensure that the students were learning. Signs asking, “Are the students learning? How do you know?” were posted all over the school. Ms. Tracy’s (the literacy coordinator) computer streamed these questions across her screen saver. Dr. Williams explained how she had to build structures to enable collaboration,
When I first got here (Adams) there was no articulation taking place between the teachers in the different grade levels. They did not have a common core of knowledge, so we established grade level teams initially so that teachers could have an opportunity to come together…. Initially I had to create the structures for the teachers to come together and talk. (Principal, 2000)

In response to these goals, as well as to the need for increased student performance in reading and writing on high stakes standardized tests, Dr. Williams and her literacy coordinator Ms. Tracy built four interconnected routines.

- **Breakfast Club.** A series of monthly morning meetings, often led by teachers, to discuss recent research. Teachers discussed literacy journal articles together as they ate breakfast provided by Dr. Williams.

- **Teacher Leader.** The faculty voted to lengthen the school days so they could have a monthly half-day for professional development sessions. Instead of bringing in outside “expertise” to lead these professional development meetings, Dr. Williams tapped into the strengths of her faculty, and the teachers taught each other in these Teacher Leader sessions.

- **Literacy Committee.** A smaller group—the literacy committee—met on a regular basis to plan literacy activities, discuss classroom practice, and reflect on progress made and desired.

- **Five Week Assessment.** Every five weeks students were assessed in reading and writing. The assessments, designed by the literacy coordinator, provided an opportunity for students to gain practice with test taking. The assessments also provided an opportunity for leaders to get the pulse of the school, analyzing these student data to identify strengths and weaknesses. Leaders used this information to plan various leadership tasks, including
topics for Breakfast Club and Teacher Leader meetings. The routine also provided formative assessment data that the teachers could then use to improve their instruction.

While these routines were able to stand alone, in practice the leaders often used the routines to inform and frame each other. Here Dr. Williams explains the beginnings of Breakfast Club and Teacher Leader,

(Breakfast Club) started with a small group where teachers were given an article and initially they would just summarize it. Then they began talking about the articles and the research as it related to what they were actually doing in their classrooms. From there, we moved into the Teacher Leader Program because it became apparent that many of our teachers were doing some successful things, but they didn’t have a forum for sharing that information with other teachers. (Principal, 2000)

The following example shows how a literacy committee meeting informed the Five Week Assessment routine. In the winter of 2001 Ms. Tracy, the literacy coordinator, decided to focus instructional improvement efforts on different strategies students could use to connect with the text they read. With Ms. Tracy’s urging, Ms. Grovenor, a third grade teacher, tried out these strategies in her classroom. At a literacy committee meeting several days later, after the middle school reading coordinator shared a summary of a chapter from Harvey and Goudvis’s (2000) Strategies that Work: Teaching Comprehension to Enhance Understanding that overviewed these strategies, Ms. Grovenor shared her classroom experiences and successes with using these strategies. Ms. Tracy ended the meeting with a vote from the teachers that determined their next instructional focus: connecting to text. The next Five Week Assessment would assess students on their ability to connect to text. That month, the Breakfast Club article revolved around this theme as well. In connecting the practice of the routines in this way, the leaders supported language arts instruction by offering teachers resources and opportunities to collaborate around important literacy components.
Selling a vision through interconnected routines

Dr. Williams organized her leadership practice around these routines. She and other school leaders used the routines as a key reference point in talking about their work to outsiders, as well as describing their work to colleagues. They began language arts meetings with results of the Five Week Assessments, they organized their Breakfast Club meetings around topics that arose from Five Week Assessment results, and they often called specific grade level meetings in order to discuss grade level results and identify areas for improvement.

When her focus in an interview turns to language arts, Dr. Williams begins by describing her literacy coordinator’s work,

My literacy coordinator works with teachers, new teachers. She works with the assessment program, and she just thought we were asking her to do too much work. My literacy coordinator actually grades most of the reading assessments (herself) because she wants to know, first hand, what the students are doing. Then she gives the papers back to the teachers so that she – as she meets with the teachers in follow-up discussions, she knows what it is – what the weaknesses are and she can make recommendations for improvement. (Principal, 2000)

When leaders at the school described their instructional vision, they usually talked about the routines. When asked in formal interviews to discuss how they achieve their goals for language arts, school leaders talked about the routines.

In building these routines, Dr. Williams dramatically changed the organization. Prior to her arrival, the faculty did not meet, collaborate, or give school-wide assessments. Initially, Ms. Williams’ routines caused discomfort among many school personnel. She brought in a new way of leading, one focus of which included accountability built into the routines. After her first two years as principal, only six primary teachers remained from the original 25 that she started with in the K-3 building. She explains,
And some of them actually left before I got there because they had been in a situation where they had not been held accountable for anything. And that was something that even before they talked about accountability on the school district level, I felt that if we’re going to engage everyone in the process, then accountability is part of that process. So we were all accountable much earlier. (Principal, 2000)

The intermediate building experienced less turnover; overall, two-thirds of the teachers Williams’ started with remained at Adams by the beginning of my study in 1999. These remaining teachers were individuals who bought into the changes and incorporated—among other things—the tasks of the routines into their practice. Over time, the motto: “Are the children learning? How do you know?” became common language among the school’s teaching staff, often in connection of their teaching practice with the Five Week Assessment routine.

Exogenous factors were the catalyst for big changes in an organization through a new principal’s development of a series of organizational routines. In this way, school leadership practice was influenced by exogenous factors.

Routine as a stabilizer

While routines can act as a source of major change, routines can also act as a source of stability in an organization (Feldman & Pentland, 2003). The routines that Dr. Williams and her leadership team built stabilized the organization in three ways. First, the routine framed the practice of most of the individuals at Adams School. While Williams was principal, the routine influenced the practice of many school personnel, connected individuals by the interdependence of the tasks, and outlined much of the instructional efforts in language arts. Second, the routine stabilized the transition of new leaders. In late summer of 2001, Dr. Williams and Ms. Tracy, left Adams. The routines they had built gave the remaining leaders and teachers—and the
organization—a sense of continuity despite the departure of these two critical school leaders. Finally, the routine protected new leaders to do sensitive work.

The routine becomes integral to the organization

Over time, the Five Week Assessment routine became an integral part of the school’s language arts practice. Once the Five Week Assessment routine was established, it became part of the practice of teaching and learning within the entire organization. This is evidenced in how leaders and teachers talked about their language arts practice, as well as in the every day literacy-related tasks of leaders and teachers. In the time I studied Adams School, the Five Week Assessment routine dominated the practice of the literacy coordinator and her assistant. Interview and observation data indicate that, in all, the practice of over 65% of the staff at Adams was influenced in some way by the Five Week Assessment routine. Only a handful of teachers (pre-school and K teachers, computer lab teacher, science coordinator, case manager, and the librarians) were not involved in the routine. Every other teacher in the school regularly enacted—or was expected to enact—one, if not many, tasks connected to the routine.

The principal and assistant principals were involved in data analysis and strategic planning activities based on formative assessment data the routine provided. All teachers, with the exception of pre-school and kindergarten, in the school administered the reading and writing assessment every five weeks. They also attended meetings where data was shared, analyzed, and/or discussed. Teachers were expected to change their instruction in response to formative assessment data from the Five Week Assessment routine. The literacy coordinator’s assistant’s primary responsibilities involved tasks related to the routine—anything from running copies of the assessments to scoring assessments and compiling student data. Finally, the literacy
coordinator’s work revolved mainly around enactment of the routine. The routine was integral to the practice of nearly all of the teachers and leaders at Adams.

*Defining the ostensive aspect of the routine*

The ostensive aspect of the Five Week Assessment routine in language arts, the ideal, became a stabilizing factor for instructional practice within the organization. The ostensive aspect of the routine, as designed by Ms. Tracy and Dr. Williams, is a five-week cycle that includes a needs analysis, a student assessment in reading and writing, scoring and data analysis, and feedback to teachers in order to inform their instruction before the next assessment. In the fall of 2000, this series of steps acted as a script for Ms. Tracy’s practice. The list below serves as a fleshed out version of the routine. I constructed this list from interviews with Ms. Tracy as well as observations of her practice. I triangulated Ms. Tracy’s depiction of the ostensive aspect of the routine with interview data of other leaders and teachers. The script shows how the tasks dictated much of her practice, as well as involving many other Adams’ personnel.

Five Week Assessment Routine (Fall 2000)

*Step 1: Identify needs.*

In the spring of the previous year, the literacy coordinator assesses the student needs, based primarily on standardized test scores.

*Step 2: Plan Five Week Assessment schedule.*

The literacy coordinator then creates a plan for each assessment, based on the patterns of need and the time available. Five Week Assessments occur every five weeks throughout the year.

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22 This basic list is gleaned from leader interview data.
23 This extended version serves to build a base of understanding of the routine for the reader.
24 When leaders talk about routines, they tend to describe the ostensive aspect while followers tend to talk more about their practice, describing the performative aspect. The ostensive aspect can be codified as a standard operating procedure, with diverse participants understanding the routine according to their roles (Feldman & Pentland, 2003). Because of this variety of understandings and performance, it is important for me to qualify that the list below serves as a snapshot of the ostensive aspect of the routine at one moment in time.
Step 3: Develop assessments.

The literacy coordinator then develops the assessments for each grade. She clusters grade levels together, generating assessments for each grade cluster: 1/2, 3/4, 5/6, and 7/8.

Step 4: Copy and distribute assessments to teachers.

The literacy coordinator and her assistant copy and distribute the assessments.

Step 5: Administer and return assessments to literacy coordinator.

Teachers administer the assessments to their students and return the completed assessments to the literacy coordinator.

Step 6: Score assessments.

The literacy coordinator and her assistant score the reading assessments. The writing assessments are scored by a collaboration of the literacy coordinator, her assistant, and teacher leaders.

Step 7: Compile and analyze scores.

The literacy coordinator and her assistant compile and analyze the scores.

Step 8: Share scores and plan future assessments.

The literacy coordinator shares the scores with the principal, assistant principals, teachers, and other relevant staff. She, or a combination of leaders, responds to the data and plans for any changes in the assessment routine.

Teacher tasks related to the routine were frequent. They gave the assessments every five weeks and met regularly, in a variety of groupings, to discuss routine-related topics such as analysis of the results and next steps in instruction to support student learning. The literacy coordinator created the themes and concepts in each assessment cycle with the intention that they would structure teachers’ reading and writing instruction. Additionally, the tasks related to the routine connected teachers and leaders in an intricate social network. The frequency of the tasks and the coordinated practice (Spillane, Diamond, Sherer, Coldren, 2005) they enabled were stabilizing effects of the routine. Figure 7 below shows how the routine tied teachers and leaders together around routine-specific tasks.
The frequent and interdependent nature of the routine’s tasks created a well-connected network in language arts that centered around the literacy coordinator. The routine served as a medium for connection and communication across teachers and leaders, providing school leaders with a way to navigate the geographical challenge of being located in two buildings. The literacy coordinator acknowledges the roadblock of being housed in a different building from the 4-8 grade teachers,

Kelly: I talk to everybody.
Interviewer: Are you mostly in this building (K-3)?
Kelly: Yes, I am mostly over here… I still talk to all them (4-8 grade teachers in the South building) too, it’s just that not being right there, you don’t get to talk to those teachers as much.
Interviewer: Right.
Kelly: It depends where you are (located) physically. (Literacy Coordinator, 2002)

Despite this reality, the 4-8 grade teachers seek her out most often for reading advice.

(See Table 9 below.) Network survey data show that teachers seek a wide variety of individuals for reading advice, and do so roughly every other day.

Table 9.

Patterns in the Advice Seeking Behavior of Followers at Adams

<table>
<thead>
<tr>
<th>Teacher and/or leader that teachers seek out for reading help:</th>
<th># of times a teacher talks to a teacher and/or leader, per week, about reading</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>North building (grades 1-3)</td>
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<tr>
<td>Literacy coordinator and within grade level teacher</td>
<td>2</td>
</tr>
<tr>
<td>Literacy coordinator, within grade level, and another grade level teacher</td>
<td>5</td>
</tr>
<tr>
<td>Literacy coordinator only</td>
<td>2</td>
</tr>
<tr>
<td>Grade level colleague only</td>
<td>2</td>
</tr>
<tr>
<td>Teachers from other grade levels only</td>
<td>1</td>
</tr>
</tbody>
</table>

This table clearly shows that while followers may depend on the literacy coordinator for advice, they almost all talked to other teachers in the building about reading instruction. The routine ties the majority of the Adams faculty together, involving connection and collaboration around the tasks. This routine structures the language arts work of teachers and leaders, coordinates their work around a common purpose, and serves as a major connection point for the school’s language arts instructional reform efforts. In this way, the Five Week Assessment routine—which served as a major change with the entry of Dr. Williams as principal—became a stabilizer for the organization, even after her departure.
Routine stabilizes transition in leaders

Urban schools struggle with sustaining quality in the face of high leader and teacher turnover. At a time of abrupt change such as a change in leadership, established routines can act as a stabilizer for the incoming leaders, as well as for the entire organization. When a new individual enters a formal leadership role within a school, she must build her new practice. If the school has a routine in place, she—and the others involved in the routine—is likely to continue to enact that routine. In this way, the routine stabilizes leadership practice. The Five Week Assessment routine stabilized the leadership practice in language arts at Adams. This can be seen in three leadership transitions that took place in the course of my study.

The first leadership transition I saw occurred in August 2001 when Dr. Williams and Ms. Tracy left the school. An assistant principal, Ms. Richards, became acting principal and promoted Ms. Walsh, the eighth grade social studies and reading teacher, to the literacy coordinator position. This abrupt change happened late in the summer, causing discomfort and turmoil for the remaining leaders as well as the teachers. Both Ms. Richards and Ms. Walsh had only two weeks before the start of school to plan for their new roles. Ms. Richards planned to keep things close to the standard operating procedures of the past. In her first speech to the faculty on August, 29, 2001, she said,

> We want to continue, we do not want to get rid of any of the programs we already started. We want to keep everything in tact. Now, I’m not saying that we want to take on a whole lot of other new things, because we need to work within our realm right now to perfect and get everything off to a good start. (Principal, 2001)

As the new literacy coordinator, Ms. Walsh built her practice in ways that mirrored Ms. Tracy’s practice, adopting the same steps of the Five Week Assessment routine. The only change she initially made was to assess a sample of students’ writing each cycle, rather than every
student’s piece every five weeks. By choosing to follow the script of this well-established routine, and make few changes, Ms. Walsh eased into her leadership practice. The Five Week Assessment routine stabilized her transition into this new leadership role.

The power of the routine’s ability to stabilize leadership practice is also clear in the case of Ms. Kelly’s transition from fifth grade teacher to literacy coordinator in December 2001. At the time of Ms. Kelly’s transition into the role of literacy coordinator, the new principal Ms. Richards decided to change the structure of language arts leadership practice in the school. Ms. Richards wanted to shift responsibility from one literacy coordinator to four individuals: Ms. Walsh who was now back in 8th grade, Ms. Kelly, Ms. Baize the middle school reading teacher, and Ms. Jones the primary librarian. In doing so, Ms. Richards wanted many of the tasks of the routine as well as many of the tasks of instructional leadership in language arts, to be distributed across four individuals, rather than continuing with the past model in which one literacy coordinator independently managed the work of leadership practice in language arts and the Five Week Assessment routine. At the time of the transition, each of the four literacy leaders had a slightly different understanding of the role she would play within this new structure. None of them saw themselves working together as equal partners. Ms. Walsh saw her new role as classroom teacher and co-literacy coordinator. Ms. Baize described a three-way collaboration that left Ms. Walsh out (due to her classroom responsibilities). Ms. James did not plan to work closely with the other three around tasks of the routine because she was focused on organizing the primary library and the K-3 library classes she taught. Ms. Kelly saw herself as the literacy coordinator with primary responsibility for the Five Week Assessment routine. (Appendix C details these differences in perception.)
The change in the language arts structure did not happen as Ms. Richards intended it; the four women did not collaborate around the routine as Ms. Richards had proposed in her new intended structure. One month into the transition, Ms. Kelly, the only language arts leader of the four who did not have classroom teaching responsibilities, had begun to frame her practice around the Five Week Assessment routine in ways very similar to Ms. Tracy. She worked on all of the tasks of the routine, from crafting assessments to scoring them. Despite her original vision to share scoring responsibilities with the other women, even that task was not consistently shared, as Ms. Kelly and her assistant scored all of the reading and writing assessments. Ms. Kelly established her practice in line with previous enactment of the routine while the other three language arts leaders continued to enact their other roles with little to no change. Ms. James continued to focus on the library while Ms. Walsh and Ms. Baize remained exclusively in their classrooms, busy with their teaching tasks. The exception to this was that Ms. Baize and Ms. Walsh joined Ms. Kelly at some language arts meetings run by an external partner. The stabilizing effect of this routine, which involved one literacy coordinator enacting many of the tasks of the routine, disrupted the principal’s intention for the four women to share leadership in language arts. In the end, the language arts leaders maintained the status quo by remaining in a hierarchical model, despite the principal’s intention to change leadership practice to a more collaborative model.

This is an example of regression to the norm, as the script for the Five Week Assessment routine framed the leadership practice of all three literacy coordinators, Ms. Tracy, Ms. Walsh, and Ms. Kelly. In this case, the principal proposed a change in the language arts structure in response to the failure of the current structure. However, Ms. Kelly’s practice in the literacy coordinator role—framed by the old model—was successful, according to Ms. Richards. “(Ms.
Kelly) will go in (to classrooms), she will model, she will mentor, she will provide whatever kind of help she needs to do. She’s good. And that has been, that has been good,” (Principal, 2002). As a result, Ms. Richards did not continue to strive to change the structure. She still acknowledged these four women as the literacy team but considered Ms. Kelly the primary leader. “Mrs. Kelly (is) our reading specialist…we have a literacy team which consists of a primary teacher, a middle school teacher and an intermediate teacher. So that makes up the literacy team along with Mrs. Kelly,” (Principal, 2002).

These data show how a routine preserves the status quo. The routine gave a sense of continuity to the organization, as well as to the individuals within the organization as they defined or redefined their roles. In addition, these examples show how the routine enabled newcomers to ease into their new positions and they offer a glimpse into how the routine changes. This will be more thoroughly discussed later in the chapter.

*Routine protects new leaders to do sensitive work*

Routines serve as an important source of political protection (Feldman & Pentland, 2003). Through enactment of established routines, new leaders can do tasks that are politically difficult because the routine protects the personalities involved. Ms. Kelly’s practice as a new literacy coordinator serves as one example. The biggest change Ms. Kelly made to the Five Week Assessment routine was to increase the focus on writing. She considered writing to be a school-wide weakness. As opposed to Ms. Walsh, who created a literacy committee to read samples of student writing each cycle, Ms. Kelly and her assistant read all of the students’ writing themselves and wrote comments to individual students as well as overall comments to teachers that included strategies for teachers to focus or change their writing instruction.
Additionally, this data gave Ms. Kelly information about patterns of needed improvement so she could support teachers through professional development sessions, additional resources, and Breakfast Club topics. Ms. Kelly’s focus on writing was new and uncomfortable for many teachers who did not consistently teach writing in their classrooms. In creating this focus on student writing in the Five Week Assessment routine, Ms. Kelly was not telling the teachers how to teach writing, but she was giving them consistent feedback and suggestions about writing instruction. This normally difficult practice was safe because it is just part of the routine, and making sure teachers do the routine is her job. As a new literacy coordinator, with only six years of teaching experience, she was able to use the tasks of the routine to push teachers to focus and change their instruction. In addition, she did not need to achieve buy-in, which is particularly important for new leaders, because the routine was a proxy for authority. Ms. Kelly simply carried out her work and used the routine to frame teacher practice. Because the ostensive aspect of a routine is its ideal, defined by each individual based on her role, leaders have leeway to enact this script of the routine in practice. The actions leaders take, under the guise of the routine, allow them to interact with teachers around the sensitive issue of instructional change.

Routine simultaneously stabilizes the organization and provides opportunities for change

Once established, the Five Week Assessment routine stabilized the organization and the practice of many individuals in Adams School. However, while the routine stabilized the organization as I describe in the above section, the routine also changed. Over time, leaders did change the Five Week Assessment routine. These changes varied in degree. In order to examine these changes, and create an understanding of how routines provide opportunities for people to make changes in organizations, I examine the changes in multiple ways. First, I consider reasons
for endogenous change, using Feldman’s (2000) categorizations. I then examine performative changes in the Five Week Assessment routine, ostensive changes, and instances where both the ostensive and performative aspects changed. Through this discussion of changes in the routine, I discuss contributions to our understanding of organizational change and how we might support school leaders in their work. See Figure 8 for changes over time.

<table>
<thead>
<tr>
<th>Step 1: Identify needs</th>
<th>Prior to start of year, Ms. Tracy identifies needs.</th>
<th>Ms. Walsh uses Ms. Tracy’s plan from previous year</th>
<th>Repairing</th>
<th>Prior to start of year, Ms. Kelly identifies needs.</th>
<th>Striving</th>
<th>Principal and assistant principal change goal of routine: Students need to practice tests in a timed environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 2: Plan 5WA</td>
<td>Prior to start of year, Ms. Tracy plans five week assessment.</td>
<td></td>
<td>Realign</td>
<td>Ms. Kelly creates new assessments so students do not repeat assessments.</td>
<td>Striving</td>
<td>Replace five week assessments with weekly timed assessments. Writing assessments are halted.</td>
</tr>
<tr>
<td>Step 4: Copy &amp; distribute assessments</td>
<td>Ms. Smith copies and distributes assessments</td>
<td></td>
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<tr>
<td>Step 5: Administer &amp; return assessments</td>
<td>Teachers administer and return assessments to Ms. Smith.</td>
<td>FIL: Teachers keep their assessments.</td>
<td></td>
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</tr>
<tr>
<td>Step 6: Score assessments</td>
<td>Ms. Tracy and Ms. Smith score all reading and writing assessments.</td>
<td>Expanding</td>
<td>Ms. Tracy creates literacy team to help her and Ms. Smith score all students’ writing assessments.</td>
<td>Repairing</td>
<td>Ms. Walsh has literacy team score sample of students’ writing each cycle.</td>
<td>Repairing</td>
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<tr>
<td>Step 7: Compile &amp; analyze scores</td>
<td>Ms. Tracy compiles and analyzes scores.</td>
<td>FIL:</td>
<td>Ms. Tracy is inconsistent about compiling and analyzing scores, due to a shift in her priorities.</td>
<td>Ms. Walsh compiles but does not analyze scores.</td>
<td>Expanding</td>
<td>Ms. Kelly implements software tool as a way to manage data.</td>
</tr>
<tr>
<td>Step 8: Share scores &amp; identify needs</td>
<td>Repairing</td>
<td>Dr. Williams realized this step was necessary and added it.</td>
<td>FIL</td>
<td>Meetings become rare due to a shift in Ms. Tracy’s priorities and consequent lack of time.</td>
<td>FIL</td>
<td>Ms. Walsh does not share scores and identify needs.</td>
</tr>
</tbody>
</table>
I use Martha Feldman’s (2000) frame to examine why the Five Week Assessment routine changed due to internal factors. She found that organizations change routines in one of three ways: people repair the routine, expand the routine, or strive to make the routine better. When actions do not produce the intended outcomes, leaders make changes to repair the routine. When actions produce outcomes that create new problems to be solved, leaders expand the routine. Finally, when actions produce intended outcomes, but there is room for improvement, leaders strive to change the routine.
The language arts leaders at Adams repaired the routine around elements of scoring and identifying needs. The Five Week Assessment routine measured student learning at moments in time. When students were not improving on the assessments, the leaders at Adams made a repair. (See Figure 8.) In March of 2001, Dr. Williams shared this repairing story,

> When we first started our Five Week Assessment Program, it was a good idea. But what we didn’t (do) was (plan) follow-up conferences with the teachers. So the teachers would give the test, get the results and put them down. And so there was no interaction after that. So the first year, you know, there was no difference (in scores). And as we looked at what we did, we finally came to the conclusion– what was missing was we didn’t find time for the teachers to talk about the results of the Five Week Assessment. So the next year, we put a lot of substitute money into our budget and (created those meetings). (Principal, 2000)

In response to the lack of student improvement, Dr. Williams repaired the routine by adding an element that would allow teachers to discuss the scores and learn from them, in turn impacting instruction around elements the students had not yet mastered. Essentially, when scores did not go up, Dr. Williams inferred that the routine was not working optimally, and she made changes to the routine. In another repair, Ms. Tracy noted that the students were struggling on writing assessments and added a writing component to the Five Week Assessment routine.

Scoring all of the assessments was an on-going challenge for the literacy coordinators, as was creating this time for leaders to share scores with teachers and identify needs. Over time, two subsequent repairs took place in scoring and sharing scores. Ms. Walsh repaired the scoring by deciding to sample student work instead of score it all. Ms. Kelly—judging this change to be ineffective—repaired this step again and scored, with her assistant, all of the student writing. Additionally, she scheduled grade-level meetings to discuss results, a step repaired once before by Dr. Williams but not consistently enacted by former literacy coordinators. In all four
examples, leaders made changes to the routine, in the scoring or sharing scoring step, in order to repair it. This pattern reveals that scoring is a part of the routine that is hard to enact, given the conditions of the activity.

Expanding

The leaders at Adams expanded the routine in areas of compiling and analyzing scores. There are only two examples of leaders at Adams expanding the routine. Discussions about data between leaders and teachers helped teachers focus on the strengths and needs of their students. However, this change created a new problem: how to quickly compile and analyze scores for those sessions. The task of entering and analyzing over 1000 reading and writing scores every five weeks quickly became a large data management issue. In 2002 school leaders purchased a new software tool and a consultant’s temporary services to help manage the data. Using the tool and the consultant’s help, the literacy coordinator was able to more easily produce reports and graphs for distribution of the data analysis to the teachers.

Compatibility across assessments was another problem that arose but was not solved by leaders at Adams. Comparing student test scores on the 5th week assessment, which focused on graphic organizers, to data on the 15th week assessment, which was reading comprehension, was problematic because these were two different reading skills so a comparison did not show growth over time on a particular concept. This lack of expanding examples may indicate that the category is less relevant for a routine that happens with high frequency, like the Five Week Assessment routine, than a routine that happens less frequently, providing individuals a chance
to examine and solve new problems. The high frequency of the Five Week Assessment routine made it difficult for teachers and leaders to examine and reflect on their work. This might account for one pattern of endogenous change: that leaders tended to make most changes at the beginning of a school year, after using the summer to reflect and plan changes to the routine.

Striving

Leaders at Adams \textit{strived} for more in the areas of identifying needs, planning the assessments, and developing the actual assessments. In the winter of 2003, school leaders added a weekly timed test component to the Five Week Assessment routine. In order to give students a chance to become familiar with the format and pressure of the standardized timed test, the principal and her administrative team paused the Five Week Assessments for the month before the high stakes testing and replaced them with weekly timed tests. In this way, the leaders added to the routine. In doing so, they addressed a wider set of student achievement goals.

Leaders most often repaired the routine at Adams, but other changes to the routine were instances of leaders striving to make the routine better or fixing problems that arose in the process of performing the routine. Endogenous changes to the routine happened in a variety of ways. I now turn to nuances of the changes, since leaders did not consistently change both the ostensive aspect and the performative aspect of the routine.

Performative changes

Routines happen in a particular place, at a particular time, enacted by particular people (Feldman and Pentland, 2003). This is the performative aspect of the routine. Because the

\footnote{Feldman built these categories around empirical work on an annual hiring routine (2000).}
ostensive aspect of the routine is an ideal and thus is not strictly defined, teachers and leaders make choices about which tasks to enact and how to enact them. In this way, human agency plays a role—through the performative aspect—in changing a routine. Three patterns characterize what changed the performative aspect of the Five Week Assessment routine during the time of my study: a change in tools, a change in people, and a change in leaders’ priorities. These patterns characterize different catalysts for change in the routines.

Both changes in a tool and changes in leaders changed the performative aspect of the Five Week Assessment routine in language arts. When Ms. Walsh became literacy coordinator, she changed the way that the writing assessments were scored. When Ms. Kelly replaced Ms. Walsh, she changed the scoring again. Additionally, when the district introduced a standardized test that involved writing, Ms. Tracy added a writing component to the routine. Finally, when leaders adopted a software program to manage the data, the literacy coordinator shared data with the teachers more often and in a wider variety of forms. The software enabled Ms. Kelly to more easily manage and share classroom level, grade level, and school-wide data. In each instance, the performative aspect of the routine changed.

In addition, when leader’s priorities changed, the performative aspect of the routine changed. Ms. Tracy and Ms. Kelly both had distractions that resulted in a shift in their priorities, duties to the principal and maternity leave respectively, which caused their performance of the routine to change. In both cases, their shift in focus caused the Five Week Assessment to stall; assessments were not consistently scored, results were not shared, and at times an assessment cycle was skipped completely.

When leaders at Adams changed a performative aspect of the routine as a result of new people or new tools—in an effort to improve the routine—the ostensive aspect of the routine also
changed. However, when the change in performance was due to a failure to carry out the routine or a shift in leaders’ priorities away from the routine, then the ostensive aspect did not change. Ms. Tracy’s addition of a writing assessment, with the purpose to support student writing and thus improve the routine, was a change in both the ostensive and the performative aspects. Conversely, when she did not carry out data analysis because she was too busy, the ostensive aspect did not change. The ostensive aspect of the routine still included that component.

**Ostensive changes**

The ostensive aspect of a routine is harder to change than the performative aspect. This is the case because the ostensive aspect of a routine is the routine in its ideal and in some cases, like the Five Week Assessment routine at Adams, is standard operating procedure—defined individually by each individual in the organization (Feldman and Pentland, 2003). A change in performance requires one person to change her behavior, but a change in the ideal requires more force. Over time, changes in the performance of the routine at Adams contributed to changes in the ostensive aspect of the routine. This happened under one of three circumstances: a change in leader, a change in an individual’s commitment to the routine, or a drop in student performance. Other times, leaders changed the ostensive aspect of the routine in response to exogenous pressures. This was the case when Ms. Tracy added the writing component and more inquiry reading questions in response to the district’s addition of the Illinois Standard Achievement Test, an inquiry based standardized test with a writing component.\(^{26}\)

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\(^{26}\) At the time of my study, the Iowa Test of Basic Skills was the high stakes standardized test. The Illinois Standard Achievement Test was also administered at Adams as the district was in the process of shifting its focus from the ITBS to the ISAT.
While the ostensive aspect is harder to change, leaders at Adams did, on several occasions, change it. In cases where the ostensive change happened first, the performantive aspect often changed but not always. When the leaders lacked time or resources to enact the intended change in the routine, their performance of the routine did not change in line with the ostensive change. This was primarily the case in the repairing examples, when the leaders wanted to share the scoring with teachers but are unable to consistently enact that step.

When performative and ostensive aspects of a routine both change

When leaders talk about a routine, they tend to share the ostensive aspect while followers tend to share their practice, which reflects the performative aspect of the routine (Feldman & Pentland, 2003). Because of her heavy involvement in the routine, the literacy coordinator at Adams shared both components—the routine in its ideal, when she shared her work with visitors or at a faculty meeting, and the routine in practice, which was evident in her interviews and in observations of her practice. If a shift in the ostensive aspect of the routine reflects a change the leaders value, and a shift in the performative aspect of the routine reflects a change that teachers and leaders value, then a change in both aspects means two things: that teachers and leaders have found the change to be important, and that the leaders have supported the change with adequate resources. Thus, a routine can be said to change most powerfully when both the ostensive and the performative aspect change. New leaders and new tools catalyzed these powerful changes at Adams.

Ms. Kelly’s focus on writing serves as one example of a powerful change to the routine. She changed both the ostensive aspect and the performative aspect of the writing routine around scoring, a step that was consistently revised (see Figure 8). By holding teachers and students
accountable for high quality writing, Kelly supported student performance in writing at the school. This change might be considered small. She did not change the goal of the routine, nor did she directly add or change the work of anyone in the school except for her own and her assistant’s work. She simply held people accountable for their work as defined by the routine: teach students how to write and expect good writing from them. While this change in the routine was small, it is not trivial. The writing scores at Adams improved. In 2005, students at Adams outperformed other students with similar economic profiles, and the writing scores are better than reading and math scores, which is not consistent with the norm statewide in which math scores tend to be higher than writing scores. See Figure 9. While these data do not show causality, they do suggest correlation.
Discussion

Much of the work of organizations takes place in routines. Because people do the work of routines, human agency plays a critical role in creating opportunities for change. I have used Feldman and Pentland’s (2003) work on routines to frame an examination of one school’s routine in language arts to better understand how routines offer both stability and change within an organization. Exogenous factors, such as a new leader or a new district policy, contribute to major changes in schools through their impact on organizational routines. A new leader can enter an existing organization and bring about major change through the design and implementation of new routines. This was the case at Adams. Dr. Williams and Ms. Tracy built a series of routines
that organized the work of teachers and leaders throughout Adams School. At this time, these
routines served as major change agents.

Mobility of leaders, teachers, and students is a huge problem in urban schools. Because of
this constant change, there is inherent instability in the environment. Routines help to counter
this by providing continuity and stability in schools. Looking across the four years that I studied
Adams, many staff members left the school while others changed roles within the school, yet the
Five Week Assessment routine continued throughout the entire period. Normally, new leaders
bring change, yet the stability of this routine is striking. This may be true for several reasons. The
Five Week Assessment routine was built by a highly regarded principal. In addition, she built the
routine in response to high stakes testing, and the routine was one component of her work to
improve standardized test scores, an essential need considering the district’s high stakes
accountability policies. At the time of my study, this routine was considered an exemplar by the
district and other schools had begun the implementation of this routine. And finally, the routine
did prove successful: it gave leaders a way of understanding student performance on a frequent
basis which is critical in a school with high student mobility.

While routines can be a source of consistency in an organization, they also exist as an
opportunity for change. While the Five Week Assessment routine remained in place over several
years, and throughout several leadership transitions, the routine did undergo change. Leaders
change routines in order to repair them, expand them, or they strive to make them better
(Feldman, 2000). School leaders at Adams repaired the Five Week Assessment routine
frequently, signifying weak points in the routine around scoring and sharing the data. I argue that
leaders do less expanding and striving as a result of their lack of time to reflect. A school routine
that happens every five weeks, and incorporates many tasks in a short period of time, provides
leaders with minimal opportunity to reflect on or revise the routine during the school year. This may explain why many of the changes in the routine happen at the beginning of a new school year following summer break and when new people enter leadership positions.

Feldman and Pentland (2003) argue that the interactions between the ostensive and the performative aspects of a routine may lend important insight into changes in that routine. In the case of Adams, interactions between these aspects have the potential to tell us something about the significance of the changes in the routine. At times, the performative and the ostensive aspects of a routine both change, like when Ms. Tracy added the writing component to the routine and subsequent literacy coordinators consistently implemented five-week writing assessments. These changes in the routine are more remarkable than a change in the ostensive aspect but not the performative aspect, like when the new software tool was purchased to help manage data and analysis but was not consistently used.

The ostensive aspect of the routine—the routine in its ideal—is particularly hard to change. This is evident in the changes of the Five Week Assessment routine at Adams School. The performative aspect of the routine changed more frequently than the ostensive aspect. Additionally, the performative aspect usually changed when the ostensive aspect changed, but not vice versa.

There are several ostensive changes in the Five Week Assessment routine that served as important changes to the routine. When the standardized test changed from skill based to one with a heavier emphasis on problem solving, the goal of the routine was revised. When the leaders shifted the purpose of the routine from one of capturing a snapshot of student learning to one that gave students an opportunity to practice the timed element of the standardized test, the
ostensive aspect changed. However, not all of these changes to the ostensive aspect were enacted consistently in practice, nor did the changes last over time.

Not surprisingly, when new people enter the routine, they make changes. What is more remarkable is when changes they make stick beyond their tenure. Dr. Williams added the feedback loop to the routine. Several years later, when Ms. Kelly took over as literacy coordinator, the first major task she completed was to hold grade level meetings in which she shared and discussed assessment data from the most recent Five Week Assessment. I believe this change stuck because it was a critical component to the routine’s impact on student performance. If assessment data were not used by teachers to inform their practice—formative data—then the routine would have been a waste of everyone’s time—leaders, teachers, and students. My data show that this feedback loop was not consistently carried out in practice due to logistical challenges, manpower issues, tools, and basic capacity limitations. So, despite the importance of that step in the routine, and the acknowledgement of this by multiple leaders across time, the change did not consistently get carried out in practice. Capacity is a big part of the success of the routines. When priorities shift, things that people know are important do not happen. One challenge for school leaders is to provide sufficient resources for important routines to be enacted so as to have maximum impact, and find ways to protect against the danger of a shift away from the essential work that serves the purpose of a routine.

Routines are dynamic components of organizations. They simultaneously stabilize and provide opportunities for change. We know that broad scale change in schools is hard to achieve, but slow change can happen through the human agency enacted in routines. Leaders can choose how and whether to enact the routine. They bring their own experience to their work, changing the routine to fit their expertise, perceptions of what is important, and previous experience with
the routine. In this way, the routine stabilizes the organization across leadership transitions, but the tasks within the routine turn out to be different for each leader.

In addition, leaders can do tasks that are politically difficult because the routine protects the personalities involved. The actions leaders take, under the guise of the routine, allow them to interact with teachers around the sensitive issue of instructional change. For instance, Ms. Kelly was not telling the teachers how to teach writing, but she was instead giving them feedback and suggestions—and this normally difficult practice was safe because she was simply holding teachers accountable to the routine, and that was her job. In addition, leaders do not need to achieve buy in (important particularly for new leaders) because the routine is a proxy for authority. Because the ostensive aspect of a routine is an ideal, and not a prescription, the leaders have more leeway to enact the routine in practice.

Because routines are an important place where the work of the organization gets done, creating a better understanding of school routines helps to construct a better understanding of leadership practice in schools. In future work, I propose to push for generalizability, exploring whether or not these patterns of change hold true for other language arts routines in the school. In addition, I plan to consider ways in which subject matters in routines, by exploring whether and how the patterns of stability and change differ across different subject matter domains.
CHAPTER FOUR

DISTRIBUTED LEADERSHIP PRACTICE IN MATH AND LANGUAGE ARTS:
ONE SCHOOL’S ENACTMENT OF AN ORGANIZATIONAL ROUTINE

Introduction

Schools are under increasing pressure from all sides to show improvement in student performance on standardized tests. In some districts across the country, district administrators have implemented initiatives that tie student promotion to performance on standardized tests. Some of these same districts have also tied school operating procedures to student test performance, taking over leadership of schools that consistently under perform on standardized tests. New federal policy, No Child Left Behind, uses standardized test results as one measure with which to judge schools’ progress. Schools who accept Reading First grants agree to administer a series of standardized tests as required documentation of progress in student learning. More and more we see examples of new policies that use student test performance on standardized tests to make critical school decisions on issues such as funding, attendance, and employment.

In this paper I use the distributed leadership framework to frame a qualitative case study of one school leadership’s response to a district policy of high stakes testing. In creating and implementing a routine in response to this external initiative, school leaders in this elementary school worked with teachers in an effort to improve instruction in order to increase test scores in math, reading, and writing. Organizational routines are a key mechanism through which leaders enact their practice. Because the work of organizations happens through routines, routines serve as an important way to understand the leadership practice of an organization. Through a case
study of the Five Week Assessment routine at Adams School from 2000-2003, I examine ways in which leadership practice in one elementary school is similar and different in math and language arts.

The Five Week Assessment routine, as designed, was similar in math and language arts. Both routines had common origins and goals, and they shared similar input and output components of a control organization (see Rowan, 1990 and Chapter 2). The enacted routines, however, were not the same in two distinct ways. First, the ways in which leaders used tools was static in math and dynamic in language arts. Secondly, the social networks between leaders and teachers that evolved around the language arts routine had more participants who talked more frequently than those in math. These differences were supported by leadership actions and priorities in the sense that leaders prioritized language arts activities over math. In some ways, leadership practice at Adams was consistent with epistemological differences in math and language arts. Through the tightly controlled pacing of a standardized textbook and a weakly supported routine, leaders at Adams enacted mathematics practice as linear and sequential. Leaders approached language arts, on the other hand, with more open-ended tools and practices. At Adams, raising student test scores was harder in reading than math. These differences in the enactment of the Five Week Assessment routine at Adams have implications for how teachers, leaders, and policy makers conceptualize subject matter differences.

Theoretical framework

I use the distributed leadership framework to study leadership practice. I focus on leadership activity, and consider not only the people involved in leadership, but also the tools that they use and the way that practice is stretched over leaders, followers, and elements of the
situation. In order to study the activity of leadership, I chose to focus this analysis on routines, as much of the work of organizations gets done in routines. I also consider the tools leaders used as they constructed the Five Week Assessment routine, the sources of those tools, and the social networks they built.

*Distributed leadership*

The distributed leadership framework borrows from Jean Lave’s (1991) notion of "stretched across,” suggesting that leadership is stretched across leaders, followers, and elements of the situation. Situation, as a construct, comes from socio-cultural work around context, the idea that we cannot fully understand practice without understanding the context within which that practice occurs.

This idea that leadership practice lies in the interaction between leaders, followers, and situation does not mean that leadership tasks are merely delegated to multiple people, although that is one aspect of distributed leadership. It also does not mean that we regard the principal’s role as non-critical, since that role is certainly an important aspect of school leadership. However, it pushes against this notion of considering only the individual, or the individuals, involved in leadership practice.

*Figure 10. Distributed leadership framework*
In this paper, I push on the socio-cultural notion of situation, considering situation as not only the artifacts of the context that surround the practice, but also interconnected with the leaders and the followers. Situation constitutes practice. Situation enables or constrains leadership practice, and that practice can change over time (Spillane & Sherer, 2004). Leadership practice happens in the interaction between leaders, followers, and elements of the situation (see Figure 10). In this paper I consider leadership practice by focusing on routines, and the interaction between that element of the situation and leaders.

**Routines**

Routines are an important part of the work that organizations do (Feldman, 2000; Feldman & Pentland, 2003; March, 1981; March & Simon, 1958). By routine I mean “a repetitive, recognizable pattern of interdependent actions, involving multiple actors,” (Feldman & Pentland, 2003, p. 311). While some theorists believe that routines have inertia which inhibits growth and change (Hannan & Freeman, 1984) others believe that routines are actually a source of flexibility and change (Feldman & Pentland, 2003). March highlights the need to look at both stability and change in an organization: "Changes in organizations depend on a few stable processes. Theories of change emphasize either the stability of the processes or the changes they produce, but a serious understanding of organizations requires attention to both," (March, 1981, p. 563). Routines have elements of both agency and structure (Bourdieu, 1977, 1990; Giddens, 1984). Much of the work of schools, like any other organization, happens in multiple routines. The enacted routine is based in part on each person’s individual power and agency within the routine, as well as other factors such as the perceived structure of the routine.

Feldman and Pentland view routines as having both *ostensive* and *performative* aspects,
based on Latour’s analysis of power (Latour, 1986). Latour believes that power exists both in principle and in practice. The power in principle is the ostensive aspect; the power in practice is the performative aspect. With routines, the *ostensive aspect* is the idea of the routine—“the ideal or schematic form of a routine. It is the abstract, generalized idea of the routine… the *performative aspect* of the routine consists of specific actions, by specific people, in specific places and times. It is the routine in practice,” (Feldman & Pentland, 2003, p. 101). The ostensive aspect acts as a script for the routine. The performative aspect is more explicit as it characterizes the routine in practice.

In order to carry out the activities of their work, leaders depend on a variety of tools. Tools are a critically important element of leadership practice. The study of tools and their use has increasingly come to the fore, as more scholars examine the importance of tools in leadership practice (Spillane, Halverson, Diamond, 2001, 2004; Halverson, Zoltners, Brown, 2000; Halverson, 2003). Many social theorists believe that learning takes place in the social interaction between people and tools in the context of their environment (Hutchins, 1991, 1995a, 1995b; Brown, Collins & Duguid, 1989). Anthropologists remind us that the tools of a culture embody its cultural beliefs. The construct of cultural tools is, therefore, given many definitions. For the purpose of this work, I borrow from Cole and Norman's constructs of artifact when I refer to the *tool* component of leadership practice. Cole prefers the more generic term artifact to the term "tool" that was used by the Russian socio-culturalists. He describes artifacts as fundamental constituents of culture and sees them as being both material and ideal. He sees artifacts as existing only in terms of something else--the context of the situation or activity, (Cole, 1996).
Cole’s notion aligns with the idea that leadership practice happens in the interaction, for instance, between the tools and the leaders. The tool does not stand alone, but lives in the interaction between the person using the tool and the context that surrounds that interaction. In this study, I vary slightly from Cole in that I focus primarily on tools that are material rather than ideal. Artifacts are externalized representations of ideas and intentions used by practitioners in their practice (Norman, 1988).

The origins of structures, routines, and tools vary (Halverson, 2003). Sometimes, schools design their own structures, routines, and tools from scratch. Other times, schools receive structures, routines and tools from external agencies or agents such as the local school district. Often structures, routines, and tools are inherited. For instance, when a new leadership team enters a school, they inherit the structures, routines, and tools of the previous administration.

Organizational change

The contingency theory of organizations proposes that organizational features vary depending on how well defined the task environment is. In environments where the tasks are well defined and not variable, a classical bureaucratic type of organization is more appropriate, whereas in organizations where the tasks are variable and not well defined, then a more participatory organization is more appropriate (Perrow, 1967). Brian Rowan (1990) takes up this idea in his work on the organizational design of schools. He describes two organizational designs: the commitment design and the control design. In the control model, teaching is viewed as a well-defined, non-variable activity. In response to this, leaders develop a standardized system of input, behavior, and output controls that constrain teacher’s methods and content decisions. This model involves curricular alignment. When teaching is viewed as a complex
technology, the commitment model seems more appropriate. Characteristics of a commitment model include teacher participation in decision-making, network structures of professional control, collegiality among teachers, and the development of community within the school. Rowan views these models as incompletely implemented in schools, although they work best when applied intensively.

Social networks

In addition to examining the tools and routines of leadership practice, I also look at the social networks that evolve between leaders and followers through their practice. In particular I am interested in how routines influence social networks. Leadership practice can be distributed in many ways; it can lie in the interaction between people and the tools that they use, or in the interactions between people. Leadership practice stretched across multiple individuals can take different forms. Sometimes people work in tandem toward the same goal, while other times the practice of one person depends on the completion of a task by someone else. This sequential interdependency is considered “coordinated leadership” (Spillane, Diamond, Sherer, Coldren, 2005), where leaders work separately or together on different leadership tasks that are arranged sequentially. Through this interdependency, social networks are formed. I consider the social networks that school leaders build around their work in math and language arts. Just as the tools used are important to their practice, so too are the connections between leaders and leaders, and leaders and followers. There is evidence that professional communities in schools improve classroom instruction and student learning (Louis, Kruse, & Bryk, 1995; McLaughlin & Talbert, 2001). If teachers are involved in professional community—that is, if they are connected through elements such as dialogue at a deep level between colleagues about practice, collaboration
beyond superficial support, support for the improvement of their teaching practice (Louis et al., 1995)—student learning improves. Because routines involve a variety of people, analyzing the social networks involved in the routines allows us to better understand how the work of the routines gets done.

Subject matter as context for practice

I consider instructional leadership practice, specifically in math and language arts. Shulman (1986) identified the need to consider the relationship between teachers’ cognitive understanding of subject matter and their practice. While many researchers see subject matter clearly as an important context for teachers' work (Ball & Lacy, 1984; Little, 1993; McLaughlin & Talbert, 1993; Siskin, 1990, 1991, 1994; Stodolsky & Grossman, 1995; Talbert, 1995), few look at subject matter as it pertains to elementary teachers. Much of the subject matter scholarship focuses primarily on the high school grades, where teachers’ practice is structured around subject matter constructs. Elementary teachers typically teach a variety of subjects, yet little research has been done to consider if and how a teacher’s method of teaching changes between subjects. The exception is Stodolsky’s (1988) work, which demonstrates how elementary teachers treat subject matter differently within their own classrooms. She looked at fifth grade classrooms and found that time allocations vary for subject areas, as do the patterns of activities teachers use in different subject areas.

While much of this work has focused on teaching practice, very little has examined leadership or the implications of subject matter on leadership practice. (For exception, see Burch & Spillane, 2003, 2005; Cobb & McClain, 2005; Knapp, Grossman, & Stodolsky; Spillane,
There is a disciplinary difference between math and language arts at the elementary school level that pushes us to conceptualize the foundations of math and language arts differently. Subject matter disciplines have different epistemologies, and this enables teachers and leaders to build their practice differently in response to those differences. Consequently, leaders must approach reform of these subject areas differently (Stein & D’Amico, 1999, 2002).

A look at these disciplines at the university level represents another way to consider the differences. Math is a single department and a single discipline. In contrast, language arts is made up of multiple departments and disciplines: linguistics, English, communications, etc. In schools, teachers refer to language arts as the class in which reading, writing, and speaking is taught. However, in the current and changing climate of education reform, language arts is seen as a discipline that has components that stretch across more than one class. In fact, one new wave of reform focuses on literacy across the disciplines, pushing every teacher to be a reading teacher.

Methodology

I analyzed day-to-day leadership practice, as it relates to an organizational routine, in an urban elementary school through a case study approach (Shulman, 1987; Stake, 1995; Erickson, 1986; Peshkin, 1993, Yin, 1994). I investigated leadership practice as it connects with instructional improvement in math and language arts. Using a constant comparative methodology with within-case sampling, (Glaser & Strauss, 1967; Miles & Huberman, 1994). I collected and analyzed data on comparable dimensions of math and language arts leadership within my case study school and sampled activities, processes, tools, people, roles, and times that
are theoretically driven by elements from my conceptual framework, as this is an important element of within-case sampling (Miles & Huberman, 1994).

**Data collection**

My work is embedded in a larger research project: The Distributed Leadership Study (DLS), a 5-year longitudinal study of elementary school leadership funded by the National Science Foundation and the Spencer Foundation. The research team conducted the 6-month pilot phase during the winter and spring of 1999. The first full year of data collection commenced in September 1999 and involved eight Chicago elementary schools as intensive case sites (an additional five schools served as interview only sites). For this study, I engaged in an intensive investigation of leadership practice in one elementary school. Data for this study was collected over five consecutive school years: 1999-2004. In the first year (1999-2000), my colleagues from the larger study collected pilot data. Over the next three school years (2000-2003), I spent an average of one day per week at the school. In the year following my intensive study (2003-2004), I visited school leaders for follow-up discussions.

Case study methodology pushes for the collection of multiple sources of data: documentation, archival records, direct observation, participant observation, and physical artifacts (Yin, 1994). Collecting a variety of data helps reduce the likelihood of misinterpretation—it allows for redundancy of data gathering and procedural challenges to explanations (Stake, 1995). The study I set out to do focused on understanding how leadership

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27 I began studying Adams School in September, 2000. Prior to 2000, Richard Halverson and several of our colleagues (Lisa Walker, Lauren Banks, Baylen Linnekin) collected data at Adams School as well. Therefore, we have data for Adams School that has been collected over the span of five consecutive school years, spanning six calendar years, 1999-2004.
practice was enacted at the school in different subject areas. I began by looking at math, science, and language arts, but quickly dropped science as there was little to observe around science leadership practice. The high stakes testing mandated by the district in math and reading left science out as a priority. I collected a variety of data types in an effort to capture as complete a picture as possible of these complex leadership routines: leader shadows, formal and informal interviews, meeting observations, and informal observations captured in field notes. (See Table 10.)

Table 10.

<table>
<thead>
<tr>
<th></th>
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<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Formal leader interviews</td>
<td>5</td>
<td>8</td>
<td>21</td>
<td>12</td>
</tr>
<tr>
<td>Informal leader interviews</td>
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<td>10</td>
<td>8</td>
<td>5</td>
</tr>
<tr>
<td>Formal teacher interviews</td>
<td>6</td>
<td>9</td>
<td>15</td>
<td>9</td>
</tr>
<tr>
<td>Informal teacher interviews</td>
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<td>1</td>
<td>23</td>
<td>3</td>
</tr>
<tr>
<td>Leader shadows</td>
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<td>7</td>
<td>0</td>
</tr>
<tr>
<td>Field notes</td>
<td>0</td>
<td>7</td>
<td>42</td>
<td>8</td>
</tr>
<tr>
<td>Meeting observations</td>
<td>5</td>
<td>9</td>
<td>28</td>
<td>9</td>
</tr>
<tr>
<td>Network survey</td>
<td>--</td>
<td>--</td>
<td>XX</td>
<td>--</td>
</tr>
<tr>
<td>Test score data</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Various artifacts</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

**Leader shadows**

Shadowing a leader throughout her day provides a good opportunity to document the performative aspect of a routine. Leader shadows also provide a view into the tools leaders use.
From 2000-2003, I formally shadowed leaders 10 times. In that time, I informally shadowed the literacy coordinators approximately once a week.  

Meetings

Meetings are one of the most tangible ways that leadership practice can be observed. They are a good place to observe leadership in practice, as well as to watch the interactions between leaders and followers. While the meetings I observed were not always directly connected with the Five Week Assessment routine, many of them provided an opportunity to better understand relevant elements of leadership practice. I observed a total of 46 meetings from 2000-2003.

Interviews

Interviews are a critical way to uncover multiple facets within a case study (Stake, 1995.) In addition, interviews are effective ways to get at what leaders think they do, as well as identify the individuals that teachers and leaders consider leaders. Interviews are also important venues for learning about the people. They act as a critical place for leaders to voice the ostensive aspect of the routine. Meetings do this too, particularly kick-off-the-year meetings. I collected a total of 20 formal interviews of administrators (principal, assistant principals), 13 formal interviews with the literacy coordinators, seven formal interviews with the literacy coordinator and math coordinator’s assistants, and 42 formal interviews of teacher leaders. I also collected frequent informal interviews related to subject matter issues.

28 I used the literacy coordinator’s office as my home base, spending time in between meetings, interviews, and other observations in her office. For this reason, I informally observed literacy coordinator practice on a regular basis. These informal observations are recorded as field notes.
Network surveys

In the spring of 2002 I collected a social network survey from the faculty. In this survey, teachers and leaders identified what tools and people they used in their math and reading practice. These data create a school-wide picture of social connections and tool use that school personnel identified within their own practice.

Informal observations

Finally, the nuances of leadership are often found in the in-between places of the school day. For this reason, fieldnotes serve as a valuable data type—capturing observations and snippets of conversations caught in the hallways, after meetings, before school, and in various offices and public spaces.

The data collection process has been iterative. As I found evidence of leadership activity that was relevant to the Five Week Assessment routine, based on formal interviews or informal chats with people, I periodically widened, narrowed, or shifted my data collection net. My purpose for collecting this variety of data, across time, was to gain a better understanding of leadership practice at this school. The data capture the activity of leadership practice across several leadership teams/eras. Information about the tools used and the people involved is also captured in the data collected.

Data analysis

My first challenge was to define the ostensive and performative aspects of the Five Week Assessment routine. I began by identifying the leaders involved in the routine and the roles they each played. Because the routines changed across time, I also had to define the ostensive and performative aspects of the routines as they changed. In order to capture the ostensive aspect of
the routine, I used interview data from leaders and teachers as well as beginning of the year meetings (or “beginning of an era” meetings) in which leaders announced their expectations around the Five Week Assessment routine. I triangulated this with a school leader’s presentation of the routine to visitors. I analyzed my observation data (leader shadows, teacher observations, informal observations) to identify the performative elements of the routines. Here again I used interview data to triangulate. There are critical moments in interviews when leaders talk of how the routine changes which can then be confirmed—or refuted— with observation data.

I systematically coded all interviews (leader and teacher; formal and informal), leader shadows, fieldnotes, and meeting data for evidence of the Five Week Assessment routine. In all I coded 85 formal interviews, 50 informal leader interviews, 10 leader shadows, 57 days of fieldnotes, and 46 meeting observations.

First, I content coded all data for evidence of the Five Week Assessment routine in math and language arts. In this way I was able to define the routines and identify patterns that characterized each routine. I looked at how and where the routine emerged in the work of school and the practice of leaders and teachers. I found evidence of the routine consistently framing the leader talk, leader activity, and follower activity.

I then created a content code for each piece of evidence of the routine. I looked for patterns across these content codes, using my theoretical framework as a guide to inform new chunks. These codes include roles, tools, and social networks. I created a vignette of a second grade teacher’s experience in one school year—2001-02—through the lens of the routine. The vignette is based on interview and observation data. I use this vignette as a concrete way to represent patterns I found in my larger analysis.
Leadership practice is enacted through organizational routines. In 1989 a new principal, Dr. Williams, took over a struggling Adams Elementary, a K-8 inner-city public school in a large, midwestern city. From 2000-2003 it served between 900 and 1200 students who were predominantly African American (99%) and poor (97% qualify for free or reduced lunch) with a high mobility rate (35%). When Dr. Williams arrived at Adams, the staff—housed in two buildings—was fragmented. Many teachers had fallen into a pattern of shutting their doors and teaching in isolation, with little to no connection with colleagues. Standardized test scores were low in math and reading. In the face of these challenges, Dr. Williams set out to improve test scores and build a collaborative faculty. This charismatic new leader built and sold her instructional vision through a series of new, interconnected routines. With the assistance of Ms. Tracy—a former colleague with literacy expertise whom she hired to act as her literacy coordinator, Dr. Williams built a series of routines that included the Five Week Assessment, Breakfast Club, Teacher Talk, and Literacy Committee meetings.

- **Breakfast Club.** A series of monthly morning meetings, often led by teachers, to discuss recent research. Teachers discussed journal articles together (primarily literacy related) as they ate breakfast provided by Dr. Williams.

- **Teacher Leader.** The faculty voted to lengthen the school days so they could have a monthly half-day for professional development sessions. Instead of bringing in outside “expertise” to lead these professional development meetings, Dr. Williams tapped into the strengths of her faculty, and the teachers taught each other in these Teacher Leader sessions.
• **Content Focused Groups.** Two smaller groups—the Literacy Committee and the Math Team—met to plan language arts and math activities, discuss classroom practice, and reflect on progress made and desired.

• **Five Week Assessment** was the one routine that directly connected to the standardized testing. Every five weeks students were assessed in reading, writing, and math. The assessments provided an opportunity for students to gain practice with test taking. The assessments also provided an opportunity for leaders to get the pulse of the school, looking at these student data to identify strengths and weaknesses. Leaders used this information to plan various leadership tasks, including topics for Breakfast Club and Teacher Leader meetings. The routine also provided formative assessment data that the teachers could then use to improve their instruction.

While leaders designed these routines to be interdependent, each was able to function without the others. However, the routines in practice often informed each other. For example, needs that were identified through the student assessment data in the Five Week Assessment routine informed the focus of upcoming content focused meetings or professional development sessions. These routines are intended to improve student learning in reading, writing, and math through focused assessments, teacher empowerment, internal professional development, and multiple opportunities for teachers to talk about research and practice. While the Breakfast Club focused primarily on language arts, the other routines were designed to support instruction in both math and language arts.

In the 1990’s, the district implemented a high stakes testing initiative at grades 3, 6, and 8 in math and reading. Students at those grades were promoted to the next grade only upon scoring at a certain level on the Iowa Test for Basic Skills (ITBS) in math and reading. The schools were
also judged on student performance in reading, writing and math. Underperforming schools were put on probation, and eventually reconstituted. This initiative was modified several years after implementation (Roderick & Nagaoka, 2004), but the overall response of city schools was to increase their focus on improving test scores. Adams was no exception. The ways in which school leaders reacted to this focus differed. In the late 1990’s, the district had also implemented the Illinois Standard Achievement Test (ISAT), a test that included writing as well as higher order thinking skills in reading and math (Easton et al., 2003). In this paper I discuss one routine that the leaders at Adams set up in order to respond to this high stakes testing pressure.

Designed routine

Common origins

Leaders designed the Five Week Assessment routine in math and language arts to be similar in origin, purpose, and goal. They developed the routine to provide students with test practice and teachers and leaders with data to answer the question, “Are the children learning? How do you know?” School leaders observed that while their teachers were working hard, they were not necessarily working smart. In response to a Quality Review Team visit in 1996, Dr. Williams and Ms. Tracy generated the above questions to guide instructional practice. The Five Week Assessment routine was one way to get answers. In the routine, all students in grades 1-8 took an assessment in math, reading, and writing every five weeks. The data from these assessments was intended to give leaders a regular snapshot of where the students were in their learning and understanding. The school leaders built this routine in math and language arts with

29 The Quality Review Team was made up of people from all over the state, including Board of Education employees, teachers, and administrators.
the same goals in mind: they wanted to know if their students were learning\(^{30}\) and they wanted improved student learning (as indicated by performance on standardized tests). Dr. Williams and Ms. Tracy identify the goals of the routine as follows,

> I think that they (teachers) finally began to look at the assessment as a tool for letting them know what they need to work on in the classroom. That was the goal... It was the test scores and the reporting of the test scores that was the big motivation. (Principal, 2000)

> We (the principal and I) were just discussing our school, what was taking place, and what would help the children achieve at a higher level. We were talking about teachers, and we were just kind of casually saying that for the majority of our teachers they all work very hard. But some of them get very low results when it comes to these achievement tests. And we were trying to figure out why, and we decided that they were working hard, most of them, but they were not working smart. From there we decided not to ask anymore are the teachers working, but are the children learning? So this was a way to find out, are they learning? (Literacy Coordinator, 2000)

**Language arts Five Week Assessment routine**

The routine involved a five-week cycle. In order to identify the designed aspect of the routine (see Table 3), I gleaned details from the ways in which leaders talk about the routine. Ms. Tracy describes her first step in the routine, “OK, well, we look at the standards, the Illinois Standards and the city standards and goals. And we look at what they want the children to accomplish for the year. And then I kind of back up from that and set up a testing program that matches that,” (Literacy Coordinator, 2000). She used artifacts to help her determine what the students should learn. Ms. Tracy then created a schedule for the assessments and wrote the actual assessments that were distributed to students. “First there’s a selection of tests and it’s not done haphazardly. I actually read and consider what I want the students to be able to pull out of the story because I have to make sure it’s there for each grade level,” (Literacy Coordinator, 2000).

\(^{30}\) Because of high student mobility rates, the assessment data served as a snapshot of students who were currently in the school.
Three years later, a new literacy coordinator, Ms. Kelly, described this same needs-analysis step. She used a slightly different tool to guide her assessment design: “I gather the Five Week Assessments, and they’re all basically based on the ISAT tests,” (Literacy Coordinator, 2002). In both cases, the literacy coordinator used external artifacts—standards and standardized tests—to develop the assessment plan. Every five weeks the literacy coordinator and her assistant distributed the assessments. Once the teachers had given the assessments, they returned them to the literacy coordinator and her assistant who scored the assessments, and then compiled and analyzed the data.

In the first year of the routine, the literacy coordinator shared the results with the principal. They noted that there was no difference in student performance as compared with the previous year, before the routine was enacted. They realized they did not have follow-up conferences with the teachers to discuss data results. “What was missing was we didn’t find time for the teachers to talk about the results of the Five-Week Assessment,” Dr. Williams noted (Principal, 2000). They realized that this feedback loop was crucial, and they added that to the designed routine.

Math Five Week Assessment routine

The school leaders created the same Five Week Assessment routine in math to mirror the language arts routine, though the leaders were different. In the late 1990’s, the math coordinator at Adams ran the routine in a similar way to the literacy coordinator. According to her assistant, the math coordinator selected, copied, and distributed the assessments, collecting and compiling scores at the end of each five-week cycle. While she did not have in place a feedback loop to teachers for math results, she did meet with the principal to discuss math results and develop a
math plan for each year. When she left the school in the fall of 2000, the principal appointed four 
teachers to the Math Team to take over responsibility for the math Five Week Assessment 
routine. While the routine was no longer centralized around one person, the principal expected 
the Math Team, with the help of the math assistant, to take over the tasks of the routine. She 
explains,

They (the Math Team) will help with the assessments. (I have) a teacher assistant who 
helps with some of the paperwork… But what we do is if there’s a need to free (Math 
Team) teachers up, I do that. We budget with sub money so that I can free them up or, 
you know, they’ve had some meetings after school. So we just have to be more flexible 
with the design for them. (Principal, 2001)

School leaders designed the math and language Five Week Assessment routines to be 
parallel routines. Below is the ostensive aspect of the Five Week Assessment routine, as gleaned 
from interview data.

Table 11.

<table>
<thead>
<tr>
<th>Step 1</th>
<th>Identify needs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 2</td>
<td>Plan Five Week Assessment Routine.</td>
</tr>
<tr>
<td>Step 3</td>
<td>Develop assessments.</td>
</tr>
<tr>
<td>Step 4</td>
<td>Copy and distribute assessments.</td>
</tr>
<tr>
<td>Step 5</td>
<td>Administer and return assessments.</td>
</tr>
<tr>
<td>Step 6</td>
<td>Score assessments.</td>
</tr>
<tr>
<td>Step 7</td>
<td>Compile and analyze scores.</td>
</tr>
<tr>
<td>Step 8</td>
<td>Share scores and identify needs.</td>
</tr>
</tbody>
</table>

As designed, the cycle repeated every five weeks throughout the school year. Leaders typically 
enacted steps 1 and 2 before the beginning of each school year while they integrated steps 3-8 
roughly every five weeks throughout the year.
A control organization is characterized by Rowan as “a standardized system (with) clear input, behavior, and output controls that constrain teachers’ methods and content decisions, control student access to content, and assure exposure to a standardized quality of instruction,” (Rowan, 1990, p. 358). In some ways the Five Week Assessment routine, as designed, is characteristic of a control organization in that it has inputs and outputs. In the case of Adams, input controls include standardized tests, standards, pacing guides, and topic lists. As stated earlier, the literacy coordinators used standards and standardized tests to frame their design of the assessments. Additionally, leaders at Adams created pacing guides in math and topic lists in language arts that defined the content of each Five Week Assessment. See Table 12 for examples.

Table 12.

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Date</th>
<th>Math (2nd grade)</th>
<th>Literacy (2nd grade)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 Week assessment</td>
<td>September</td>
<td>ITBS practice test</td>
<td>ISAT practice test</td>
</tr>
<tr>
<td>10 Week assessment</td>
<td>October</td>
<td>Chapter 1-3 cumulative test</td>
<td>Graphic organizers</td>
</tr>
<tr>
<td>15 Week assessment</td>
<td>December</td>
<td>Chapters 4-6 cumulative test</td>
<td>Reading comprehension</td>
</tr>
<tr>
<td>20 Week assessment</td>
<td>January</td>
<td>Chapter 7-9 cumulative test</td>
<td>Reading comprehension</td>
</tr>
</tbody>
</table>

At the beginning of the school year leaders distributed an item-analysis of the high-stakes standardized test (ITBS) in math and reading to teachers. This item-analysis was to be used by teachers to drive classroom instruction. The principal explained the document at one of the “back-to-school” all-faculty meetings,
This is a breakdown of the IOWA test skills analysis. We took it a step further… It is a breakdown of the percentage of questions that are being asked in every tested area. We took it a step further and we not only gave you the percentage, but we actually gave you the number of questions that are being asked in each testing area. And this is reading through science through social studies, all of the four major areas—reading, math, science, and social studies. It’s right here! It has been broken down the same exact way. So you may want to use this to help guide your planning so that we don’t have to wait up until test time to start planning and teaching test taking techniques and skills and all of those things. If we do it from the beginning, in April or May, or whenever those tests are given, our children should have a pretty good handle on what is expected of them. (Principal, 2001)

The output controls in the Five Week Assessment routine are the assessments given each five weeks within the routine and the annual standardized tests. While the behavior controls connected to the Five Week Assessment routine are not as clear at Adams as in a traditional bureaucratic control organization, there was professional development at Adams in math and language arts that served, in some form, this behavior control function. Teacher Leader sessions often involved professional development in reading, writing, math, or general teaching strategies.

The leaders’ intention for the Five Week Assessment routine was to get regular snapshots of student learning, respond with relevant professional development and resource support, and improve student scores on high-stakes standardized tests. While the goal, frequency, and purpose of the Five Week Assessment routine was the same in math and language arts, the ways in which the routine was enacted—and the influence that enactment had on instructional practice—varied.

The routine in practice

The vignette that follows is a snapshot of the Five Week Assessment routine as seen through the lens of one teacher’s practice. I use this vignette as a springboard for my analysis of differences in the math and language arts routines.
Ms. Matthews—A vignette

In the fall of 2001, Ms. Matthews—a second grade teacher at Adams School in her 3rd year of teaching—is the math leader on her five member second grade team. As second grade math lead, she is responsible for creating the math lesson plans for second grade, and she acts as a math resource for her teammates.

I do all of the math lesson plans for the grade level. We meet as a grade level every Thursday to exchange lesson plans and talk about the up-coming week, but I do my lesson plans way in advance. Right now I have mine done through October, so I just give it to them when I finish them. (Teacher, 2001)

She attends the first two days of all-faculty “back-to-school” meetings in late August. At these meetings, various school leaders speak about logistical issues (introduction of new teachers and new roles, attendance, school rules, etc.) as well as issues relating to instruction. The instructional issues include the principal’s report of the standardized test results from the previous spring (test scores in reading and math have gone down), a brief explanation of the item-analysis of that test (a document passed out which is expected to drive classroom instruction in reading and math) (see previous quote), and a report by the new literacy coordinator, Ms. Walsh, which involves her explanation of a change she plans to make to the Five Week Assessment routine in language arts: scoring for the student writing will be sampled this year. (In past years every student’s writing piece had been scored for every cycle of the routine.)

All right, everything else is basically the same. There’s one more component, writing. Anybody work on the literacy team in the last two years? About how many writing papers did you grade at one time? 100, 150. This will not be so this year. What we’re going to do is take a random sample. You’ll be given the writing prompt and the kids ought to do the writing prompt by a certain day. You will receive a list later that will say, ‘Please send us Johnny, Joseph, Mary, and Sue’s writing prompt.’ So that means everyone (on the literacy committee) will get one from each classroom… each member
on the literacy committee with grade about 20 papers instead of the usual 150. (Literacy Coordinator, 2001)

The new literacy coordinator also tells them to expect an ISAT practice test in reading and writing as the first assessment in Five Week Assessment routine.

On the morning of the third day of “back-to-school” meetings, Ms. Matthews attends a meeting for math teachers in the 8th grade teacher’s room of Ms. Jones. Because the 4-8th grade classrooms are housed in the building south of Ms. Matthews’ K-3 building, Ms. Matthews rarely has the opportunity to come to Ms. Jones’ room. As math leader, Ms. Jones speaks to the math teachers for an hour, explaining the handouts that she and her Math Team colleagues (three other full time classroom teachers) created during summer meetings. In this meeting, Ms. Matthews hears about the changes to the Five Week Assessment routine in math. Ms. Jones explains how teachers are expected to follow the pacing guide for their grade level. This sets a time line for how Ms. Matthews is to teach the second grade textbook. Every five weeks she will be expected to give her students a designated assessment from the textbook and to report the scores back to the Math Team. Additionally, as a result of poor student performance on the problem-solving component of the ISAT, the math team has added a problem-solving component to the Five Week Assessment routine for the year. The ISAT is a test that teachers and leaders at Adams identify as more difficult for their students because of the problem solving components.31 Ms. Jones explains, “The ISAT is more critical thinking and Iowa is more computation,” (Math Leader, 2003). Ms. Jones asks the teachers to turn these problems into the Math Team, who will collaboratively score them.

31 Research also says that the Iowa Test of Basic Skills tests more skills and less higher-level thinking problems than the Illinois Standard Achievement Test (Easton, et al., 2003).
We found out that the ISAT benchmark grades are third, fifth and eighth, and we work on problem solving but the other teachers do not. Everybody is going to be held accountable for those now. We’re going to give you a problem solving every five weeks. It says at the bottom, ‘Grades three through eight—an open ended problem-solving problem will be given every five weeks.’ You have to turn those in. A team will be formed to grade these. We’ll work together to grade these and get them back to you. We’re going to go over that. (Math Leader, 2001)

It is early on an October morning, and Ms. Matthews is the first teacher to arrive in the K-3 building. She finishes scoring a pile of math papers, and then she writes the morning work on the board, which consists of several math problems. She explains, “For morning work, essentially they (the students) come in and get settled and they’re working on some sort of sentences. But my overhead is broken, and the writing gets too long on the board, so I just substitute math problems,” (Teacher, 2001). When her colleague across the hall, who also teaches second grade, arrives, they discuss reading instruction. Ms. Manny shares with Ms. Matthews what she did with her students the day before, and makes recommendations to Ms. Matthews, who is introducing the story today. Ms. Matthews plans to introduce her students to graphic organizers, and she asks for Ms. Manny’s help in deciding which graphic organizer will go best with the story she plans to read with her students. She gives Ms. Manny the math lesson plans for next week and leaves to pass them out to her other second grade colleagues. She describes later, “We (the second grade team) haven’t really (met about math) yet… I think they pretty much, it’s pretty easy. I just follow the book. I do an activity with (the students) to start out like to warm them up. And then you go in and do the page together and then they do it on their own for practice,” (Teacher, 2001).

Before her students arrive, Ms. Matthews goes downstairs to the office to check her mailbox. In her box is an article for the next Breakfast Club meeting, an article about teaching reading by Timothy Shanahan. The following day, half the faculty voluntarily attends this
breakfast meeting in which the teachers discuss Mr. Shanahan’s findings as they relate to their own classroom practice.

Around Thanksgiving Ms. Kelly, a friend of Ms. Matthews’ from college, comes into her room and tells her the principal has asked her, Ms. Kelly, to move out of the fifth grade teaching position to become the new literacy coordinator. They discuss how nice it will be for Ms. Kelly to have this new position. Ms. Matthews remarks that now they will see each other more since the literacy coordinator’s office is across the hall from her classroom.

In January, Ms. Matthews leaves her students with her teaching assistant and a substitute and walks to the other building with Ms. Manny. They talk about their ideas for teaching persuasive writing and Ms. Smithman, a second grade colleague, joins them to share ideas for writing prompts and writing lessons she and Ms. Kelly have recently discussed. They arrive at the meeting room and join their other second grade colleagues, the literacy coordinator, and the principal. For the next hour, they look over graphs of the most recent five-week assessment data in reading and writing. Each teacher gets her own classroom scores, the second grade scores, and the school’s scores. Ms. Kelly reminds them of the purpose and goal of the routine, and they spend the rest of the time discussing how to help their students become better readers and writers. The principal reminds them to use the item analysis to drive instruction,

Let me just give each one of you these. And this is certainly very useful for second grade. You received this earlier, as a matter of fact, the first day of school. What this is, is a skills analysis break down of the Iowa test. It gives you the number, the percentage of questions that are being asked in every area. It also breaks it down to give you the exact number of questions that are being asked in each one of these particular areas for the Iowa test. So this may be very useful for you in your instruction and your planning, as to what it is we kind of need to be focusing on, with the students. And this is nothing different from what you've been doing all the time, but this will probably help keep (your teaching) a little more focused. (Principal, 2002)
After the next five-week assessment cycle, Ms. Kelly calls the second grade team together for a before-school meeting. She wants the second grade teachers to step it up in their writing instruction, as their students are very behind. They are still writing one or two paragraph papers, while the second grade students at another public school she recently visited were writing five paragraph essays. The literacy coordinator is convinced that their students can do better, and having them do so will take the pressure off of the third grade teachers (whose students are at a benchmark year). If the second grade teachers do a better job of pushing their students in writing, then more third grade students will achieve passing scores in writing. Ms. Kelly passes out two documents she has created: the first document has suggestions for teaching a three-paragraph essay and the other document details important elements of persuasive writing.

On her way out, Ms. Matthews stops to talk to the primary librarian, who just stopped by the literacy coordinator’s office. They make a plan for Ms. Matthews to bring her students down for extra time to get reading materials for their planet study. They quickly brainstorm what kind of text is appropriate, and then Ms. Matthews leaves to start her morning with her students.

In February, the first grade teacher and Math Team member, Ms. Brown, hands Ms. Matthews the math assessments she has run off for the next Five Week Assessment. Ms. Matthews comments she will have to hurry up and finish the chapter she just introduced to her students as this particular assessment is the cumulative test at the end of that chapter. While she is in her classroom, Ms. Brown asks Ms. Matthews to replace Ms. Sunny on the Math Team. In November, Ms. Sunny quit the team to focus on reading instruction. She and her teaching partner decided to go back to self-contained classrooms, and since Ms. Sunny had not taught reading for several years, she felt like she needed to shift her focus away from school-wide math towards reading in her own classroom.
It was (sighs) a big huge transition. And like I said, I’ve started doing reading and I haven’t done reading in a long time…I don’t have a system anymore…I just couldn’t do it (be a member of the Math Team) anymore. I lost my focus—after I had to start doing reading, I had to focus so much on how to reach (my students) in reading that I felt like I could only focus on math for that classroom. I couldn’t focus on the school and what everybody else was trying to do. I just had to focus on my classroom. (Teacher, 2002)

Ms. Matthews agreed to take Ms. Sunny’s place after Ms. Brown described what her responsibilities would be as a Math Team member. She was to attend after school math workshops several times throughout the year and help Ms. Brown bring those activities back to the teachers via Teacher Leader sessions. Aside from the math meetings, and the one Teacher Leader session they will co-lead in March, Ms. Matthews did not take on any additional tasks related to math. As she is leaving, Ms. Brown reminds Ms. Matthews to give her math scores to Ms. Smith (the literacy coordinator’s assistant) who will enter them into the record-keeping program. Ms. Brown does not explain what happens to those scores, and Ms. Matthews does not ask.

In late February, Ms. Matthews quickly stops by Ms. Brown’s room to give her the agenda she had typed up based on their plan for the Teacher Leader they will lead that afternoon. Ms. Brown tells her that the principal has planned an all-faculty meeting following lunch, so they will have one hour less than they had planned. They decide which activities to cut out, and Ms. Matthews goes back to her classroom. Later that day they lead the pre-K—3rd grade teachers through a series of math problems that they had solved in a math workshop through their work with the Local University’s Teacher’s Math Project.

Differences: Dynamic and static uses of tools

The vignette highlights several important similarities and differences in the ways in which leaders and teachers enacted the Five Week Assessment routine in math and language arts
at Adams School. Leadership practice is in the interactions between leaders, followers, and elements of the situation. One important aspect of the distributed leadership frame is that the tools leaders use are a critical component of leadership practice. In this section I consider tools, and the ways in which leaders use similar tools differently in math and language arts. Specifically, I discuss differences in the routines through the lens of a control organization (inputs, outputs, and behavior controls). I then analyze how these differences had an impact on leadership practice in math and language arts at Adams School.

**Input controls**

The inputs in the math and language arts routines are quite similar. In both math and language arts, teachers have curricular materials, pacing guides (math) and topic lists (language arts), standards, and the ITBS item-analysis.\(^{32}\) Despite the similarities in these input controls, teachers and leaders used them differently in math and language arts.

In math, the teachers used a standardized set of curricular materials while in language arts they used a variety of resources. The teachers’ and leaders’ dependence on the textbook may be a result of past success in using the textbook. In the mid-1990’s school leaders adopted new math and language arts textbooks. While reading scores did not improve as a result of this textbook adoption, math scores did. Ms. Matthews designed grade-level math lesson plans that directly followed the textbook. Her opinion that these lesson plans were straightforward and did not warrant grade level discussion indicates that math instruction at Adams is straightforward and largely dependent on the textbook. In language arts, her practice was different. Literacy leaders

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\(^{32}\) I have insufficient data to describe how teachers used the item analysis and standards to guide their instruction.
like her grade level colleague and the literacy coordinator sought her out in free moments and grade level meetings to discuss language arts lesson plans and strategies. Across the school, leaders provided teachers with a range of different materials with which to teach reading and writing. For instance, some third grade teachers utilized a highly structured phonics program, Metro, while their colleagues used stories from Harcourt Brace and created research projects on animals and the solar system that they crafted in collaboration with the librarian.

Teachers used the pacing guide in math as a static tool, whereas they used the topic list in language arts as a more flexible, dynamic tool. Math leaders are clear that the teachers must stick to the schedule. They worked carefully to design a schedule that took into account holidays and built into each five-week cycle extra teaching days. For this reason, there is no excuse for teachers to be behind schedule. Ms. Jones explains,

First of all, (teachers need to) get focused on that timeframe that we set up because a lot of teachers are not following that timeframe. And like I told them well we can’t do that. … when we first met after the first five weeks, one teacher said she was only done – now you should be done with chapters one through four—she was only done with chapter one. Come on now. In five weeks? No, that’s not acceptable to me. But you know, these – some of them (the teachers) have low expectations for these (students) – “well these kids can’t do and they’re – and I don’t want to push.” Yes, you have to push these kids and tell them what they’re capable of doing. People have been telling them so long what they can’t do, tell them what they can do. And then if you’re going with them, you’re going down to their level instead of bringing them up to your level. (Math Leader, 2002)

In some ways, the rigidity of this pacing schedule creates a situation in which the teachers are teaching the material, and not the students. Teachers must balance the rigidity of the math leaders’ demands, as reified in the pacing guide, with skills their students come in with, teacher expectations, etc. In math, the input control is clear and well defined. The teachers all followed the same textbook, using the pacing guide written by the Math Team to direct their teaching. When they fell behind, they were expected by the math leadership to give the scheduled
assessment anyway, even if they had not covered all of the material. In language arts, the topic list is less rigidly defined and was not always followed. The topic list is more broadly defined (“reading comprehension” vs. chapters 1-3 of a textbook) and leaves more room for teacher interpretation and choice of instructional materials. (See Appendix D.) This can be seen in the diversity of materials Ms. Matthews drew from in her language arts teaching—ideas from her colleagues for writing prompts and graphic organizers, a project she created with the librarian, etc. The topic list was created by the literacy coordinator at the beginning of the year, but there are times when it changed. One example of this is when the teachers voted, in an October (2000) literacy committee meeting, on what the focus for the next five weeks should be in reading, based on current student needs. This flexibility is not consistent; at times the topic list drives the content for each reading and writing cycle. Though inconsistent, the input controls in language arts allowed teachers to use them in more dynamic ways, responsive to the needs of students and teachers. Conversely, in math leaders built input controls that were more directive and teachers used them in more rigid ways.

Output controls

The output controls, by design, were similar in the math and language arts routines. Data from the five-week assessments gave leaders a snapshot of school-wide student performance in math, reading, and writing. This allowed them to design their professional development and allocate resources into areas of greatest need. Leaders could also feed back the data to teachers to use as formative assessment as they design the focus of their classroom instruction in math, reading, and writing. In practice, the use of these data varied widely. From time to time, the
literacy leaders used the assessment data to improve instruction. However, these data were never used in this way in the math routine.

An important component of the routine is the feedback loop; assessment information collected every five weeks was intended to inform instruction. In order for the teachers to use this formative data, someone had to compile and analyze the data. This task was designed into the routine as a leader responsibility, and the leaders did, in most cases, collect the scores. But they were inconsistent in analyzing and disseminating that analysis to teachers. In some cases, the literacy coordinator and her assistant compiled the scores and discussed them with the principal, assistant principals, and the teachers in various formats: written memos, grade level meetings, and individual conferences with teachers. Other times, the reading and writing scores were collected and not analyzed. Reasons for this include a logistical inability for the literacy coordinator and her assistant to score and analyze the scores in a timely manner, and an inability to create time to meet with teachers to give feedback. Both stumbling blocks were resource issues commonly found in schools: a lack of time and money.

The scores in math were, at times, collected. In 2001-02, the literacy coordinator’s assistant entered the math scores into a computer program. In 2002-03, a math leader in the K-3 building (Ms. Brown) compiled—by hand—all of the student scores for grades 1-3. Ms. Brown spent some time alone analyzing the data, but I found no evidence of feedback of these data to math teachers from 2000-2003. This absence is noticeable in the vignette, as it was not a part of Ms. Matthews’ interactions with Ms. Brown, nor was it part of her (explicit) duty as a Math Team member.
Behavior controls

As defined by Rowan, behavior controls in traditional control organizations include in-service training for effective teaching practices and formal evaluation tied to how frequently teachers implement these effective practices, (Rowan, 1990). A common form of behavior control is a “Walk Around” or a walk through. These typically involve a small team of teachers and leaders informally dropping into classrooms for short visits. While Ms. Kelly describes her reading team and their intention to do periodic walk throughs, they do not yet made a decision on how they are going to provide coverage in order to include teachers on the walk through. While the principal did formal evaluations of her classrooms, these were infrequent and general. There were no formal behavior controls specifically tied to the Five Week Assessment routine in either math or language arts.

There is, however, evidence of some informal behavior control tied to the Five Week Assessment routine. In math professional development sessions at Adams, math leaders told teachers how to teach in two ways: leaders walked teachers through sample lessons and leaders told teachers what they did in their own classrooms. Discourse analysis of math meetings indicates math leaders predominantly spoke about monitoring the improvement effort, resources, what they do in their classrooms, and inviting others to speak, while math teachers primarily asked clarifying questions. I have little evidence of math teachers at Adams talking about ideas, identifying problems and developing solutions to those problems, or collaborating around math practice in ways they did in language arts. Therefore, math Teacher Leader sessions often looked like math teacher leaders telling other math teachers how to teach math.

Conversely, professional development sessions in language arts took various forms. Monthly Breakfast Club meetings provided teachers with the opportunity to talk about reading
instruction through the lens of recent research. Language arts meetings provided teachers with opportunities to learn new strategies and also talk about their own ideas, problems, and solutions. Discourse analysis of language arts meetings shows that, unlike in math, leaders presented broad vision, offered strategies in response to teachers’ self-identified needs, offered expertise and resources, and encouraged collaboration. Teachers identified needs, goals, and strategies; and shared their classroom practice. While professional development in language arts had some elements of leaders telling teachers how to teach, there was more discussion and dialogue about reading instruction than math instruction. See Table 13.

Table 13.

<table>
<thead>
<tr>
<th>Nature of Speech, Ranked by Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leader talk at language arts meetings</td>
</tr>
<tr>
<td>Academic Press</td>
</tr>
<tr>
<td>Broad vision</td>
</tr>
</tbody>
</table>

Professional development at Adams is its own routine, Teacher Leader, which is connected to teaching and learning, and is thus connected to the Five Week Assessment routine, but not always directly. I have no evidence of math meetings in which leaders and/or teachers discussed five-week assessment data. In the meetings in which leaders and teachers discuss reading and writing data, an interesting form of behavior control happened. The sharing of classroom, grade-level, and school-wide data put pressure on teachers in underperforming classrooms and grade levels to improve student learning. And while this is not directly a behavior control, assessment data from the routine can be indirectly used by leaders to serve as a
behavior control. While assessment data can be seen as an output control, the way that Ms. Kelly used writing data serves as an example of how it was also used as a behavior control.

When Ms. Kelly became literacy coordinator in December 2001, she and her assistant began to read each piece of student writing. They would give students feedback on their writing, and Ms. Kelly would write a note to each teacher with feedback on patterns of strengths and weaknesses in their students’ writing, as well as recommendations for improvement. When particular teachers or grade levels needed additional support or pressure, she would either meet with them (as is the case with the second grade teacher meeting she called in the Matthews vignette) or she would tell the principal and the principal would put pressure on the teachers. In April, Ms. Kelly and the principal decided to give a writing contest as the week 30 writing assessment. At noon one day late in April, Ms. Kelly walked into the principal’s office and showed her some of the student writing one 7th grade teacher turned in. She was very upset about the poor quality of the students’ work, asking,

Why would we even accept that? I just wasted 45 minutes grading this. We should not be accepting this from our students. Can you believe that students would write…’I don’t have anything to say.’? We give them a zero. How can they write that and get away with it? What message does that send, if we accept this kind of work? If they were being instructed, and taught, how can they say, I don’t know how do to this. This has to be about instruction… (Literacy Coordinator, 2003)

As the principal read through the folder of student writing pieces, Kelly said to her, “I would not have accepted that from my fifth graders, “ referring to her previous position as a fifth grade teacher. As Kelly walked out, the principal said to her, “It’s rough. We’ll see.” Several minutes later Kelly walked back in and told the principal the names of the teachers who had not yet turned in student writing assessments. Kelly then told the principal that she would not beg anymore. The principal said, “No, no, let me take it from here.” The principal then made a few
phone calls. An hour later a sixth grade teacher came in, handed the principal a folder of student writing, and sat down. The principal said to him, “I was calm on the phone, but this is a problem.” She proceeded to reprimand him for his failure to follow through on his responsibilities in a timely manner. She demanded that each teacher participate, as expected, in the Five Week Assessment routine. He agreed to have his students complete the assessments. While these behavior controls did not include direct measures like classroom observations and formal evaluations, they were, nonetheless, informal behavior controls.

Despite similar input and output controls in the math and language arts Five Week Assessment routines, the ways in which teachers and leaders used these controls varied. Additionally, the language arts leaders used behavior controls in reading and writing, while I have no evidence of such practice in math.

_Differences: Connected v. fragmented social networks_

The interconnected and sequential nature of the Five Week Assessment routine makes it possible for social networks to build. Extensive differences existed between the social networks that leaders and teachers formed in math and language arts around this routine. As compared with the frequent and dynamic social network in language arts, math leaders and teachers rarely communicated with each other about the routine. These differences influenced the ways in which leaders and teachers did their work.

Many aspects of the Five Week Assessment routine involved communication. As designed, the routine involved the work of multiple individuals, and it connected the work of all students, teachers, and leaders. The vignette illuminates Ms. Matthews’ participation in the social networks around subject matter, and the routine in particular. There are five connection points in
math, two that directly relate to the routine: an introduction to the changes in the math routine and Ms. Brown periodically bringing Ms. Matthews the assessments to give her students. Three people are involved in these connections—the classroom teacher, the building math leader, and the school math leader. (See Figure 11.)
Figure 11. Ms. Matthews’ interactions around math and language arts.
Ms. Matthews’ experience is typical of teachers at Adams. In fact, because she became a math leader for the building, and had been a math leader for her grade level team, the interactions she had around math may have been more frequent than those of other teachers. One exception to this may be a teacher who is uncomfortable in math and seeks out advice on a frequent basis to help alleviate concerns. However, I found no evidence of this. In fact, even a teacher with no previous experience teaching math was not overly concerned with starting to teach math mid-year.

Overall data (interview and observation) show that the social network connected with the math routine was fragmented by building and weak overall. Ms. Brown distributed assessments to every 1st-3rd grade teacher. K-3 teachers returned their math scores to either the literacy coordinator’s assistant or to Ms. Brown. While there were several professional development sessions each year led by Math Team members, these sessions were not directly related to the routine. See Figure 12.

<table>
<thead>
<tr>
<th>Housed in South Building</th>
<th>Housed in North Building</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ms. Jones</td>
<td>Assistant Principal North</td>
</tr>
<tr>
<td>Math Assistant</td>
<td>Ms. Brown</td>
</tr>
<tr>
<td>Principal</td>
<td>North Bldg. 1-3 Teachers</td>
</tr>
</tbody>
</table>

6th grade math  South Bldg. Teachers Ms. Matthews teacher/math team member

Solid lines indicate consistent communication (monthly).
Dotted lines indicate infrequent communication (several times per year).
Absence of line indicates little to no communication.

*Figure 12.* Math social network connected with the Five Week Assessment routine
In comparison, the social network around the language arts routine was centralized around the literacy coordinator. She met, formally and informally, with most classroom teachers on a monthly basis. In addition, there is ample evidence of formal and informal conversations about reading and writing (as seen in Ms. Matthews’ experience) between teachers, librarians, and administrators. See Figure 13.

**Figure 13. Language arts social network connected with the Five Week Assessment routine**

Teachers and leaders at Adams talked more often and to a greater variety of people around the language arts routine than they did about the math routine.

*Leadership practice supports these differences*

One reason that the language arts network may have been so much more developed than the math one is that leaders allocated more time to the language arts routine in the form of people hours and meeting hours. Because classroom teachers carried out the majority of the tasks in the math Five Week Assessment routine, as opposed to non-classroom personnel in language arts, the math and language arts leaders in the routines had different priorities. Math leaders prioritized their classroom responsibilities over the routine. While four teachers made up the
math team, they perceived their primary responsibility to be the instruction of their own students.

As one math teacher leader, Ms. Jones, explains,

...now this year it’s (the routine) been hard to monitor. First of all, because they have a language arts coordinator that’s not in the classroom. So I’m supposed to be (the leader) for math, but it’s really hard for me because I have a classroom and my first priority is my students. I know I have to be responsible for the school as well, excuse me, but I have to worry about them first. So it’s harder with me trying to keep and monitor the way that the language arts is monitoring because I’m in a classroom. (Math Leader, 2002)

Because of this, all of the individual classroom teachers ended up doing several elements of the work involved in the math routine. In some cases, teachers created and copied their own assessments. In addition, math teachers scored and analyzed their own classroom data. The leadership activities of the math five-week assessments were primarily distributed across many individuals, and math teachers did much of the work of the routine instead of math leaders per se (although the math leaders were doing these steps for their own math classrooms). In essence, the Math Team did not have enough time to teach as well as carry out the Five Week Assessment routine as it was intended. The ways in which their responsibilities were structured provided them little time to do the tasks of maintaining the steps of the routine. This is in direct opposition to the situation in language arts, in which the literacy coordinator had time to carry out leadership tasks around the Five Week Assessment routine. In fact, this was her first priority and how she spent most of her time. Two months after Ms. Kelly became literacy coordinator, she says this to a classroom teacher,

Well, she (Ms. Jones) is (the math leader for the school) but she has a classroom. You know as well as I do that that’s too much responsibility on top of a classroom. That she just can’t, it’s not humanly possible for her to do all of that stuff (around the assessments). It takes me a week to enter in all of the literacy stuff, and the math people are supposed to be entering all that in too, but there’s just no way that they can possibly do it all and teach. (Literacy Coordinator, 2002)
Clearly the literacy coordinator sees how her role in the routine is distinctly different from the math leaders’ roles in the performance of the routine. Math leaders prioritize their classroom while the literacy coordinators were able to prioritize the Five Week Assessment routine.

Consequently, the practice of the routine differs across both routines. See Table 14.

Table 14.

Comparison of Leaders’ Enactment of the Routine

<table>
<thead>
<tr>
<th>Task in Designed Routine</th>
<th>Language arts Roles</th>
<th>Math Roles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1: Identify needs.</td>
<td>Literacy Coordinator</td>
<td>Math Team</td>
</tr>
<tr>
<td>Step 2: Plan Five Week Assessment</td>
<td>Literacy Coordinator</td>
<td>Math Team</td>
</tr>
<tr>
<td>Step 3: Develop assessments</td>
<td>Literacy Coordinator</td>
<td>Math Team (based on textbook)</td>
</tr>
<tr>
<td>Step 4: Copy and distribute assessments.</td>
<td>Literacy Assistant</td>
<td>Math Leader-1: K, 1 Math Leader-3: 2, 3</td>
</tr>
<tr>
<td>Step 5: Administer and return assessments.</td>
<td>Teachers</td>
<td>Teachers administer but do not consistently return</td>
</tr>
<tr>
<td>Step 6: Score assessments.</td>
<td>Literacy Coordinator and Literacy Assistant</td>
<td>Multiple Choice component: Teachers Problem Solving component: Not scored unless by individual teachers.</td>
</tr>
<tr>
<td>Step 7: Compile and analyze scores.</td>
<td>Literacy Coordinator and Literacy Assistant</td>
<td>Literacy Assistant and/or Math Leader compiled. No evidence of analysis.</td>
</tr>
<tr>
<td>Step 8: Share scores and identify needs.</td>
<td>Literacy Coordinator, Principal</td>
<td>No evidence.</td>
</tr>
</tbody>
</table>

As you can see in Table 14, the math team did not do all of the elements of the intended routine. The steps of the Five Week Assessment routine that were done by the math team members are steps that fit into the teachers’ already busy professional lives. For example, they met in the summer to plan out the assessments and the schedule. This did not interfere with classroom teaching tasks. The steps that are time consuming in ways that conflict with their classroom practice were the ones that got overlooked. Scoring, compiling, analyzing, and sharing
assessment data takes significant time away from classroom responsibilities, every five weeks, throughout the school year. The teachers may find time to do this with their own classroom data, but not school-wide. Because the literacy coordinators did not have any teaching responsibilities, they had significantly more time to do the work of the routine. The math leaders carried out some steps, but they left several to the math teachers.

Additionally, there were more meetings in language arts than math. From 2000-2003, I observed four math meetings, 14 language arts meetings, and five meetings in which both topics were addressed. Of these meetings, one of the math meetings can be directly linked to the Five Week Assessment routine, while nine of the language arts meetings involved the routine. Additionally, I observed two math professional development meetings and five professional development meetings in reading and/or writing. My observation log is representative of the overall frequency of meetings, as can be seen from the breakdown of professional development meetings on the 1999-2000 Teacher Leader schedule (1 math, 5 reading, 3 test taking, 2 other). This additional time to talk, learn, reflect, collaborate, and focus on language arts impacted the leadership practice for instruction in language arts as compared with mathematics. Ms. Matthews’ experience is indicative of this; she feels it is important to discuss language arts issues, but she viewed math as pretty straightforward and not requiring additional discussion.

Epistemological differences and leadership practice

The leadership practice at Adams reflects epistemological differences in reading, writing, and math. Math is linear and sequential and often concrete while language arts is a complex web of reading and writing that is not contained in one class subject. Math looks similar across different settings. High school math departments look similar in different districts (Johnson,
Leinhardt and Smith found that eight 4th grade math teachers spontaneously taught fractions the same way using the same text, teaching lessons on the same topic in approximately the same order, and using the same pages of text and very similar examples (Leinhardt & Smith, 1985). One reason for these structural similarities may be that, “mathematics is based on permanent and predictable relationships that can be expressed in principles and rules,”(Johnson, 1990).

Another explanation for the differences between subject matter domains is differences in how people perceive them. Research has shown that math teachers perceive math as highly structured and sequential (Stodolsky, 1988) while English is seen as more open and flexible (Grossman & Stodolsky, 1994). While math is perceived by teachers as linear, there is a greater variety of cognitive goals in literacy (Ball, 1981; Paule, 1986). Not everyone agrees that language arts is less linear than math. This perception of math as linear and sequential can be mapped to the ways in which some people see the process of learning to read (see Slavin & Madden, 2001, for example).

Math leadership practice at Adams was perceived and enacted in ways that indicate the preconception that math was linear and sequential. Leaders provided teachers with a pacing guide and a standardized textbook with which to teach math. They scheduled little time for teachers to collaborate around math ideas, nor did they provide time to analyze and discuss assessment data. The infrequent professional development sessions in math were largely math leaders sharing strategies of math instruction gleaned from outside experts. As a result, students at Adams performed better on the skills components of the standardized tests than they did on the problem solving components. (See Figure 14.)
Leadership practice in reading varied from math. As in math, reading instruction was guided by the standardized test, but the ways in which teachers enacted reading instruction was more often left to their individual judgment. Teachers used a variety of curricular materials, had ample meeting time to discuss strategies, ideas, and assessment data, and had a full-time literacy coordinator to support their teaching efforts.

Writing leadership practice at Adams is closer to math practice in terms of how prescribed the leaders have made the instructional plan. Teachers have a pacing guide in math and they also have a timeline for teaching the various writing genres. Additionally, leaders and teachers at Adams taught students to write for a standardized testing audience. They built a formula for writing a persuasive, expository, or descriptive essay: five paragraphs (introduction, three body, conclusion) with each paragraph to include a topic sentence and several examples.

Figure 14. ITBS Math score breakdown: Concepts, problem solving, skills (2005)
Leaders at Adams built tools to support writing practice and used their own expertise to support writing instruction rather than depending on external experts; Ms. Tracy and Ms. Kelly both generated writing prompts and consistently assessed and gave feedback on student writing. Additionally, Ms. Kelly handed out writing lessons, assignments, and encouraged teachers to enter writing contests. While the teachers had choice about the content of their writing instruction—they could choose what writing prompts their students wrote about—they did not have freedom in the structure nor the genre of writing they taught. These differences in how reading, writing, and mathematics are defined are reflected in the tools teachers and leaders use in their practice, as well as their practice itself. Table 15 shows a breakdown of leader control over and support for classroom instruction and leader support for collaborative conditions, across math, writing, and reading.
Table 15.

*Elements of Leadership Control and Support for Math, Writing, and Reading*

<table>
<thead>
<tr>
<th></th>
<th>Math</th>
<th>Writing</th>
<th>Reading</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Instructional materials</strong></td>
<td>Standardized textbook (No teacher discretion)</td>
<td>Various writing projects (High teacher discretion)</td>
<td>Various textbooks (Medium-high teacher discretion)</td>
</tr>
<tr>
<td><strong>Instructional pacing</strong></td>
<td>Pacing guide (No teacher discretion)</td>
<td>Pacing guide (No teacher discretion)</td>
<td>Topic list (Some teacher discretion within each topic)</td>
</tr>
<tr>
<td><strong>Leadership tools to support instruction</strong></td>
<td>Homegrown based on external structures (pacing guide based on textbook, assessments pulled from textbook)</td>
<td>Homegrown lesson plans, writing prompts, formula for writing a good essay.</td>
<td>Variety of internal and external tools (research, homegrown lesson plans, websites)</td>
</tr>
<tr>
<td><strong>Content of in-house professional development and leadership support</strong></td>
<td>Teacher Leader sessions based on external classes Math Team attended.</td>
<td>Explicit writing lessons and strategies shared in literacy meetings.</td>
<td>Meetings held to share practice and discuss ideas, challenges, and strategies.</td>
</tr>
<tr>
<td><strong>Five Week Assessment data analysis and feedback</strong></td>
<td>Scores compiled but not analyzed or shared.</td>
<td>Individual support through written feedback on students’ writing.</td>
<td>Reading scores shared several times throughout the year.</td>
</tr>
<tr>
<td><strong>Meetings leaders carve out to discuss (on average, per year)</strong></td>
<td>2</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td><strong>Teacher talk (formal and informal)</strong></td>
<td>Low</td>
<td>Medium</td>
<td>High</td>
</tr>
</tbody>
</table>

**Discussion**

Although the math and language arts Five Week Assessment routines at Adams had similar origins, goals, and ostensive aspects, the routines in practice were very different. Considering aspects of the routine as they relate to a control organization, we see that the
designed routines had similar inputs and outputs, and both lacked formal and consistent behavior controls. The leaders and teachers used those inputs and outputs differently. In math, the routine enacted was linear and straightforward. Leaders and teachers used input controls in rigid ways, built shallow social networks, and depended on external sources for much of their expertise. Conversely, the input controls in language arts were more open and allowed for teachers to have more discretion in their instructional practices, particularly in reading. The tools leaders built for math were reflections of externally designed artifacts. The tools they built for writing were homegrown, and the reading tools were a combination of both externally and internal expertise.

From a skills-centered perspective, the routine with these controls was an appropriate way to organize math practice based on the beliefs that the ways in which you “get” math are conducive to this approach. Math success on the ITBS primarily means doing math skills, which is straightforward and, in the 1990’s, had been taught successfully using a newly adopted math textbook. Unfortunately, the kind of math understanding asked of students became harder when the district’s high stakes test changed from the ITBS to the ISAT. The ISAT tests problem solving and students’ ability to communicate their thinking. The routine, with clear input and output controls, did not suffice in supporting this kind of higher-level math instruction. Student tests scores correlate to these findings. Math computation scores were higher than their problem solving scores (see Chapter 2, Figure 2). Also lacking from the math routine was co-accountability between school administration, the math leaders, and the teachers. The school leaders needed to support the routine by allocating appropriate resources to the routine (time for math leaders to analyze data and meet with teachers to discuss results, etc.). The Five Week Assessment routine is a useful accountability system, but one that demands many resources.
In language arts, the routine did not work ideally, but for different reasons. The input controls were vague, the output controls were clear, and the behavior controls were informal and inconsistent. Reading practice had to be more clearly defined in order for a control routine to work. In an environment where reading instruction is clearly articulated and structured, for example Slavin’s Success for All program, (Slavin & Madden, 2001), a routine like this may work more effectively. The routine improved student writing because the school had clear definitions of how to write persuasive, expository, and descriptive essays. But reading instruction was not as clearly defined, so the ways in which leaders supported language arts extended beyond this routine. Leaders and teachers collaborated more as they tried to deal with the ambiguity of teaching urban students to read.

Ideally, the math routine should remain in place at Adams, and leaders should consistently analyze scores and share results with teachers. Since this is how the routine was intended, school administrators need to support these efforts by allocating more resources to math. When math leaders identified the need to better support students in math problem solving and communication, they should have created opportunities for scoring tests and for teachers to come together at their grade levels and discuss, with math leaders, strategies, ideas, and challenges about math problem solving. Math teachers and leaders needed to build an effective community of practice around this new and difficult aspect of teaching math.

In language arts, the Five Week Assessment routine worked for improving student writing. The reading, however, needed a different approach. If leaders had consistently given teachers timely feedback on the reading tests, they could have used this formative assessment data to better inform their reading instruction. It may be hard to define the variables of teaching reading, in which case it may be that a routine like the Five Week Assessment routine is effective
only if it is one part of a larger instructional strategy and only if it is tied to clearly defined components of reading instruction. Granted, when the multiple language arts routines that Ms. Tracy and Dr. Williams built were well coordinated, in the late 1990’s, reading scores were higher. By the 1999-2000 school year, 38.8% of students in grades 3-8 at Adams were reading at or above national norms; by 2005 that number had dropped to 28.3%.

According to Rowan’s (1990) commitment framework for organizations, teachers who collaborate more will be more invested in what they teach. In the case of math, the lack of frequent discussion around the Five Week Assessment routine indicates weak social networks. This potentially had a negative impact on math teaching and leadership practice at Adams, particularly around elements of complex instruction like problem solving. Indeed, although the routine was designed to include problem solving, the lack of follow through is interesting. Was that simply a result of not enough leadership hours as the Math Team consisted of four full time classroom teachers whose first priority was their own individual classroom? Or was there somehow a challenge to the ways in which individuals were used to working around math? Because they did not have established networks, or habits of mind for collaborating in math, maybe the development of these practices was beyond the current capacity.

These findings have several implications for practice. I hypothesize that while math and language arts have epistemological differences, math and reading may have some important similarities that impact teaching and learning. Presently, many teachers perceive math to be simple to teach and straightforward: the idea being if you teach the textbook, the children will learn what they need to. At Adams, this turned out to not be true. This kind of approach to math resulted in students learning basic skills but struggling with problem solving and higher-level thinking. I posit that reading is similar. Some argue for formulaic teaching of beginning readers
that is similar to this straight-forward perception of math (Slavin & Madden, 2001; Slavin et al., 1996; Madden et al., 1993). Students taught with these methods can read words, but they cannot consistently read for understanding nor can they think critically about what they have read (Pogrow, 1998, 1999; Jones et. al, 1997).

The challenge for our students is to learn to think critically, both in mathematics and in language arts. One way to meet this challenge will be for school leaders and teachers to see the added complexity of their work. Shifting the organization of schools to a commitment model—where leadership and teaching practice is built on collaboration and collective sense-making—may be a worthwhile approach to dealing with the added complexity this challenge adds to their work. In our work we must challenge the perception of math and/or reading as easy subjects to teach because they are complex subjects. We must also study the benefits of more collaborative school environments as a way to support teacher learning and instructional change. We do, however, have to consider the structures and confines of the school day and professional development schedule, since limited time and resources are an ongoing reality in school systems.
The research described in this dissertation was motivated by an interest in understanding leadership practice in elementary schools, and more specifically to build a better understanding of how the school subject matters to the practice of leadership in schools. To this purpose, I investigated the leadership practice at one urban elementary school over three school years using a distributed leadership perspective to frame my study of leadership. I first identified school leaders and then examined their practice through both observing their work and talking with them about that work. I studied the tools that they used, the social networks they participated in, and the routines with which they carried out their work.

In Chapter 2, I examined how school leaders at Adams built their practice differently in language arts than they did in math. In Chapter 3 I described how an organizational routine can simultaneously provide both stability and opportunities for change in leadership practice. In Chapter 4 I examined one organizational routine at Adams, the Five Week Assessment routine, in an effort to further a greater understanding of how leaders build their practice differently in language arts and mathematics.

In this chapter I first give a brief summary of the main findings of each chapter and then discuss general implications of this work for the understanding of school leadership practice. I conclude with a brief discussion of possibilities for future work.

**Brief summary of findings**

In Chapter 2 I presented an examination of how school leaders built their practice in language arts and math. I found that the leadership practice in language arts had many elements
of a commitment model. For teachers and leaders, the social network structures around language arts were highly connected, with a wide array of routines enacted by a broad pool of individuals. There was evidence of more collegiality in language arts than in math. Further evidence suggests that the design of instructional improvement had more control elements in math than it did in language art: clear input controls tied to clear output controls. In practice, however, these controls were weakly implemented.

In Chapter 3 I presented an examination of one organizational routine in order to better understand how routines both provide stability in an organization and simultaneously provide opportunities for change. I found that at Adams, school routines were enacted and changed due to exogenous factors such as the entry of a new leader or the introduction of district policy. A routine can act as a stabilizing effect in times of transition, wrapping around the organization by guiding the work of every teacher and leader. At the same time, routines are enacted by people, and through their reflection on day to day enactment of the routine, they make changes over time in both the performance of the routine as well as in the ideal of the routine. My work shows that the changes in routines that took the strongest hold came when new people or new tools were introduced to the routine. In order to sustain these changes, leaders and teachers must both believe they are important enough to enact and must also provide the appropriate resources.

In Chapter 4 I analyzed one routine at Adams in language arts and math to better understand how subject matters to leadership practice. I found that while the Five Week Assessment routine was designed with common origins, goals, and ostensive aspects, the routines in practice were different. In math, the routine enacted was linear and straightforward. Leaders and teachers used input controls in rigid ways, had fragmented social networks, and depended on external resources for much of their expertise. Conversely, the input controls in
language arts were more flexible and allowed teachers to have more discretion in their instructional practices, particularly in reading. The tools leaders built for mathematics were reflections of externally designed artifacts while the tools they built in language arts were often homegrown.

*Implications of this work*

The findings of this dissertation study bear several implications for the understanding of school leadership practice. It appears that the subject truly matters in leadership practice. School leaders will need to balance the control measures linked to No Child Left Behind with the competing complexities of teaching reading, writing, and math and of leading change in classroom instruction in schools. The challenge involves striking an effective balance between implementing necessary control elements without losing the commitment elements (like collegiality and collaboration) that become necessary for teaching students high-level thinking and problem solving skills. Not surprisingly, this will require additional resources, an ongoing challenge faced by schools and districts alike.

Also, school leaders and teachers need to explore their preconceptions about reading, writing, and mathematics. While epistemological differences exist between the subject areas, teaching all subjects well is a non-routine activity, even though some teachers and leaders hold difference conceptions of the complexities across language arts and math instruction. School leaders at Adams prioritized language arts, as many schools and districts currently do. One reason for this is that literacy is relevant for all content areas. Finding a balance between this need to prioritize literacy, and the need to support teachers and students in math learning, will be
critical to school leaders as standardized math tests continue to demand higher level thinking skills.

School leaders build and use tools differently in language arts and math. The social networks in these two disciplines reflect epistemological differences. To some extent, these differences reflect the particular attitudes about teaching language arts and math. School leaders need to be supported in examining their assumptions about subject matter—both how math, reading, and writing should be taught, such as what tools and social structures are necessary to support instruction, and how difficult each subject is to teach.

Organizational routines offer a powerful lens into the work of school leaders and teachers. Routines serve as a catalyst for change, a stabilizer, and a way in which leaders, over time, change organizations. Leaders and teachers change the performance of a routine by changing their actions. Routines serve as a mechanism for leaders to do politically sensitive work. Leaders and teachers need time to reflect on their practice in order to do more than repair a routine. Additionally, new people and new tools have significant impacts on changing routines, and thus the way organizations work. Leaders and teachers have leverage to change organizations through the choices they make about their daily practice with regard to the routines integral to their organization.

Current policy climate: Using data to inform decisions

In the current policy climate, policy makers and politicians expect educators to use data to inform their decision-making. District offices and school leaders are expected to choose curriculum materials that are “research based.” Teachers are expected to consider assessment data to make instructional decisions. This is a main component of the No Child Left Behind Act,
and as a result, this mode of operation has quickly become accepted as one important strategy to improve teaching and learning. Unfortunately, very little empirical work has been done in this area, with the exception of the study by Black and colleagues’ (2003) that illustrates how formative assessment by classroom teachers did in fact increase student achievement.

Yet, despite the thinness of scholarship, the assumption that in order to improve student achievement, educators must use data to inform their decision-making has become deeply grounded in education. Policy makers, politicians, and school leaders assume that if given data, teachers, instructional coaches, and school leaders will automatically use it effectively in their efforts to improve teaching and learning. My study of Adams shows how this simple model of clear inputs (high stakes standardized tests) tied to clear outputs (student achievement on these tests) is an incomplete model. At the school level, there are many institutional practices that complicate this simplistic model, practices through which evidence of various sorts gets used.

Factors that complicate this simplistic model

Research has documented barriers that exist in the use of data by schools. Ingram and colleagues (Ingram, et al, 2004) found that while teachers are willing to use data, they are concerned with the kind of information that is available (e.g., what do the tests really tell teachers that can inform their instructional practices?). In order for data to be useful, it must be directly relevant to the decisions that teachers and school leaders are making. Teachers are also concerned with how the data is used to judge their performance and their colleagues.

Additionally, school leaders and teachers have not been systematically trained on relevant data analysis methods. Kathryn Parker Boudett, Elizabeth A. City, and Richard J. Murnane describe a process for using data wisely in schools in their edited version of Data Wise: A Step-
by-Step Guide to Using Assessment Results to Improve Teaching and Learning (Boudett, City, & Murnane, R. J., 2005). This process, which asks school personnel to prepare, inquire, and then act, can serve as a framework with which to begin to understand the difficulties school personnel have in using data to inform decision making.

In order for school personnel to use data, they must have time to organize and analyze the data. They then must take that analysis and consider ways in which they can change their instruction to respond to the patterns in the data. School leaders will need to carve out time from an already hectic workday for teachers to do these tasks and build the professional community necessary to make sense of this new practice. Leaders will have to find or build the knowledge to effectively lead these meetings. Other logistical concerns also surface, in addition to the challenge of creating meeting time, such as: Who will teach teachers and leaders how to analyze data? How will they know how to judge what and how assessments are helpful?

Exogenous factors complicate this picture as well. When state policy dictates certain assessments (which may or may not be helpful), school leaders must respond. In the same way that schools with Reading First money must select from a specific list of assessments, so too are Chicago schools tied to specific assessments. The Iowa Test of Basic Skills is a norm-referenced test, so the results from this assessment have limited value in terms of giving school leaders and teachers specific places for improvement. And because the results come at the end of the year, teachers have only a few weeks with their students to address weaknesses revealed by the testing before the students leave for summer vacation. These factors overshadow other factors (which

\[3\]

33 Norm-referenced test results are compared with the entire data set, so half of all students taking the test always score below average. For this reason, the scores are not comparative year-to-year compared to students within the school, but only year-to-year compared with all other students taking the test nationwide.
are normally very disruptive to school practice) like the departure of key leaders, the announcement of new district policies, etc.

While the control model of schools (Rowan, 1990) articulates the place for data use, the commitment model is less clear on this issue. At Adams, the language arts leaders used a variety of data to guide their collaborative efforts: data from the Five Week Assessment routine, data from standardized tests, district policy, and recent research on language arts topics. They also chose to focus on their own classroom practice, but in an unspecified way. In order for the commitment model to be effective in this accountability climate, school leaders and teachers need to determine what data they should collaborate around. For example, teachers might examine student work using common rubrics. They might jointly build these rubrics, or they might build them in their classrooms with their students and then discuss them in grade level meetings. Teachers might share practice, but guided by a framework of good instruction. They might observe each other and reflect on teaching practice to find strategies for better supporting students in areas of concern, like math problem solving and critical thinking.

Practices to mediate the use of data to improve teaching and learning

Teachers need to learn how to interpret the evidence they get. Data analysis skills have not traditionally been taught in teacher education programs. Although teachers assess situations and make decisions constantly as they teach, knowing how to take a list of student scores on a standardized test and make instructional decisions based on that information is not an easy or obvious task. If the test scores show that the third graders are struggling with reading comprehension, and an item analysis of the test gives teachers enough information to discern that their students are struggling primarily with making inferences, they then need to determine what
instructional changes they should to make in order to address that problem. Knowing how to analyze the test scores, and then decide what addressing that need actually looks like in the classroom, is difficult work. Teachers and school leaders need specific training in order to effectively analyze data and then make decisions about how to effectively use that evidence to improve classroom instruction and thus student learning.

Teachers and instructional leaders also need a common language to use in problem solving this new practice. Communities of practice work effectively when they have a joint enterprise and a common language. Math has a common language, both in general and within Adams, but language arts does not. Language arts is a school subject that lies in the intersection of multiple domains (English, speech, communications, literature, etc.). Therefore it lacks the disciplinary clarity that math possesses. In addition, the wide range of materials that teachers and leaders at Adams use in language arts speaks to the lack of common language within the school as a whole. Adams does not have a common curriculum, and teachers and leaders do not have a common understanding of what their language arts goals are, aside from improving test scores in reading and writing. Implementing a common set of curricular materials is one way for schools to begin to build a common language across their faculty. The next step is then to figure out what evidence counts, how they will gather that evidence (is the format of the Five Week Assessment helpful, or do they need to build different assessments and/or routines?), and how they will know when they have made progress.

School leadership practice that is focused on improved student performance in math and language arts must have coherence. At Adams, the math program had coherence. While largely dependent on the textbook, the Math Team developed a coherent plan for each grade level to cover the concepts tested on the high stakes tests. However, it was not implemented effectively.
The teachers did not have proper guidance in terms of how to use the data to inform their instructional decision making process. Finally, school leaders must allocate time for teachers to build these skills, access to expertise in order to scaffold teacher learning, and meeting time with which to build common language, coherence, and understanding of these new practices.

School as a human enterprise

We are currently in a climate of high stakes accountability for schools. This pressure from the federal government, through the lens of NCLB, has changed the focus and climate of our nation’s schools. This policy has created a climate in schools where there exist clear input measures (standards) and clear output measures (student performance on standardized tests). This suggests that a control model is the correct solution to our problem. If our goal is only to improve student performance on standardized tests that assess standards, then that may be true. Focused test preparation is probably enough to achieve that goal. But I believe that we are doing more than teaching tests; we are teaching children. There are critical learning opportunities that cannot be assessed in a multiple-choice test or an essay test.

If we believe that children need to learn to problem solve, to think critically, and to ask important questions in order to push the boundaries of their world, then we need to extend the scope of our teaching beyond what we can test cheaply at the state or national level. Because we are teaching children, and because the teachers instructing these children are human, we need to expand our view beyond the control model and provide elements from the commitment model like collaboration, and teacher leadership, so committed teachers can teach in schools that will be more than just input/output machines and instead will be places where students and teachers will be able to experience the joy in learning.
Future work

In future work I would like to extend this analysis in two directions. First, I would like to further examine how subject matter influences leadership practice by examining knowledge, expertise, and teacher beliefs about epistemological differences between math and language arts on a broader scale. While elementary teachers are considered to have less subject matter expertise in math than in reading and writing, I hypothesize that teachers think they know more about reading but, in fact, may not. Teaching urban students to read, particularly when they are repeating third grade, is not an easy task. Degrees and coursework serve as a proxy for expertise; I am interested in testing teachers on elements of both pure content as well as pedagogical content matter. I would also like to systematically ask elementary teachers about their comfort in and beliefs about math, reading, and writing. These data have initial suggestions of this, but looking across a broader array of teachers will allow me to deliver more robust findings.

Second, I would like to further examine how changes in routines reflect organizational learning. The field of human cognition is vast, but we know less about how organizations learn. Routines are one avenue into that examination, for when we see evidence of a routine undergoing change, this is evidence that the organization has learned (Resnick & Spillane, in press). This case study of Adams can serve as a pilot for ways in which to study organizational learning.
REFERENCES


Roderick, M., & Nagaoka, J. (2004). Retention under Chicago's high-stakes testing program: Helpful, harmful, or harmless?


## Appendix A.

### Coding categories

<table>
<thead>
<tr>
<th>Name/Position:</th>
<th>Code</th>
<th>#</th>
<th>Meeting</th>
<th>Code</th>
<th>#</th>
<th>Meeting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Talk Coordination</td>
<td>II. B. Classroom</td>
<td></td>
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<tr>
<td>Point Person 1</td>
<td>What we do</td>
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<tr>
<td>Point Person 2</td>
<td>What we need to do</td>
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<tr>
<td>First Word</td>
<td>Teaching strategies/ideas</td>
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<td>Oz</td>
<td>Parent issues/concerns</td>
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<td>Ending voice</td>
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<td>Last word</td>
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<td>Introduces leader</td>
<td>II. C. Broader vision</td>
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<tr>
<td>Directing activity</td>
<td>Making connections</td>
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<td></td>
<td>Fits to Standard Operating Procedures</td>
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<td></td>
<td>Big picture</td>
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<td>Need</td>
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<td>I. A. Reporting</td>
<td>Goal</td>
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<tr>
<td>Classroom</td>
<td>Strategy</td>
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<tr>
<td>School</td>
<td>Sets expectations</td>
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<td>Report CO dictate</td>
<td>The way it is</td>
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<tr>
<td></td>
<td>Problems</td>
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<tr>
<td>I. B. Clarification</td>
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<tr>
<td>Clarification</td>
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<tr>
<td>Answers question</td>
<td>II. D. Monitoring Improvement Effort</td>
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<tr>
<td>Repeat for emphasis</td>
<td>Testing—Iowa</td>
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<td>Testing—ISAT</td>
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<td>I. C. Professional Community/Collegiality</td>
<td>Testing—5 wk</td>
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<tr>
<td>1. Invites others</td>
<td>Testing—other</td>
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<td>2. Team player</td>
<td>Need</td>
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<tr>
<td>3. Collaboration</td>
<td>Goal</td>
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<tr>
<td>4. Expertise</td>
<td>Strategy</td>
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<td>5. Sets tone</td>
<td>Sets expectations</td>
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<td>6. Goes outside of role</td>
<td>Student accomplishments</td>
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<td>7. Referencing Others</td>
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<tr>
<td>II. A. Resources</td>
<td>II. E. People recognition (maintenance)</td>
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<tr>
<td>a. Obtaining</td>
<td>Provide Recognition</td>
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<tr>
<td>b. Distributing</td>
<td>Role assignment</td>
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<td>c. Reminding use of</td>
<td>Blame</td>
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<td>d. Ideas</td>
<td>Check in</td>
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<tr>
<td>e. Discouraging Use</td>
<td>Handles disturbance</td>
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<td>f. Organizing</td>
<td>Praise</td>
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<tr>
<td>g. Problems</td>
<td>Criticism</td>
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<td></td>
<td>Provide Encouragement</td>
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</tbody>
</table>
### Professional development topic chart

*Teacher Leader calendar, as planned, for 1999-2000*

<table>
<thead>
<tr>
<th>Date</th>
<th>Teacher Leader Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Friday, September 10, 1999</td>
<td>Classroom management of the 4 Blocks/make and take</td>
</tr>
<tr>
<td>Friday, October 1, 1999</td>
<td>HBJ Overview—HBJ Consultant</td>
</tr>
<tr>
<td>Thursday, October 28, 1999</td>
<td>Overview of Read, Write, Well- Tracy</td>
</tr>
<tr>
<td>Wednesday, November 24, 1999</td>
<td>Read, Write, Well-Using Rubrics to Score Writing—Sunny</td>
</tr>
<tr>
<td>Wednesday, December 15, 1999</td>
<td>Read, Write, Well-Writing in Mathematics-Grovenor</td>
</tr>
<tr>
<td>Tuesday, January 18, 2000</td>
<td>Collaboration &amp; Teaching Styles-Taylor</td>
</tr>
<tr>
<td>Monday, February 7, 2000</td>
<td>Mathematics</td>
</tr>
<tr>
<td>Friday, February 25, 2000</td>
<td>Educational Games and Poetry-James and Brown</td>
</tr>
<tr>
<td>Thursday, March 16, 2000</td>
<td>4 Blocks in K.G.-K teachers</td>
</tr>
<tr>
<td>Friday, April 7, 2000</td>
<td>Least Restrictive Environment</td>
</tr>
<tr>
<td>Wednesday, May 3, 2000</td>
<td>Second grade teachers-unplanned</td>
</tr>
<tr>
<td>Monday May 22, 2000</td>
<td>Overview and planning meeting</td>
</tr>
<tr>
<td>Friday, June 9, 2000</td>
<td>View video of exemplary classrooms</td>
</tr>
</tbody>
</table>
Appendix C.

Perceived roles at the time of transition (December, 2001)

(Data from field notes in italics. Interview data in regular text.)

<table>
<thead>
<tr>
<th>Literacy Leader Current and Former Position</th>
<th>Perceived New Position</th>
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</table>
| Ms. Walsh  
Former literacy coordinator, now 8th grade social studies and reading | Ms. Walsh was VERY happy to be back in the classroom. The first thing she said to me was, "I got what I want. It was a hard fight but I got it!" She said she was still doing some of the responsibilities of the literacy coordinator, and that she and Ms. Kelly were the two main people. She talked about how it was going to be a little bit of extra work, but that she was glad to be back in the classroom. (Fieldnotes 12.7.01) |
| **Ms. Kelly**  
Former 5th grade teacher, now no classroom responsibilities | Ms. Kelly said that she's been pulled out of the classroom. I asked her if that was hard for her to leave her kids. She said, 'well, it's kind of hard but that's what I've been wanting to do, I've been wanting to work my way out of the classroom, so this is good.' She said that she was the reading coordinator…I asked Ms. Kelly about how they were going to grade the 5 week assessments. She checked with the literacy coordinator’s assistant and said that there was a scantron for part of it, that Mrs. Smith corrects the first and second grade writing and that she, Ms. Walsh, Ms. Baize and the tutors are going to divide up the rest of the writing assessments. Notice that Ms. James is not going to be correcting any assessments. Ms. Kelly said, "We'll see how that goes. It's a lot of grading." She's going to have a meeting when we get back in January, not just with literacy people, but with everybody. She’s going to talk about how it's important for all of the teachers to know how their students are doing, what the students need help with, and how they can help them. She seemed like she was trying to get things in order and figure everything out. She's taking charge.  
(Fieldnotes 12.07) |
| **Ms. Baize**  
Formerly and currently Read 180 Teacher | “The literacy program went through some changes when Ms. Tracy (left), she actually trained all of us. So we’re going through some changes. My job really doesn’t change too much. I think because I’ve always handled middle school. So now we just have somebody who does intermediate and somebody that does primary and then one lady kind of coordinates all of us…I’m middle school, so I’m 6th, 7th and 8th. Mrs. Kelly is 4th and 5th. Mrs. James is, she’ll take care of 1st, 2nd and 3rd, and then Mrs., also Mrs. Kelly is really kind of helping to coordinate and Miss Walsh is also a part of the team but she’s back in the classroom so she won’t be able to do too much. But she’ll help out. But the main functions, the main people who will run it is Mrs. Kelly, myself and Ms. James.” (Interview, 12.7.01) |
| **Ms. James**  
Formerly and currently primary librarian | “They need me in it (the committee) because in our primary building they need somebody. Um, what they’re trying to do is to make sure that everybody is on the same page. And Ms Tracy left (in August) and she kind of kept everybody together… No. No, no, no. No, no. I’m the librarian, I’m not, that’s why I’m telling you I don’t know exactly what the role (is), or what whoever dreamed up the committee thinks I’m going to do. No. I know what the librarian’s supposed to do. And so I’m very excited about the children reading and… the kids are going to come in here and do (what) some of them are doing now,” (she points to her students who are all reading books). (Interview, 12.7.01) |

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34 Scholastic intervention program used at Adams with struggling readers in 6th grade.
## Appendix D.

### Language arts testing schedule (Topic list) 2000-2001

<table>
<thead>
<tr>
<th>Name</th>
<th>Testing Date</th>
<th>Test Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 wk. Tests</td>
<td>Aug 29, 2000</td>
<td>ISAT pre-test (grades 3, 5, 8) – Miscue Analysis (grades 1, 2)</td>
</tr>
<tr>
<td>5 wk. Tests</td>
<td>Sept 20, 2000</td>
<td>Story Grammar Graphic Organizers/ Narrative Writing (graded using pass/fail scale)</td>
</tr>
<tr>
<td>15 wk. Tests</td>
<td>Nov. 29, 2000</td>
<td>Practice Picture and Story Iowa Test Making Connections Graphic Organizers/ Expository Writing (graded using pass/fail scale)</td>
</tr>
<tr>
<td>25 wk. Tests</td>
<td>Feb. 21, 2001</td>
<td>Practice ISAT/ Persuasive Writing (graded using pass/fail scale)</td>
</tr>
<tr>
<td>30 wk. Tests</td>
<td>March 28, 2001</td>
<td>Practice ISAT/ Persuasive Writing (graded using 6 pt. state rubric) Kindergarten Checklist</td>
</tr>
<tr>
<td>35-40 wk. Tests</td>
<td>April/May</td>
<td>ISAT/Iowa Test</td>
</tr>
</tbody>
</table>

Kindergarten Checklist