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Challenging the Assumption of Rationality in Performance-Based Accountability Systems: A Comparative Case Study of School and District Decision-Making Approaches

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Challenging the Assumption of Rationality in Performance-Based Accountability Systems: A Comparative Case Study of School and District Decision-Making Approaches

Abstract

CHALLENGING THE ASSUMPTION OF RATIONALITY IN PERFORMANCE-BASED ACCOUNTABILITY SYSTEMS: A COMPARATIVE CASE STUDY OF SCHOOL AND DISTRICT DECISION-MAKING APPROACHES

Jessica K. Beaver

Richard M. Ingersoll

Performance-based accountability systems provide schools and districts with detailed student performance data on the front end and demand that schools meet rigorous minimum proficiency thresholds on the back end or face a set of sanctions that ratchet up year after year. The process by which schools and districts make decisions for improvement in order to meet these requirements, however, is opaque at best. Each district is like an island unto itself, with its own political context, financial constraints, demographic and economic makeup, human capital, and social dynamics. Especially given the immense amount of money spent every year in improvement grants to districts, as well as the plethora of vendors touting new products, there is a clear imperative to understand how schools and districts select particular programs or strategies for improvement above other options.

In this dissertation study, I apply the literature on search and decision-making in other disciplines to the field of public elementary and secondary education, paying particular attention to schools and districts under pressure to improve from performance-based accountability systems. I employ a comparative case study approach, using three consecutive years of data from a stratified random sample of eight schools (nested within their districts) in Pennsylvania. I find that schools and districts are under immense pressure to demonstrate student achievement gains, and that this pressure extends to all phases of the decision-making process, including problem identification, search, and the decision point. Despite this pressure, I find that schools do not descend into chaos when making decisions for improvement - they generally approach the decision-making process in a linear manner and let building-level administrators employ a "middle-out" approach to decision-making. But on the other hand, schools are far from purely rational organizations, as there are forces internal and external to the school or district that constrain decision-making processes. Although these constraints affect all stages of the decision-making process, they have the most severe influence on the search phase. Finally, I create a framework that advances the literature on decision-making in education by establishing four distinct typologies of decision-making approaches.

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ACCOUNTABILITY SYSTEMS: A COMPARATIVE CASE STUDY OF SCHOOL AND

DISTRICT DECISION-MAKING APPROACHES

Jessica K. Beaver

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ABSTRACT

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In this dissertation study, I apply the literature on search and decision-

making in other disciplines to the field of public elementary and secondary

education, paying particular attention to schools and districts under pressure to

improve from performance-based accountability systems. I employ a comparative case study approach, using three consecutive years of data from a stratified random sample of eight schools (nested within their districts) in Pennsylvania. I find that schools and districts are under immense pressure to demonstrate student achievement gains, and that this pressure extends to all phases of the decision-making process, including problem identification, search, and the decision point. Despite this pressure, I find that schools do not descend into chaos when making decisions for improvement – they generally approach the decision-making process in a linear manner and let building-level administrators employ a "middle-out" approach to decision-making. But on the other hand, schools are far from purely rational organizations, as there are forces internal and external to the school or district that constrain decision-making processes. Although these constraints affect all stages of the decision-making process, they have the most severe influence on the search phase. Finally, I create a framework that advances the literature on decision-making in education by establishing four distinct typologies of decision-making approaches.

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CHAPTER 1: INTRODUCTION

Why Study Decision-Making in Education?

The culture around school improvement is both expensive and complex.

Walk into an exhibition hall at any education-related conference and scores of

vendors are eagerly hawking their products, asserting that their products are

aligned, research-based, and will measurably boost student achievement. Not only

do these products come with hefty price tags, but there is also a great deal of

complexity involved in selecting a particular product as a strategy for school

improvement. New programs typically require that schools provide professional

development to teachers and other classroom-level personnel, meet community and

school board expectations, and contain the appropriate mixture of components that

– school leaders hope – will improve student achievement.

Given the high stakes associated with decision-making in schools and school

districts, one might assume that administrators spend a great deal of time and effort

selecting the right programs to fit the needs of their students. In some cases, that

assumption is correct. Some schools task a team to look at student performance

data, conduct brainstorming sessions for possible solutions to identified problems,

bring in various vendors for hands-on demonstrations of new potential products,

and formally present their choice to the school board before they adopt a new

improvement program. But there is an alternative scenario as well, one in which an

administrator discovers that her school has failed to meet performance targets one year, and solves this problem by calling a friend in a neighboring district and asking, "what do you use?" She then unilaterally purchases the same product, with very little vetting of the new program's alignment or fit with her district's unique context or needs.

The variation in these two approaches – and there are, of course, many more approaches to decision-making than just these two – may not seem striking if one were to view schools as akin to small businesses. After all, some businesses run their operations in a tightly controlled manner with formal frameworks that guide their decisions, whereas others operate in a more laissez-faire manner, letting new trends and ideas influence their decisions. But schools are not businesses; they are special types of organizations with unique contextual factors that shape their operational characteristics and abilities. Because public schools are funded by taxpayers, they must answer to taxpayers. Because they serve an underage clientele whose participation in the system is mandatory, they have a certain amount of freedom in their decision-making process, but certain restrictions as well. And because the organizational hierarchy of public education is notoriously flat, schools often develop a divide between administrators and teachers that can create disconnects during the decision-making process. Perhaps most importantly, because schools must answer to districts, states and the federal government, there exists strong top-down pressure to improve performance on a specific and targeted outcome measure: the state standardized test. Performance-based accountability

systems demand that schools meet rigorous achievement thresholds on these tests or face a set of sanctions that ratchet up with each passing year of underperformance. The fundamental assumption of performance-based accountability is that providing information to schools and districts about their students' academic performance will push them to improve, so long as this information is coupled with strict performance guidelines and benchmarks, as well as incentives to change.

In this dissertation, I examine in depth the relationship between accountability pressure and the decision-making process in schools and districts. This area is ripe for inquiry, as the means by which schools and districts process top-down pressure for improvement, search for solutions to identified achievement problems, and ultimately make decisions for improvement remains somewhat of a mystery. The reason for this is that performance-based accountability systems leave this process intentionally vague, assuming that states and local education entities know best how to improve the academic performance of their own students. Because each district is like an island unto itself, with its own political context, financial constraints, demographic and economic makeup, human capital, and social dynamics, the resulting decision-making processes may range from collaborative, evidence-based decisions to uninformed word-of-mouth recommendations and everything in between. But although the law might encourage a diversity of approaches to decision-making for improvement, it can be very frustrating trying to understand just how a particular program or strategy for improvement was selected

above other options. Especially given the immense amount of money spent every year in improvement grants to districts, as well as the plethora of vendors touting new instruments, curriculum materials, and other tools, it would be useful to understand how schools and districts make decisions for improvement. More specifically, it would be useful to understand how schools and districts search for solutions to identified problems and then translate that search process into decisions about new programs or strategies for improvement.

Unfortunately, the literature on search and decision-making in public K-12 education is fragmented at best, and at worst is even contradictory. For example, if we are to take accountability theory at its word, the decision-making process in schools and districts is logical, orderly, and strictly guided both by input data and desired outcome measures. On the other hand, another popular line of thinking describes decision-making in public education as completely chaotic and lacking any real forethought or methodology. Accepting one theory over another has important implications for policymakers and educators alike: If we believe that the decision-making process is rational and logical, then it follows that schools and districts with similar characteristics will follow roughly the same path toward their eventual decisions; but if we believe that decision-making is utterly chaotic, it seems that very few conclusions can be drawn at all.

Although some literature exists on the various barriers to successful search processes in organizations, few studies pay specific attention to the search process, choosing instead to analyze the decisions themselves or their implementation. This

dissertation attempts to fill those gaps by applying the literature on search and decision-making in other disciplines to the field of public K-12 education, with particular attention paid to schools and districts that are under pressure to improve within the context of performance-based accountability systems. The theoretical framework draws upon several different frames for analyzing decision-making in public education, including rational choice theory, bounded rationality, organizational theory, sense-making theory, and the garbage can model of decision-making. The primary goal of the study is to create a framework that integrates the various lines of thinking into a coherent and comprehensive model for analyzing search and decision-making in schools and school districts.

Accordingly, I investigate three main sets of research questions. The first set of questions asks descriptive questions around each of the phases of the decision-making process – problem identification, search, and the decision point. I pay close attention to the search phase in particular, asking how schools and school districts search for solutions to perceived or formally identified needs for improvement. The second set of questions asks about the degree to which decision-making in education can be characterized as chaotic. Accordingly, I ask about the various factors that constrain the decision-making environment. Finally, I offer a third question, which is whether a new framework might be created that characterizes school and district search processes based on the underlying characteristics of the organization.

To answer these questions, I employ a comparative case study design. The sample for my study is eight schools and their corresponding district offices in Pennsylvania, the majority of which were identified by the state as "in warning" for failure to meet accountability targets following the 2007-2008 school year. I use three consecutive years of in-depth case study interviews from school and district administrators, staff, and teachers to home in on how these people approach the decision-making process, as well as the factors that support or hinder their efforts. In total, there were 212 interviews with 144 individuals over the three-year period. For my cross-case analysis, I use a series of case-ordered descriptive matrices, which allow me to detect trends and differences across cases. The variables for case-ordered descriptive matrices correspond directly to my research questions.

The structure of my dissertation is as follows: In this chapter, I review a range of decision-making approaches – from the rational to the chaotic – that are presented in the vast, multi-disciplinary literature on decision-making. I explain how each approach treats the search component of the decision-making process. I also explore the decision-making literature that is explicit to schools and districts that operate in the context of federally mandated accountability policies, such as the Elementary and Secondary Education Act (ESEA) and No Child Left Behind. In Chapter 2, I turn my attention to the particulars of my dissertation study and present my research questions and my qualitative comparative case study approach to addressing them. These questions aim to fill existing gaps in the literature base, particularly with regard to the search component of decision-making in public

education. I also detail my study sample, data collection, and analysis approach. In

Chapter 3, I present each of the eight case study districts in my sample. Chapters 4

and 5 detail the findings from my research, both the descriptive work and the

analytic task of establishing typologies of school approaches to decision-making. In

Chapter 6, I present a framework on school decision-making. Finally, in Chapter 7, I

discuss the various implications of my work for policymakers and practitioners and

identify areas for further exploration in the future.

Conceptual Framework

To frame my work, I first explore the general literature on decision-making,

which is grounded in several different disciplines, including economics, sociology,

and psychology. I then explore the specific literature on decision-making in public

K-12 education.

General Decision-Making Literature. There exists in the literature a broad range

of views about how individuals and organizations are impacted by their

environments as they make decisions. To explain the range of theories, I create a

"Rationality-Chaos Spectrum" (Figure 1.1) and begin my discussion at the left of the

spectrum and make my way to the right, taking care to explain the inherent

assumptions of each theory, as well as the implications that each theory has for

search and decision-making in organizations.

Figure 1.1

The Rationality-Chaos Spectrum
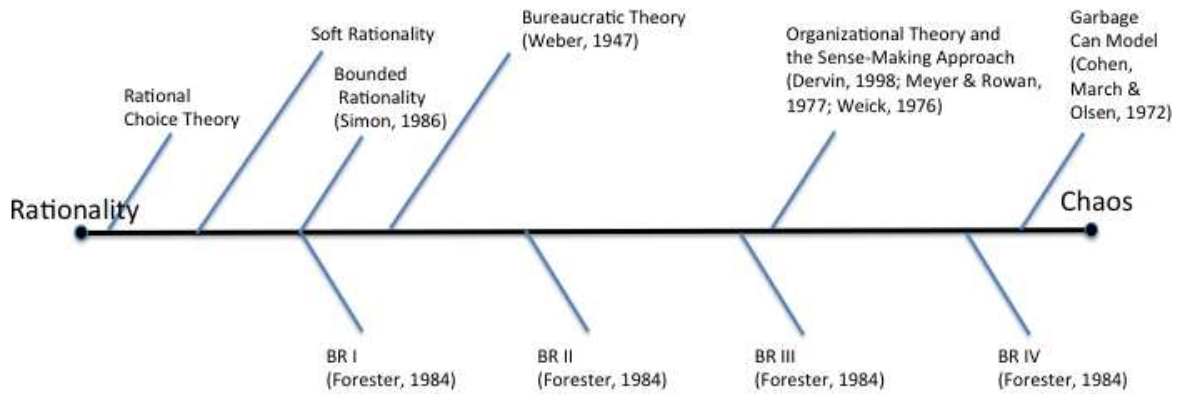
The "classic" model of decision-making – Rational Choice Theory – presents a

perfectly rational individual whose sole focus in decision-making is to optimize his

behavior so that the decision itself is the best possible outcome (Simon, 1955).

There are a number of assumptions that Simon outlines about this individual: he has

perfect information about his environment, he has a set system of ordered

preferences (that is, he knows what he likes and never wavers), and he is capable of

performing whatever calculations are necessary to come to the optimal solution.

Simon also outlines some assumptions about the environment itself, in which the

number of options on the table is limited, payoffs are clearly defined, and the

preference ordering of those payoffs is set and stable. Given these conditions, the

individual is expected to examine the various options on the table (his

"alternatives"), perform any necessary optimization calculations, and then arrive at

the optimal solution. Furthermore, the decision-making process follows a strict order (Bass, 1983; Simon, 1955): The recognition or acknowledgement of a deficiency; the search for solutions; a decision point; and, finally, action. The order of operations is fixed, and the improvement process always begins with the identification of the problem.

The many critiques of Rational Choice Theory have been dubbed part of the "soft rationality" literature (Bryman, 1984) because they tweak the assumptions inherent in the purely rational model. To simplify what is an extremely large body of literature on soft rationality, I organize the literature into two distinct categories. The first category presents the flaws of rational choice theory at the level of the decision-maker, pointing out the many ways in which human beings are incapable of making perfectly rational decisions due to their inherent biases and mental limitations. Simon's (1972) concept of "satisificing" or Tversky and Kahneman's (1974) description of decision-making heuristics would all fit into this first category. The second category tackles the same topic at the level of the environment, illustrating how the decision-making context can become constrained by various contextual elements. Although both perspectives present valuable contributions to the decision-making literature, I focus primarily on this second category because it is more readily applicable to the context of decision-making in organizations, such as schools and school districts. This environmental view posits that, even if decision-makers were perfectly rational (that is, completely unaffected by the biases and mental limitations discussed above), their ultimate decisions might be

suboptimal because the environment limits their ability to make informed decisions.

Soft rationality theorists assert that the luxuries of information and optimization are

rarely present in actual decision situations (Gross, Kirst, Holland & Luschei, 2005;

March, 1994; Simon, 1972). Very often, decision-makers are forced to do the best

with what they have, which may involve an incomplete set of options, constraints or

biases regarding optimality (i.e. the "politics" of organizations), or incomplete

information about the implications or implementation of decisions (Forester, 1984).

Simon (1972) combines the dual features of soft rationality – internal

preconceptions and external contextual constraints – into one cohesive theory

called Bounded Rationality, which has become a grounding theory in the search and

decision-making context of organizations. The fundamental assumption of Bounded

Rationality is that decisions occur under conditions of uncertainty (March, 1994;

Simon, 1972). Simon (1972) identifies several ways to conceptualize the theory:

First, the organization might not fully understand the consequences of the decision,

which may lead to inaccurate problem identification; second, the organization might

have imperfect or incomplete information about the potential alternatives, which

indicates a search deficiency; and third, the complexity of the environment itself

might obscure the organization's ability to make a rational choice, which may lead to

a poor decision. Given these constraints, the organization is highly likely to satisfice

(Guth, Levati & Ploner, 2010; Simon, 1972) and a suboptimal outcome may result.

The theory of Bounded Rationality is intuitively appealing – it makes sense

that contextual factors would influence behavior, preferences and, ultimately,

decisions. Numerous theorists have expanded upon the theory as well, explaining

how it might affect the decision-making process. For example, Vanberg (2008)

posits that a person or organization might be bounded by societal norms and rules

in addition to the traditional bounds of information and time. Sen (1972) goes even

further, asserting that, even if the purely rational optimizer were to exist, he would

be a profoundly foolish individual whose actions would most certainly land him in

undesirable positions. In a different application of Bounded Rationality, Forester

(1984) presents a formal framework for determining the degree to which politics

can affect organizational decisions, particularly for public administration and

management organizations. He presents four different variants of bounded

rationality: BR I, II, III and IV, which range from a scenario with only one decision-

maker and a setting that is partially open to the environment, to a scenario with

multiple actors in which conflict is ubiquitous and one interest group usually has

more power over others, leading to coercion. Forester's model shows that bounded

rationality is not a uniform concept; rather rationality can be bounded both by

organizations and by context, and it matters greatly who are the members of the

decision-making group, how the problem is defined, the organization's structure

and hierarchy, and the politics of the decision itself.

Unlike Bounded Rationality, organizational theory is less concerned with

environmental bounds on behavior than it is with the internal constraints and

norms that influence organizational behavior. Organizational theory holds that the

primary bound on organizational behavior is bureaucratic structure. According to

Weber's (1947) model of bureaucratic behavior, organizations are likely to turn to a bureaucratic structure as a means of imposing order and rationality on their decision-making and production processes. Bureaucracies are organizations with strict hierarchies, clearly delineated worker responsibilities, formalized rules and regulations, and standardized training for workers. In essence, Weber's bureaucratic theory describes an organization that has placed bounds on its own environment so as to ensure rational outcomes.

Bureaucratic organizations may not be aware of the degree to which their internal structure limits their decision-making ability. Weick (1976) describes public bureaucratic organizations as "loosely coupled," which he defines as the sizeable difference between the intentions and the actions of bureaucratic organizations. Organizations tend to over-rationalize their actions and it therefore becomes very difficult to determine whether the decision-making process in a public organization is highly rational or, as he suspects, highly irrational and chaotic (Meyer & Rowan, 1977; Weick, 1976).

In his later work, Weick (1995) suggests that organizational theorists should adopt a "sense-making approach" to studying organizational decisions. The goal of sense-making, he says, is to explain loose coupling by characterizing the entire process by which organizations come to a decision. Weick, Sutcliffe, and Obstfeld (2005) state that the sense-making process, though non-linear, usually begins with chaos. In this scenario, members of an organization are faced with an issue or event that may be poorly understood or even ignored, then they begin to make sense out

of that which they do not completely understand, then they begin to take into account the social and cultural context in which they operate, and finally they ask the essential question: "what should we do next?" With these concerns in mind, the organizational actor must use various forms of communication to try to bring other organizational actors into a shared understanding of the problem and potential solutions.

Although the steps involved are not terribly different from the Rational Choice model of decision-making (i.e. problem identification, search for solutions, action, and implementation), the sense-making process is different because it is decidedly non-linear (Weber & Glynn, 2006; Weick et al., 2005). In other words, the decision-making process is dynamic, iterative, and fluid – just like the people making the decisions.

Finally, I arrive all the way to the right of the spectrum, where Cohen, March and Olsen (1972) offer a formal organizational decision-making model based on the premises of bounded rationality and loose coupling, which they call the "Garbage Can Model" of decision-making. Their premise is similar to that of Weick and Meyer and Rowan, but more extreme. They state that organizations are little more than organized anarchies where preferences are problematic, technology is unclear, participation is fluid, and, as a result, choices are fundamentally ambiguous. In their model, the decision situation or "choice opportunity" is described as a garbage can in which both problems and solutions are dumped. The decision – or output – therefore depends on what the garbage consists of at the particular moment, the

mix of cans available, and the speed with which garbage is collected. As the image of a garbage can suggests, decisions made under conditions of ambiguity represent an indistinguishable mix of the various different "streams" that contribute to decision-making within an organization, which include problems, solutions, participants, and choice opportunities.

Cohen et al. use the Garbage Can Model to explain how straying from the rational model affects decision-making in organizations. They assert that, while some problems might receive full consideration by the organization and attempt to follow a set procedure, these resulting decisions are likely to be haphazard in nature, and are not necessarily aligned to organizational goals. Another effect on decision-making is that the streams going into the garbage can – again, the problems, solutions, participants, and choice opportunities – may interact with one another. Adding a participant or putting a new option on the table, for example, could drastically change the nature of the output. This view stands in stark contrast to the traditional deductive model, in which the decision-making process is cyclical and distinctly non-interactive. Thus it becomes clear that organizations operating under the garbage can model do a poor job of resolving problems, as choices are not made by preference-ordering or optimization, but rather by chance and pre-existing conditions.

Decision-Making in Education. Turning now to public education, it is clear that schools and school districts contain a fair amount of organizational complexity.

First, educational decisions usually involve multiple decision-making entities, including school and district administrators, school board members, PTAs, and teachers unions. Additionally, public education is subject to government oversight at the federal, state and local levels. Top-down mandates may conflict with local decisions, and there are various structures or "bounds" that shape the ways in which local decision-makers can act. Federal performance-based accountability measures, for example, mandate a strict accountability system that sets proficiency minimums linked to student performance on state standardized tests, even though this proficiency threshold may conflict with the educational goals of school and district personnel. Finally, there are numerous other bounds on the decision-making environment in schools and school districts that lend additional complexity, for example the length of the school year, school budgets, and leadership structures.

In an effort to relate the vast literature on decision-making to the educational sphere, it is important to begin again with Rational Choice Theory. In the educational paradigm, the theory of accountability can be seen as a practical application of Rational Choice Theory, because it assumes that a clearly identified problem will cause schools and districts to optimize their behavior. The theory of performance-based accountability holds that public attention to student performance on standardized measures will motivate teachers and school leaders to adopt strategies that will be more successful for their students (Stecher et al., 2008; Hamilton, Berends & Stecher, 2005; Linn, 2005). Accountability theory's linear framework describes how the inputs from performance-based accountability

systems lead schools and districts to select improvement strategies for their classrooms, all of which are intended to generate positive change in student performance.

Since performance-based accountability measures have become the norm in education policy, many education experts have exposed the unrealistic expectations and unintended consequences that these systems place on schools and school districts. Among the assertions are that they limits instructional content to tested concepts (Cochran-Smith & Lytle, 2006); give incomplete or confusing information to the implementers of new policies (Spillane, Reiser & Reimer, 2002); place too much attention on students in the middle of the ability spectrum while ignoring those students on the either ends of the spectrum (Kreig, 2008; Booher-Jennings, 2005); and stigmatize poor, learning disabled, non-English speaking, and racial minority students (Kantor & Lowe, 2006). These critiques suggest a fundamental misalignment between the goals of accountability theory and the realities of schooling. Looking back at the Rationality-Chaos Spectrum, it is possible to identify various internal and external bounds on decision-making in public education that might compromise the decision-making process outlined in accountability theory.

First, schools and school districts are bound by their status as a special type of bureaucracy. Although they may appear to be Weberian bureaucracies, the hierarchical structure in schools is actually quite flat. Efforts to make schools into "rational organizations" are therefore thwarted due to the very nature of the schools themselves. The average school most likely has multiple conflicting goals, multiple

actors and constituents who have a stake in the process, a deeply entrenched social culture, and unclear methods for how to best meet their goals (Ingersoll, 2003; Bidwell, 2001; Lortie, 1975). As a result, the school in general – and the teaching profession in particular – are likely to fit with the "loose coupling" scenario that Weick (1976) and Meyer and Rowan (1977) predict.

Second, the specific characteristics of the school or district can shape the decision-making process. Abelman and Elmore (1999) assert that the personal preferences, responsibilities, and relationships of school and district staff – what they call the "internal accountability" of an educational organization – is separate from externally-generated performance-based accountability. Sense-making theorists echo these claims and explain that people come into new situations with their own understandings, values, beliefs, knowledge, and attitudes (Coburn & Talbert, 2006; Spillane et al., 2002). Accordingly, the internal culture of a school or organization can shape the decision-making process by redefining the problem (Abelman & Elmore, 1999), limiting the search process to familiar solutions (Tversky & Kahneman, 1974), and opting for familiar solutions at the decision point (Coburn & Talbert, 2006; Spillane et al., 2002).

Third, forces external to the school building can constrain the decision-making process. Because schools and school districts are bureaucratic organizations, they are subject to multiple levels of governance and oversight. Schools answer to districts, which answer to states, which in turn are accountable under NCLB to the federal Department of Education. Furthermore, schools and

districts are financed almost entirely by public funds, which means that they must

answer to taxpayers and other stakeholders. The decision-making process is

therefore shaped by both policymaking and politics. In terms of policymaking,

decisions about new programs or instructional strategies may be made at levels

higher than that of the school or district, and then simply be handed down to the

local level for implementation. These decisions, which often take the form of

mandates, may conflict with the internal culture of the district or contradict

previous decisions about instruction made at the local level (Abelman & Elmore,

1999). In terms of politics, schools and districts are affected by the political agendas

of policymakers, politicians, and other education stakeholders at all different levels

of government. At the local level, the personalities and leadership styles of school

administrators, district administrators, school board members, and city employees

may shape the problem identification, search, and decision processes regarding new

programs or instructional strategies. Even just one dominant personality can have a

big impact on the direction of the organization (Coburn & Talbert, 2006), and

political schedules (for example, election years) can also influence the degree to

which certain stakeholders place demands on the decision-making process.

Additionally, high-level leadership changes can drastically alter the problem

definition of the decision-making process, as each administrator will likely have a

different strategic plan (Hess, 1999). The collective human capital of the district

office has also been shown to play a role in either constraining or encouraging the

decision-making process at the district level. Hannaway and Kimball (1998) find

that larger district offices are better at promoting performance-based reform –

including influencing school selection of improvement strategies – than are smaller

districts.

Finally, a host of other external issues place demands on the decision-making

process in schools and school districts alike. Time, for example, is a common bound,

as the school calendar makes it difficult for administrators to meet or for teachers to

train on new materials (Gross et al., 2005). Additionally, limited budgets –

especially during times of economic hardship – hamper decision-makers' abilities to

select the programs they feel might be the best fit for students and teachers. And

finally, the opinions and attitudes of the community may impact decisions made at

the school or school district level. Parents, community activists, and other

stakeholders frequently raise concerns about the delivery of instruction, leadership,

and school organization issues, which may serve to set the agenda for future

decisions (Kingdon, 1995).

The various internal and external bounds on decision-making affect all four

components (again: problem identification, search, decision point, and

implementation) of the decision-making process in education to varying degrees.

The literature on search, while not as plentiful as that of the other phases, suggests

that it might be the phase most impacted by internal and decision-making

constraints.

First, research shows that the information available to decision-makers may

be convoluted, inaccessible, incomplete, or even incorrect. Gilovich (1991) explains

that information may be ambiguous, incomplete, or messy, leading people to make decisions that lack a true foundation of knowledge. In their discussion of research-based knowledge, Nelson, Roberts, Maederer & Johnson (1987) state that the meaningful impact of research on practice is limited by the poor presentation of information and research-based findings. The "two communities" model of information utilization posits that the research community has a poor understanding of the practitioner community, and that practitioners would be better served if research were made more accessible and written more clearly (Cohen & Levinthal, 1990; Nelson et al., 1987). Furthermore, practitioners do not always have access to high quality, rigorous research conducted by impartial investigators – and, in some cases, the research findings may even be specious. Research on teacher turnover by Ingersoll (2003b), for example, contradicts decades of previously held "research-based" beliefs on the causes of the perceived teacher shortage crisis, finding that teacher turnover is the culprit for teacher shortages, and not inadequate teacher recruitment, as was previously believed.

Nevertheless, the education literature focuses on evidence-based decision-making, which is the study of how school leaders make use of data, including state data, school data, and student-level data to inform their decisions. A number of major studies delineate the various ways that schools make use of technical information for decision-making (e.g. Kerr et al., 2006; Marsh, Pane & Hamilton, 2005; Supovitz & Klein, 2003; ECS, 2002). Along with these lists, the authors also name various barriers to effective data use. Coburn and Talbert (2006), for

example, find that varying perceptions about the utility of data use can impact

districts' decisions for improvement. Numerous authors (Doyle, 2003; O'Day, 2002;

Stringfield, Reynolds & Schaffer, 2001) find that districts often lack the necessary

skills to interpret data in a way that is meaningful for school improvement efforts.

And Feldman and Tung (2001) find that school and district administrators lack the

necessary time to use data to inform decision-making.

Second, the education literature also suggests that social science research is

only one source of knowledge that school and district administrators may seek

during the decision-making process. Although Gilovich (1991) says that second-

hand information can compromise the decision-making process, the education

literature asserts that advice from friends and colleagues can be a valid source of

information. Honig and Coburn (2007) find that district administrators often look

to trusted sources within the district – for example, principals, teachers, or fellow

administrators – to inform their improvement decisions. In other cases, they may

look to external sources in the community such as neighboring districts or parents.

Although some might discount the validity of the information provided by local

sources, decision-makers may highly value knowledge generated from within their

network of influence.

Third, Rosenkopf and Almeida (2003) find that organizations limit their

search process both geographically and technologically, opting for solutions that are

both local and familiar. These "exploiter" organizations (March, 1991) look to past

behaviors and experiences to guide their search process rather than looking

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outward for innovative new practices. DiMaggio and Powell (1983) warn that, in the long run, organizations that look inward for solutions will reach a critical mass of innovation and then stagnate, closing themselves off to further change. Cohen and Levinthal (1990) further explain that learning is a cumulative process, meaning that each bit of newly acquired knowledge builds off of preexisting knowledge in the organizational context. Organizations possess a limited "absorptive capacity" for new information, and therefore information that is already internalized as part of the organizational culture will be prioritized over new externally generated information. These claims are validated in the education literature as well. Honig and Coburn (2007) and Honig (2003) find that district administrators may ignore externally generated information if the information does not fit into their existing understandings. Similarly, in their study of high school response to accountability demands, Gross et al. (2005) find that high schools limit their search processes due to a "benign neglect" of outside ideas. They find that scheduling issues, time limitations, and the actions of neighboring districts are heavy determinants of the breadth and depth of the search process in high schools.

Fourth, the search process is highly susceptible to variations in school and district context. Elmore (2001) suggests that the search process will vary depending on the setting and context of the search. In his study of high schools, Elmore says that the search process in "well-situated schools" follows a relatively stable cycle of improvement, whereas what he terms "target" schools engage in superficial searches to solve superficial problems. At the district level, Honig and

Coburn (2007) find that the search process varies depending on who is conducting

the search. Administrators whose job it is to search for new information and

knowledge are more likely to conduct thorough searches, whereas other

administrators may undertake more haphazard and less thorough searches (Coburn

& Talbert, 2006). The search process may also vary depending on the goal of the

search. District decision-makers may use external searches only as a means to

establish the legitimacy of an impending reform, rather than as a true search for

new ideas (Honig & Coburn, 2007). The social capital of the organization may also

have an impact on the search process. Organizational structures that support high

levels of collaboration, mutual trust, and the free flow of ideas are more likely to

engage in robust searches for new ideas than are organizations with low levels of

these characteristics (Honig & Coburn, 2007; Coburn & Talbert, 2006; Honig, 2003;

Spillane & Thompson, 1997). Social capital external to the organization may play a

role as well, as schools and districts with a large social network of trusted colleagues

have access to a greater circle of ideas and knowledge (Honig & Coburn, 2007;

Spillane & Thompson, 1997).

A Conceptual Map. The vast literature on Bounded Rationality, Organizational

Theory, and the Garbage Can Model strongly suggests that the context of schooling

makes it difficult, if not impossible, for rationality to triumph. The degree to which

the decision-making process is constrained does depend, however, on the

complexity of the school or district (its internal bounds) as well as the

organizational decision-making environment (its external bounds). The conceptual

map (Figure 1.2) depicts the complexity of the relationship between school or

district organizations and their decision-making environments. The map begins

with inputs from the performance-based accountability system and moves through

the district and school levels.

Figure 1.2

A Conceptual Map of Decision-Making Context in Education
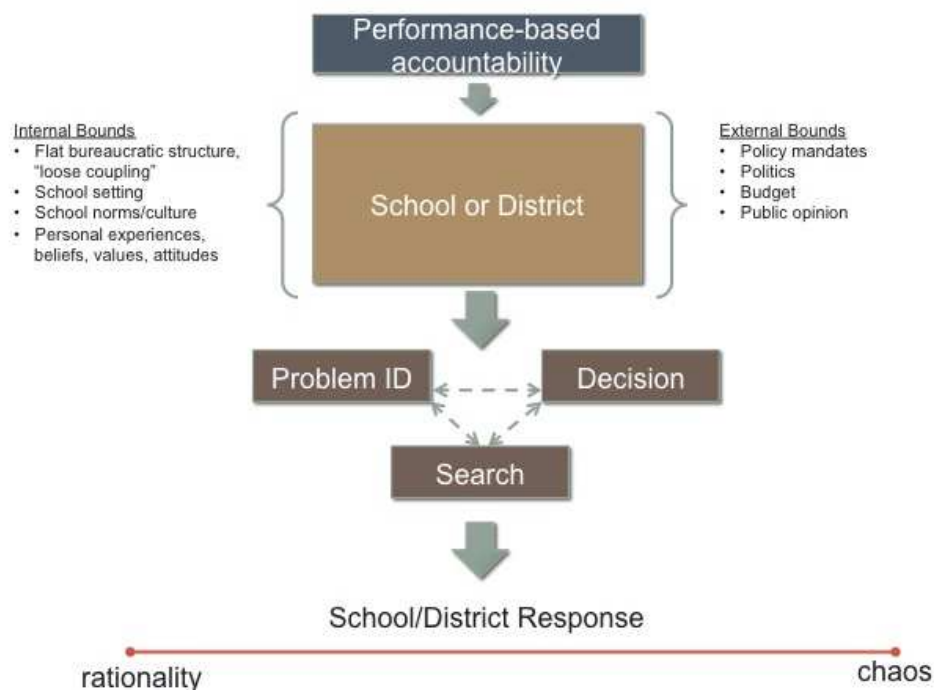
Within this frame, the school or district, which is bounded by internal and external

factors, can approach the decision-making process in several different ways. If it

were to follow the Rational Choice Theory order of events, it would begin by

identifying the problem, then it would search for solutions, and then it would make

a decision. Alternatively, however, the school or district could follow a pattern more akin to the Garbage Can Model and begin with the decision itself and move backwards through the steps, or skip the other steps all together. Finally, the school or district could fail to come to a decision at all. In all cases, the product of this process will lead to some type of school response (and note that inaction is considered to be a valid type of response). These decisions can take many different forms, including decisions about school organization, process, purchases, instructional focus, and other forms.

In accordance with the sense-making approach, the map depicts an organization's navigation of the problem identification, search, and decision stages as an iterative process. The school or district may refine or revisit any or all of the three components of the decision-making process as it works its way to a final response. The map also omits the fourth component of the decision-making process – implementation – as this component is more of an end product or outcome of the process rather than an intermediate component.

The school or district's final response can then be categorized along the Rationality-Chaos Spectrum on the basis of the following factors: the boundedness of the organizational structure, the boundedness of the external environment, and the manner in which the organization approaches the problem identification, search, and decision process.

CHAPTER 2: DATA AND METHODS

Research Questions

Although the literature on decision-making in education is vast, there exist

contradictions and evidence gaps in two specific areas. First, authors disagree about

whether the special bureaucratic structure of schooling is a positive or negative

influence on decision-making in education. Some authors (Bidwell, 2001; Weick,

1976) claim that the loosely coupled nature of schools encourages stability, allowing

some changes to occur without toppling the entire organizational structure. March

(1978), on the other hand, states that the flat bureaucratic structure of schools is a

negative force on decision-making because it makes the objectives of the decision-

making process fundamentally ambiguous. When administrators act independently

from one another, they fail to learn from shared experiences, fail to understand the

technology of schooling, and misconstrue the goals of new improvement efforts.

Along these same lines, there is a lack of empirical evidence about the

relationship between the organizational characteristics of the school or district and

the decision-making environment. Although some authors (e.g., Honig & Coburn,

2007; Coburn & Talbert, 2006; Elmore, 2001) begin to parse apart school or district

characteristics that may lead the organization to make more informed decisions,

more specific work is needed that compares and contrasts the decision-making

behaviors in a wide variety of educational environments. And because most of the

literature on decision-making in education is conducted at either the school level or

the district level (but rarely examined in conjunction), it would be helpful to study schools and districts as nested organizations.

Second, the search component of decision-making is under-explored in the field of education. Although the search process receives some attention at the school level by Gross et al. (2005) and at the district level by Farley-Ripple (2008) and Honig and Coburn (2007), existing research leaves some important questions unanswered. It would be helpful to know, for example, what administrators and teachers consider to be valid information, whom they rely upon for local information, who is responsible for the search process, and how much accountability pressure changes that process.

Furthermore, there is a critical disagreement in the literature as to whether local information can be trusted. Although some theorists believe that local information is faulty (Gilovich, 1991) and stymies innovation (Rosenkopf & Almeida, 2003; March, 1991), others believe that local information can be a valid source of new ideas. Honig and Coburn (2007) find that districts often lean on information from colleagues both internal and external to the district office when they make decisions for improvement. In some cases, advice and information from these trusted sources may be viewed as even more valid than some research-based findings, because practitioners value face-to-face interactions and easily understood explanations of new ideas (Honig, 2003; Nelson et al., 1987). Research on the applicability of locally generated knowledge is sparse, however, and this area should be explored more fully.

To address these gaps, I propose the following research questions for my dissertation:

RQ1: How do schools approach each phase of the decision-making process (including problem identification, search, and the decision point)?

RQ2: How chaotic is decision-making in education?

  a. What internal and external factors constrain the decision-making process in schools and districts, and to what degree do they affect the ultimate decision outcome?

  b. Is the decision-making process linear, circular, chaotic, or does it follow a different pattern? At what point during the decision-making process does search come in, if at all?

  c. Where do schools and districts fall on the Rationality-to-Chaos Spectrum?

RQ3: Can a new framework be created that adequately and appropriately fits schools and school district decision-making processes? If so, what organizational characteristics (size, demographics, etc.) are associated with certain types of processes?

Methodology

This study is a project nested within a larger research study, which was funded by a grant from the Institute of Education Sciences (IES) at the U.S. Department of Education, and ran from June 2008 to August 2011. The study was

run out of the Consortium for Policy Research in Education (CPRE) at the University of Pennsylvania and the Principal Investigator was Dr. Elliot Weinbaum. I was a Research Assistant on that project for its duration. The goal of the larger study was to examine schools' responses to No Child Left Behind, particularly which strategies and programs they select when called upon by the law to improve student academic achievement. The larger study had three components. First, we administered a survey to all principals in the Commonwealth of Pennsylvania regarding their accountability status under the law and the various strategies they employ in their schools to improve scores on the state test. Second, in cooperation with the Pennsylvania Department of Education (PDE), we used school-level achievement data to link schools' selected strategies to their achievement outcomes. Finally, we conducted two consecutive years of case study site visits to 11 schools around the state. As part of these visits, we asked school administrators and teachers how the school addressed its shortcomings in particular areas and student subgroups, what strategies it had selected for improvement, and how those strategies were working.

For my dissertation study, I narrow the scope of the original study from the broad question of "what strategies do schools select for improvement?" to the more focused question of "how do schools come to select a particular strategy for improvement over others?" In a sense, however, I also expand the scope of the original study. Although I use the data from the statewide survey and the two years of case study site visits, I expand the case studies to encompass not just schools but

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also the districts in which they reside, since many decisions for improvement are made in conjunction with administrators at the district level.

I employ a comparative case study approach to studying the decision-making processes of schools and school districts. This design is ideal because it allows the researcher to explore a complex social phenomenon (Eisenhardt, 1989; Yin, 1984), in this case the decision-making processes of educational organizations. Yin (1984) writes that the case study approach "investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident" (p. 13). This is especially fitting for my research, as my goal is to understand the specific dynamics surrounding decision-making that exist within a school and its district, and then widening the scope to compare schools and districts to one another based on their defining characteristics. Although the study is primarily qualitative in nature, I also use descriptive data gleaned from the 2009 survey of principals, which asked principals to identify the major areas where they are focusing their improvement efforts in light of the performance-based accountability system set forth in NCLB.

The combination of the descriptive survey data and the in-depth case studies – including both interview data and document analysis – helps to triangulate data, which in turn will increase the internal validity of findings (Eisenhardt, 1989). Furthermore, I approach the case study component of the study design with a strong grounding in the literature, but without preconceived notions of how decision-making can or should occur in the public education setting. As detailed in

the literature review section, there exists a wide range of views about the degree to which decision-making in education is either rational or chaotic. Following the advice of Eisenhardt (1989), my goal is to not take sides, but rather to build theory based on my interactions with my case study interviewees and my review of internal school and district documents.

Sampling Strategy. The eight schools (and their corresponding districts) are all located in Pennsylvania. Focusing on one state has several advantages. First, Pennsylvania is a large state, which makes it relatively easy to select a sample of schools with a diverse set of economic, demographic, and geographic conditions. The stratified random sample consists of a heterogeneous set of schools and their corresponding districts, all with different defining characteristics. Second, hearing from schools and districts in just one state makes it somewhat easier to compare improvement strategies and search processes, because administrators and teachers use a common language that is specific to Pennsylvania. Similarly, schools' experiences with popular programs (for example, test preparation booklets, remediation programs, university affiliations, etc.) make it easier to assess the relative reach of these outside resources to the schools. Finally, the Pennsylvania Department of Education officially expressed its support for the original IES-funded study, specifically the administration of a statewide principal survey, use of school achievement data, and two consecutive years of case study visits to schools.

Beyond these clear advantages, Pennsylvania also provides a fascinating context for studying search and decision-making processes. As outlined in NCLB, states are allowed to determine the pace at which they ratchet up the proficiency requirements for schools, as long as that number reaches 100% by the 2013-14 school year. In the 2007-08 school year – just before the study began -- the proficiency requirement was increased from 45% to 56% in math and from 54% to 63% in reading. Accordingly, many schools found themselves failing to meet the proficiency requirements for the first time, and were declared to be in "warning status" under the law. This provided an excellent opportunity to study how schools react to top-down calls for improvement.

The original school sample for the site visits was designed as a stratified random sample of 48 schools, in which the strata were defined by schools' failure to make Adequate Yearly Progress (AYP) under NCLB in one of the six possible disaggregated student subgroups that are outlined in the law (see Table 1). The subgroups were: 1) making AYP in all subgroups; 2) failing for Special Education students; 3) failing for Limited English Proficient students; 4) failing in a particular race category of students; 5) failing for economically disadvantaged students; and 6) failing in multiple subgroups. Both elementary schools and high schools were included, which allowed for eight schools in each group/category – four elementary and four high schools – to be included in the sample.

Following the selection of the sample in the fall of 2008, the research team conducted in-depth phone interviews with principals in each of the 48 schools so

that we could determine which of the 48 schools would be appropriate for in-depth

case study research, and also to develop a comprehensive protocol for the case

study interviews. Accordingly, we asked principals about the activities underway in

their schools in response to their new "warning status" as well as their general

feelings about performance-based accountability. We did ask some general

decision-making questions during the initial interviews, although generally these

questions didn't go into the specifics of principals' search processes.

Table 2.1

Stratified random sample: Number of schools sampled by school type

AYP Status	School Level		Total
	Elementary	High School	
Made AYP	4	4	8
Failed to make AYP - Whole School (Total)	4	4	8
Failed to make AYP - Special Education	4	4	8
Failed to make AYP - Economically Disadvantaged	4	4	8
Failed to make AYP - Racial subgroup	4	4	8
Failed to make AYP - Limited English Proficiency	4	4	8
TOTAL	24	24	48

From this set of 48 schools, we identified 11 schools for in-depth case study

visits. We chose one elementary school and one high school in each of the six

categories. There was no high school in the Commonwealth of Pennsylvania that

failed to make AYP for the first time that year in the Limited English Proficient

subgroup, which is why the final tally of schools was 11 and not 12. We selected

schools from the original stratified random sample based primarily on the

relationships established with the principals during the phone interviews, but the

selection process also took into account demographic, economic, and geographic

factors as well. The goal was to create an overall case study sample that was as

diverse as possible, representing many different school environments and student

populations throughout the state. Principals who granted access to their schools

were promised $200 as compensation for the visit, as well as reimbursement for any

substitute teachers they might use while researchers were interviewing classroom

teachers. I attempted to gain access to each of the 10 districts that were associated

with the 11 schools in the original case study sample. Two districts declined to

participate in my study, which left me with eight districts in my final sample. The

declining districts were at the extremes of the spectrum in terms of urbanicity – one

declining district was a very urban district, and the other was a very rural district.

Table 2.2

Range of School Characteristics across the Study Sample

School	% FRPL	District Size	Location	District Per-Pupil Expenditure	% Non-White	% Prof. Math*	% Prof. Reading*
HS 1	6.8	Large	Suburban	$10,103	11.8	70	88.5
HS 2	19.4	Small	Suburban	$9,687	6.1	52.6	63.5
HS 3	18.0	Large	Suburban	$9,075	19.3	64.1	74.7
~~HS 4~~	~~34.0~~	~~Large~~	~~Rural~~	~~$12,057~~	~~0~~	~~49.2~~	~~70.1~~
HS 5	27.0	Small	Rural	$9,859	9.1	83.6	85.3
ELEM 1	74.6	Small	Urban	$10,426	40.7	56.3	51.6
ELEM 2	10.6	Large	Suburban	$9,237	4.8	80.3	74.2
~~ELEM 3~~	~~78.2~~	~~Large~~	~~Urban~~	~~$9,399~~	~~95.0~~	~~42.3~~	~~39.9~~
ELEM 4	42.3	Small	Suburban	$8,810	2.1	73.9	73.3
ELEM 5	11.7	Large	Suburban	$12,836	19.9	90	84.9
~~ELEM 6~~	~~82.6~~	~~Large~~	~~Urban~~	~~$9,399~~	~~86.1~~	~~58.4~~	~~46.9~~

* Scores taken from the Pennsylvania state standardized test, the PSSA, from the 2007-2008 school year. Scores represent the percentage of students in the school scoring at "proficient" or "advanced" on the PSSA. In that school year, the school cutoff for making Adequate Yearly Progress, safe harbor and confidence interval measures notwithstanding, was 63% in reading and 56% in math.

While the exclusion of these two districts is clearly a limitation of my study, the eight districts included in the dissertation study are a fair representation of the most common district environments in the state, both in terms of size and urbanicity. Yin (2003) asserts that, when using a multiple case study design, it is important to carefully select cases that can identify contrasting results, but for predictable reasons. My final sample accomplishes this goal, which makes the multiple case study design a robust approach to studying the phenomenon of search and decision-making in the school and district context.

Data Collection Methods. The primary data source of data for my dissertation study is in-depth interviews with school-level and district-level personnel. During the first two years of interviews (spring 2009 and spring 2010), interviews were with school personnel, including teachers, guidance counselors, support staff, and school administrators. The goal was to interview approximately 8-10 individuals at each school, although these numbers varied somewhat depending on school size and interviewee availability. Whenever possible, we attempted to interview the same individuals in Year 2 as in Year 1. In total, the numbers for the first two years of interviews were 119 individuals and 185 total interviews. In contrast, the Year 3 interviews were almost entirely with district-level personnel, and most often included curriculum coordinators, business managers, assistant superintendents, and superintendents. The number of individuals interviewed in each district during

Year 3 varied greatly depending on the size of the district, but usually was between two and six individuals in total. In total, I interviewed 27 individuals in Year 3.

According to Patton (1987), "Depth interviewing involves asking open-ended questions, listening to and recording the answers, and then following up with additional relevant questions" (p. 108). I used a different protocol for each year of interviews. We piloted all protocols with school and district administrators before using them in actual case study settings, which yielded a final product that was clear and comprehensive. The resulting protocols were also grounded in the research and the research questions but were not overly structured – interviewees could guide the conversation in a particular direction if they wished. We ensured the confidentiality of all interviewees to help ensure that interviewees felt comfortable being candid about the decision-making processes (or lack thereof) in their schools or districts – I use neither interviewee names nor the names of their schools or districts in this dissertation. We gave interviewees detailed consent forms (which were approved by the University of Pennsylvania Institutional Review Board). Following the collection of interview data, I password protected all data files, including recordings and transcripts, and removed identifiers from all analysis documents. As a result the schools in this dissertation are labeled as "ELEM 1," "ELEM 2," etc. and "HS 1," "HS 2," etc.

I built three sources of data from the interviews. First, I drafted field memos following each visit, which included initial impressions and observations from the interviews regarding such things as the school or district culture, the organization's

search efforts, and/or interactions with staff. Second, the research team took notes during interviews, which were objective recordings of interviewee statements (mainly in case there were technical problems with the digital recordings). Finally, we made digital recordings of most all of the interviews (save those cases in which the interviewee declined to be recorded) and created transcripts from these recordings.

Aside from the interviews, I also review relevant documents pertaining to the schools or districts in my sample. One example is the "Getting Results" document that the state required each school in "warning" status to complete, detailing its plans for improvement over one year's time. Comparing the schools' stated plans to the processes that actually occurred in schools (as gleaned from the interviews) gave some insight into the degree to which schools have formal improvement plans in place that guide search and decision-making processes. The Getting Results document is a publicly available resource on the Pennsylvania Department of Education website, although it is no longer in wide use statewide. Other examples of relevant documents include any frameworks, protocols, or guidelines that existed at the district or school levels to guide decision-making practices. For example, a school might have a formal curriculum review process that guides their search for new curriculum materials. Whenever possible, I asked for access to these documents during the interviews, and was given permission to use them as part of my dissertation research.

Finally, I use data collected from the 2009 statewide survey of principals. The survey was administered to the over 3,000 principals throughout the Commonwealth of Pennsylvania, with response rate of 65%. Questions on the survey were about the different types of activities underway in schools in response to performance-based accountability measures at the state and federal levels.

Limitations. There are several limitations inherent in my data collection methods. First, due to timing, budget, and travel limitations, my dissertation research does not contain any direct observations of schools or school district decision-making processes. Observing school board meetings, staff meetings, or vendor presentations would likely have strengthened the internal validity of my findings, since it would have provided a data source not based on self-report. Even if I had conducted observations, however, it would have been difficult to determine what would constitute a "decision-making moment." Search processes, for example, often occur through phone calls or casual encounters with friends or colleagues, or through individual research conducted at unpredictable times.

The timing of my data collection is potentially another limitation of my research. Although I was able to build in search and decision-making questions to the protocols for all three years of data collection, it is possible that interviewees' memories had faded by the third year of data collection. Ideally, I would have collected my district data concurrently with the school data, providing a more complete picture of the decision-making process occurring at a particular moment

in time. By the time I had finalized the topic for my dissertation, however, it was

past the second year of data collection. I therefore decided to conduct the district

research as a third consecutive year, and ask my interviewees to think back to when

the school in question was first placed in "warning" following the 2007-2008 school

year. In some cases, district administrators were not on staff at that time, which

caused me to modify slightly the nature of the protocol to reflect more current

search and decision-making activities within the district.

Finally, as mentioned earlier, my inability to recruit two of the ten target

districts is a limitation of my study. Although I believe the final distribution of my

sample is representative of the "average" set of districts and schools throughout the

state (see Table 2), I would have preferred to see these three additional schools and

two additional districts included in the final sample.

Analysis. The first step in my analysis plan was to create a detailed case study of

each school district in my study. I present these case studies in Chapter 3. For each

case study, I use data from the site visits, which includes the field memos, interview

notes, complete interview transcripts, and document analysis. To aggregate within-

case information, I created a common coding scheme for interviews transcripts from

all three years that includes both deductive and inductive codes. Maintaining the

same codes from year to year allowed me to aggregate responses within the school

or district from one year to the next. I used the Atlas.ti qualitative software program

to assist in this process of aggregation, with each school or district becoming its own "family" for analysis purposes.

The individual case studies lay the groundwork for the comparative study of the districts and schools (Eisenhardt, 1989), which I discuss in chapters 4 and 5. For my cross-case analysis, I used a series of case-ordered descriptive matrices. As described by Miles and Huberman (1994), case-ordered descriptive matrices list the cases in a certain order according to a particular variable of interest. The authors suggest that ordering cases in this way can become a powerful way to detect differences both across cases and among high, medium, and low cases. The variables and meta-variables correspond to points of interest relating to my research questions.

To adequately capture the various cross-case differences, I employed several techniques, depending on the variable of interest. If the variable was, for example, the constraints on decision-making, I organized the cases by the type of constraint and then created a meta-variable that described a particular force putting pressure on schools and districts. If, on the other hand, the variable of interest was the people who made decisions for the school or district, I instead created a meta-variable that measured the degree of dispersion of the decision-making process or a bivariate measure of whether the decision-making process can be considered "top-down" or "bottom-up" in nature. The meta-variables varied in each manipulation of the case-ordered descriptive matrix. Although the vast majority of the data for this dissertation study come from the interviews and document analysis, wherever

possible I triangulated my data with information from the document analysis or the

2009 survey of principals.

CHAPTER 3: INDIVIDUAL CASE STUDIES

Study Sample

This study employs a comparative case study design of eight different

schools throughout Pennsylvania. The sample includes six schools that failed to

make Adequate Yearly Progress (AYP) following the 2007-2008 school year and two

that successfully made AYP that year. The schools are also representative across

geography, urbanicity, student demographics, and student socioeconomic status

(with the possible exception that the sample does not contain any extremely large

urban districts). Table 3.1 depicts some key characteristics of the sample.

Table 3.1

Study Sample

School	% FRPL	District Size	Geography	District PPE	% Non-White	% Prof. Math	% Prof. Reading
ELEM 1	74.6	Small	Urban	$10,426	40.7	56.3	51.6
ELEM 2	10.6	Large	Suburban	$9,237	4.8	80.3	74.2
ELEM 3	42.3	Small	Suburban	$8,810	2.1	73.9	73.3
ELEM 4	11.7	Large	Suburban	$12,836	19.9	90	84.9
HS 1	6.8	Large	Suburban	$10,103	11.8	70	88.5
HS 2	19.4	Small	Suburban	$9,687	6.1	52.6	63.5
HS 3	18.0	Large	Suburban	$9,075	19.3	64.1	74.7
HS 4	27.0	Small	Rural	$9,859	9.1	83.6	85.3

*Source: Pennsylvania Department of Education, 2008

This table, while helpful, cannot adequately convey the complexity inherent

in the specific settings of the eight schools listed above. To this end, I provide short

individual case study write-ups for each of the eight schools in the sample. I used

three separate sources of information to develop each write-up. First, I wrote field memos following each school or district site visit over the three years. These field memos included my initial impressions of the school building, the school culture, and the main themes that emerged from the interviews. Second, I read through the entire three years of interview transcripts school by school to get an in-depth idea of the school's context, decision-making approach, and relevant constraining factors. I took detailed notes on each school during this process. Finally, I analyzed any relevant documents that school leaders made available to me during my visits, for example curriculum review cycles or the state-mandated *Getting Results* document.

Since we promised confidentiality, I use codes for each school. High schools are labeled "HS 1," "HS 2," etc. and elementary schools – defined as any school serving students Kindergarten to eighth grade – are labeled "ELEM 1," "ELEM 2," etc. In each case, I interviewed individuals both in the school setting and in the district offices.

ELEM 1

ELEM 1 is a medium-sized school located in a depressed urban area. The surrounding houses in the neighborhood are mainly dilapidated two-family homes, and I could tell by the number of people outside on a weekday that unemployment in the area was likely high. During our visit, the school staff spoke often of the "home problem" that plagues students. They said that students come from broken homes and have disinterested parents and guardians, which made their jobs as

teachers and administrators very difficult. When asked what factors were hindering

the school's ability to make AYP, one teacher put it succinctly and brashly: "We have

a lot of crack babies," she said. This negativity and blame-placing attitude pervaded

our experience over the two years that we visited the school. Administrators were

more forward thinking and positive, but admitted that the district did have a

problem with parental engagement.

In terms of decision-making, the district pursued a two-pronged approach. It

tightly controlled the decision-making process around major instructional decisions,

such as selecting new curriculum materials, aligning curriculum to the standards,

and reorganizing grades by department. The superintendent, assistant

superintendent, and high school principal seemed to be the major decision-makers

in these areas. The elementary principal was rarely included in the search and

decision-making process, and the district overlooked teacher input all together. On

the other hand, however, the district let the elementary school principal make the

"less important" decisions, such as how to handle PSSA remediation, school-wide

action planning, setting incentives for PSSA performance, and other improvement

activities. When I asked the elementary principal directly about whether decisions

were "top-down" or "bottom-up" in nature, he said that about 70% of decisions

were top-down and 30% were bottom-up.

A good example of the mostly top-down decision-making process in the

district was the district's decision to change the elementary math curriculum. In the

first year of our visits, the assistant principal had grown worried that the existing

curriculum was not research-based. The district administrators evaluated a number

of different programs, and ended up selecting Everyday Math for three reasons.

First, neighboring schools were using it with success. Second, it had a research base

on the What Works Clearinghouse. And third, the middle school and high school

principals thought it would synch well with their math curricula. The elementary

principal was later informed of the decision and allowed to try out the new

materials. Teachers were left out of the process completely. Said one teacher,

"Everything seems to be very quiet and then they announce, so we were hearing in

the background this is going to happen, but nothing definite until our last Act 80

meeting it was in March they said this is going to be our new curriculum, look at it

and see what you think, we are going to try and use the new power teaching model,

which none of us have been trained in yet" (Teacher, ELEM 1). Another teacher said

simply, "We are not real sure on who chose it and why" (Teacher, ELEM 1).

As far as search at the district level, the district followed strict protocols for

its top-down decision-making process, but engaged in a very limited search process.

The assistant superintendent used a framework that he adapted from his previous

district that asked the decision-maker to evaluate new programs and strategies

based on cost, timing, and other factors. District administrators also reported that

they leaned heavily on the Pennsylvania Department of Education website when

trying to align their curriculum to the state standardized test or engage in K-12

curriculum alignment. Finally, district administrators reported that they routinely

looked to neighboring districts to see what had worked for others in the past, asking

these districts for specific evidence of programs' success as shown on benchmark tests and other measures. That said, the options under consideration at the district level were usually determined not by the administrators themselves, but rather by the vendors who happened to knock on the door. Said the assistant superintendent, "The vendors basically find you. You really don't have to search them out too much, because they're for profit. So they find you pretty easily. There's a lot of good stuff out there. The thing is, you've got to sift through it and find what's right for your district. And make sure that you're not duplicating, and it's meeting your needs." (District Administrator, ELEM 1)

In contrast to the more formal (albeit limited) district-level efforts, the search process at the school level was focused almost entirely on informal networking. Said the principal at ELEM 1, "Education is all about stealing whatever works, see if it works for you, if not, steal from someone else" (Principal, ELEM 1). The principal also looked to data from neighboring districts, but admitted that he mainly called his friends to see what was working for them. Other networking efforts happened organically within the school building itself. Several teachers mentioned that they got together during their planning periods or lunch breaks to compare what was working in their classrooms, and how best to prepare their students for the PSSAs. In some cases, these informal meetings resulted in tweaks to the reading and math curriculum so that it was better aligned to tested content. Teachers said that the school principal didn't really get involved in these micro-level decisions. As one teacher put it, "We have team meetings, we meet as a team once a

month and usually at those times we discuss any challenges or things we would like to try and [the principal] lets us try it because we've been very consistent throughout the years with scores so in his eyes he thinks we are the ones teaching it everyday, we are the ones implementing it in our classrooms he trusts us and lets us try it" (Teacher, ELEM 1).

The order of decision-making at the district level was fairly linear, with problem identification as the first step, then the search for solutions, and finally the decision itself. Administrators did not agree on which of those steps was the most difficult – some said that problem identification was the most difficult, whereas others said it was the easiest. Decision-making, while linear, was limited by two important factors. The first factor was a district culture that did not encourage collaboration – teachers and school-level administrators alike simply waited for options to land at their feet instead of actively searching for potential new programs and strategies. The second limiting factor was time. Nearly all interviewees mentioned that there simply wasn't enough time to meet and collaborate about programming and improvement strategies for the school or the district, which in turn constrained their ability to make informed decisions.

ELEM 2

In contrast to ELEM 1's low wealth surroundings, ELEM 2 is a small school in a high-wealth district. During the first year of visits, the school served students in Kindergarten through fifth grade, but in the second and third year of visits, the

district added an "intermediate school" and restructured its elementary schools to serve only grades K-3. Thus, while ELEM 2 was in warning in our first year, the teachers and administrators had only one tested grade (third grade) in the subsequent years of research visits.

In our first visit to the school, we were invited into the "War Room," which is the name that the principal gave to his Response-to-Intervention (RTI) and data review team. The team consisted of the principal, a math specialist, a reading specialist, the guidance counselor, and the RTI coordinator. This was the first indication that the staff at this elementary school – and, as I would later discover, the district as a whole – were extremely data-driven in their decision-making approach. In this meeting, the War Room team presented a wealth of school-level data and reviewed the many different interventions and curriculum supplement programs they had in place to serve the diverse educational needs of their student body. ELEM 2 took a proactive approach to school improvement – whereas other schools and districts in the sample would name about 10-15 strategies for improvement, the administrators at this district named over 30 different programs or strategies that they were in the process of adopting and implementing either district or school-wide. By the third year of interviews, administrators acknowledged that their main challenge was to begin to look at what types of programs they could eliminate from this list. The assistant superintendent explained this dilemma:

"We need to get a little bit better at looking at what becomes the litmus test for what we take in as the new thing we take in from down the pike. Or rather, what becomes a litmus test for saying that they are going to adopt something or pull something in to solve those problems. We've had the luxury of being able to do WalMart shopping – go in and, "oh, here's everything. We need this for this, and this for this." And so you have a multitude of things out there and now we've gotta kind of move toward Target and eventually back to the mom-and-pop hardware store where we go in and we have limited choices and limited funds." (District Administrator, ELEM 2)

The decision-making process in the district was neither top-down nor bottom-up, but rather was a truly collaborative process. The district proactively used its school-level personnel as informants and participants in the decision-making process. This process took shape in three ways: First, the district had in place a Response-to-Intervention (RTI) program that used data to target remediation to the specific areas in which students struggle; second, the district used a formal curriculum review protocol to provide supplemental support for non-covered content or skill areas; and third, the district actively "pre-implemented" all new potential programs in classrooms before formally introducing new programs to a broader audience.

The goal of the district's RTI program was to use student-level data to craft a remediation or enrichment program that fit each child's unique educational needs. Data collection was therefore a major effort in the district, and the schools had in place multiple data collection methods, including regular benchmark tests, fluency screeners, and computer-based programs. The district's math and reading coordinators were in constant contact with the school RTI teams, particularly the

math and reading specialists. School teams shared information about emerging

needs to district personnel, who then gauged how pervasive the need was district-

wide. In this way, student needs were aggregated to the school level, and then

further aggregated to the district level, creating a bottom-up feedback system that

was guided by top-down RTI processes.

The second tool in the district's decision-making toolbox was curriculum

review protocols. The district administrators in charge of math, reading, and special

education each used a highly detailed framework to review all potential new

programs or strategies. This framework contained six separate "stages": 1) program

evaluation/philosophy/framework generation; 2) resource review and piloting; 3)

product purchase and pre-implementation; 4) full implementation; 5) monitoring

and evaluation; and 6) refinement. The timeline for this process went out five years

and was for all subject areas in all grades throughout the district.

Finally, the district used a "pre-implementation" strategy, which was also the

third stage of the curriculum review process explained above. The pre-

implementation process allowed teachers to use new programs in their classrooms

for up to a year before fully rolling them out school or district-wide. Two or three

teachers would use a program in their classrooms for several months, and then

would serve on a "pre-implementation committee" at the district offices. As

committee members, they would present their successes and challenges using the

program in their classroom. The literacy or math specialist at the school would

always be present for these meetings, as would the district administrators for

reading or math and the assistant superintendent. We spoke to several teachers in

the elementary school who were pre-implementers and all spoke highly of the

practice, saying that it allowed them to proactive participants in the decision-

making process. Following pre-implementation, the district then made the decision

about whether to fully roll out the program, and how to best support the new

program with professional development and training.

Although the district was heavily reliant on protocols and frameworks as

part of its information gathering system, the district made a conscious effort not to

copy other districts. Several administrators asserted that they saw themselves as

innovators, not copiers. Said the district's reading curriculum coordinator, "I don't

want this district to be 'what is'; I want it to be prepared so that other districts are

looking to us" (District Administrator, ELEM 2). This means that they did not look

for strategies or curriculum materials that had been used in other districts, they did

not rely on the recommendations of the state or the Intermediate Units, and they did

not take the word of vendors that they had worked with in the past. Instead, the

district constantly looked for new and innovative programs on the horizon, scanning

the research journals and clearinghouses to inform their evidence-based processes.

As an example, the reading director explained that when she selected a program to

collect data on a students' reading fluency (or "Lexile" scores), she visited the Lexile

website and looked at each and every vendor that the site recommended. Then she

cross-referenced each vendor's product by reviewing the relevant research on

Lexile scoring, relying mainly on her professional journals. Finally, she called in a

short-list of vendors and interviewed them about how they would add value to the district's data-driven decision-making agenda in relation to the others. She selected Scholastic's program because that vendor was able to link Lexile scores to parent resources, including lists of library books in each child's area of fluency.

Finally, the process by which the district makes decisions was linear. The purpose of the "War Room" was mainly to use student-level data to identify problems, such as gaps in the curriculum or instruction. Then, the district administrators collaborated with school-level personnel (mainly the math and reading specialists, although they were open to teacher input as well) to find the right programs that would fit the unique needs of struggling students. The search process itself involved queries of vendors, technical research, and – to a limited extent – outreach to trusted sources at the state or regional levels. Once the district or school made a preliminary decision, it then activated the pre-implementation process, making sure to gather feedback from the pre-implementers along the way. Only then did the district finalize its decision and fully adopt the new program or strategy. Given the deliberate nature of this process, the main constraint on search and decision-making was time – decisions often took a year or more to reach full implementation.

ELEM 3

Whereas ELEM 2 exhibited high levels of administrative and teacher collaboration for improvement, these levels were dismally low in ELEM 3. Although

there was only one other elementary school in the school district, the administrators and teachers at ELEM 3 frequently referred to their school as the "red-headed stepchild of the district." Their students, they said, came from more impoverished backgrounds, their PTA was less robust, their programming was not well supported, and the district looked down on them. Most interesting, however, was their claim that the school as a whole was less involved in the decision-making process than was the other elementary school.

For her part, the superintendent recognized the competition between her two elementary buildings, but said there was little she could do to change the dynamic because she – and the district – lacked the capacity to do so. The district was small and her entire administrative staff, from the facilities managers to the maintenance staff, was only ten people strong. There was no assistant superintendent and no curriculum coordinator for her to lean on. As the principal of ELEM 3 put it, "The superintendent in this district does more things than the superintendent should do. And it's- I don't want to say that it's micromanagement. I believe it's high degree of forced management, in that degree…She's involved in personnel. She's involved in curriculum. She's involved in so many other areas, as well as that's a political role" (Principal, ELEM 3).

These two issues – the district's low level of capacity and the elementary school's inferiority complex – made the decision-making process fraught with tension. The low levels of human capital and scarce resources meant that the district didn't consider many new programs or strategies. In the first year after

ELEM 3 was put on the state's "warning list," the principal himself admitted that the school wasn't really doing anything different than it had before. The only change was an afterschool tutoring program for Title I students, which was a program enabled by formula funding from the state and was not a district or school decision. But even in situations when the superintendent asked the staff at ELEM 3 for their opinions on new strategies or materials, the staff felt resentful and claimed that the programs were really intended more for the other elementary building.

In the three years of my visits to the school, there was only one example of a decision that followed a linear decision-making process: the selection of a new math curriculum. Teachers had for years been complaining that their math textbooks were old, poorly aligned to the state standards, and filled with "fluff" (Teacher, ELEM 3). When the district received funds from the 2008 stimulus bill, the district was able to search out new curriculum materials. The process was fairly linear and top-down in nature – the superintendent solicited vendors to submit sample textbooks, then she met with her two elementary principals to discuss, then she called together a committee of teachers at the two elementary schools to discuss the various options on the table, and then she made a decision based on their input. Despite this fairly inclusive top-down strategy, teachers at ELEM 3 claimed that they were very wary of the new math curriculum because they felt they had been left out of the process, and they suspected the choice was really made because teachers at the other elementary building had wanted it.

In the two years while teachers waited for this new math curriculum, however, they actively sought out new ways to align their instruction to the state standards, albeit without any coordination or supervision at the school level. Teachers reported that they took it upon themselves to find solutions to the outdated curriculum. When asked what resources she used to help her implement the state standards, one teacher said, "We get some stuff from the Internet. Not much. I have other books that the previous teacher left. My father was a math teacher for thirty-some years, and he gave me some stuff, too. I was pretty much given a lot of things from previous years" (Teacher, ELEM 3).

Although one might think that the school's self-described second-class citizen status would cause them to rally around one another, this was not the case – in their search for solutions in their own classrooms, teachers rarely leaned on one another as resources. Low levels of social capital in the school prevented teachers from sharing ideas and helping one another. As a result, efforts at aligning curriculum to the standards (before the new math curriculum was adopted) were fractured. The 4th grade's strategy for alignment, for example, was to replace its Pennsylvania History class with more geometry preparation before the PSSAs. The 5th grade was trying to ramp up its use of the PSSA coach booklets, while the 6th grade opted to replace recess periods with more test preparation. In all cases, the elementary principal seemed to have simply signed off on whatever teachers wanted to try, resulting in an uncoordinated bottom-up approach to decision-making.

In general, the story of ELEM 3 is very few decisions were made according to a true "process." The lack of capacity, specifically the lack of social and human capital, undermined efforts to make decisions for improvement in a thoughtful, deliberate, and inclusive manner.

ELEM 4

Whereas ELEM 3 lacked staff capacity and suffered from a negative school culture, ELEM 4 enjoyed a surplus of support staff and prioritized efforts to constantly improve social capital. ELEM 4 is located in a well-to-do area with a highly motivated parent community. The building principal was a woman whose leadership style was not unlike that of a military officer – she was driven, decisive, focused, and blunt. She was also very well liked in her school and, by the third year of interviews, she had been promoted to an administrative position in the district office. Despite the regimented personal leadership style of the principal, however, the district did not follow any specific set of guidelines for decision-making in general or search procedures in particular. Instead, the district operated on a general philosophy that information for decision-making could come from anywhere – from sources internal or external to the district, from research journals or word-of-mouth recommendations, and from the school custodian up to the superintendent. While some might view this as a fragmented approach to decision-making, perhaps a more appropriate term would be "organic," because

administrators were constantly encouraging personnel to collaborate and

brainstorm about new potential programs.

As a result, the district was highly attuned to the social needs of employees,

and spent a great deal of effort on increasing social interaction among employees in

different buildings. The Assistant Superintendent for Elementary Education said

that her primary goal for the academic year was to conduct meetings with building

leaders, rotating the venue each week so that personnel could see what other

peoples' "worlds were like." The goals of these meetings were to share best

practices, as well as communicate emerging issues or instructional challenges.

Mostly, however, the goal was to get people to feel that they were part of a

functional team.

The district actively called upon principals, teachers, specialists, and

paraprofessionals to participate in the decision-making process – they were asked

to present data, generate new ideas for improvement, and even vote on new

potential programs and strategies. The assistant superintendent for curriculum and

instruction said that he liked to call general meetings and be very upfront about his

own preferences for new programs or strategies; but he admits that he openly

encourages employees to disagree with him, as long as they can express their

reasoning in a coherent and convincing way. When we spoke to the building

principal and her staff, they were extremely proud of their abilities, and felt that

they were trusted and valued members of the district's decision-making team. As

the principal explained, "I think journals and all those are great, but the process of

finding a program, working through the program, and then implementing it is a person-to-person thing. The team is more important to me than the theoretical jargon. It's great to start from and to take from, but the practicality of doing it in the building is the everyday business" (Principal, ELEM 4).

The district and the school relied mostly on internal achievement data to inform decision-making. At the building principal's request, the school started a Response to Intervention (RTI) initiative that focused on progress monitoring and automatic targeted remediation for minority students, regardless of their academic performance. Although this latter focus was controversial within the school, the principal explained that she implemented it because "research shows that eventually those scores will struggle" (Principal, ELEM 4). The school's RTI program eventually became a model district-wide, which once again shows how ideas in the district often are generated at the school level and then filter up to the district level.

Although the district appeared to be highly functioning, district administrators were quick to caution that the lack of formal decision-making frameworks (aside from the RTI model itself) had some downsides. The first was that the district was highly susceptible to political influences, namely from a contentious school board and a demanding parent community. The school board put pressure on the district to copy successful techniques by asking which other districts were using certain curriculum materials before sanctioning their purchase for ELEM 4. An example was the district's search for a new bullying program. Two

of the middle schools had in place a particular anti-bullying program, which was also used in a neighboring district. Other programs were considered, but the school board pushed hard for that one because there was "evidence of success." As far as parents are concerned, teachers were quick to say that any new program must pass muster with parents if it is to be fully implemented. For example, the school attempted to implement a standards-based report card one year, but that decision was eventually scrapped when parents rejected the new report cards.

Another potential downside to the district's search procedures is that it was highly dependent on the individual leadership styles of the school and district administrators. While one administrator might prioritize teacher input, another might value principal-led brainstorming initiatives, and yet another might be personally going to conferences in the area to find new programs. While these differing tactics did not produce any specific problems during the three years of interviews, three separate district administrators said that they would like to see more cohesion in their search and decision-making approaches in the future. Said one administrator: "We have sixteen principals, and of those sixteen principals, you probably have ten, eleven, twelve different philosophies, and that's hard when you're trying to do things consistently as a district. That's hard. I mean, not in terms of what people want, but philosophy-wise. People are all over the place with that, and that drives some of us nuts" (District Administrator, ELEM 4).

Regardless of whether one calls the district's approach to search and decision-making "fragmented" or "organic," the process was still fairly linear in

nature. The district invested a fair amount of effort into diagnosing the problems

(specifically by using a "Response to Intervention" program), then actively searched

for solutions to fit those identified problems, and then made the decision itself,

which administrators at the district level said was the most difficult part of the

process, given the political climate district-wide.

HS 1

From afar, HS 1 could easily be mistaken for a small liberal-arts college

campus or an elite private school. The athletic fields are immaculate, and the high

school is enormous, brand new, and laid out in a U-shape with different sections of

the building proclaiming their unique focus ("Academics" or "Athletics" or "Arts").

Inside, the building looks a bit more like a traditional public high school with

students rushing to class and hall monitors trying to control the chaos, but the

impression remained that this is a wealthy district and a well-maintained building.

Most of the decisions for improvement at HS 1 came from within the school

walls, and many originated at the teacher level. This may have be due to the fact

that the school is simply so big (the school has over 3,000 students), but it also

belied the district's general philosophy around decision-making that bottom-up is

best. Said a district administrator, "I've been with the district for 35 years and I can

tell that during my time in the district that has always been the philosophy. To have

those people that are going to be ultimately using the resources and will be the

people who can make those resources successful with students, that they're a part of the selection of those resources." To support this approach, the high school leaned heavily on department chairs through a Professional Learning Communities (PLC) structure. Department chairs would meet regularly with teachers to brainstorm around new instructional strategies and determine gaps in curriculum and/or instruction. When an individual teacher or a PLC identified a need, they took it to the department chair, who then took it to the principal, who then networked with district administrators and the school board to turn the idea into reality.

This collaborative approach to decision-making presented both benefits and challenges for the district. In terms of the benefits, teachers felt as though they were included in the process and reported high levels of buy-in once a new resource or strategy was selected. And because the district employed several decision-making frameworks, such as the PLCs and curriculum committees, each decision was thoroughly vetted before the ultimate strategy was selected. An example of a teacher-led idea was the "math study lab" at the high school, which essentially used benchmark tests to identify students for voluntary small-group remediation in the school library during study hall periods. The idea came from a teacher who was working on her Masters Degree and decided to implement the lab as part of her thesis for her degree. She took the idea to her department chair, who worked with her to iron out the details of the intervention, and she then spent her summer coming up with the data markers to identify the right students for this lab. By the second year of our visits to the high school, the program had expanded and the

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principal had become intimately involved in the scheduling aspect of the study lab, working to make it a mandatory requirement for identified struggling students. By the third year of interviews, district administrators said that the idea was so successful that they had begun to use it at the middle school level, and that several neighboring districts were interested in using the model in their own schools as well.

A challenge, however, of this departmentalized approach was that there were so many decisions coming up through the pipeline at one time that they could become disjointed from one another. In other words, what may have seemed like the next great idea could soon become a passing fad. Although the district generally liked to pilot new programs before they were fully implemented, this piecemeal approach drained financial resources, as licenses were purchased and then abandoned in the search for the perfect set of resources. An example here is the HS 1's search for a program to identify students for remediation. The school had purchased one benchmarking program, but it didn't have all the tools they needed, so they purchased another one that better fit their needs. But a few years later, they realized that teachers weren't using that new resource fully and so they set about finding yet another program that would work. They finally settled on a product that was already being used in the middle school, but even that program did not seem like it would last for long. Said one teacher:

> "It is hard to find a good tool for that, where you can just go from one grade and just dump it into the next and track it from year to year. We don't even think [the program we have now] is the answer to that but it is the best that

we have right now. We can convert their data into an Excel file and we can manage it. We are still looking for a good longitudinal way to track them from one grade to the next and to turn that data around....We are still searching, if I come up with something in the next three months I will throw it out to the group again and say hey let's look at this," (Teacher, HS 1)

As one might expect, the district's collaborative approach to decision-making relied heavily on networking and word-of-mouth recommendations of new resources. Most of this "human resources" work occurred within the school, but teachers and administrators also reported that they actively worked with principals in neighboring districts and the state technical assistance agencies. They did not rely heavily on technical resources such as research journals, conferences, or professional associations. A district administrator summed up their general strategy for search:

"I think we want to make sure that we look at everything that's available. We want to take the time to evaluate those resources very carefully. And that involves a number of steps, from vendors or publishers coming in to present materials, the teachers having time to look at those materials in depth – that takes a considerable amount of time. Certainly it's easy for us using data and using feedback from teachers to identify the issues that we want to resolve. But then when we look at resources, that process is the most time consuming." (District Administrator, HS 1)

The district did not have many constraints on its search process, which allowed them to network extensively, spending the time and the resources they needed to find what worked best for them. Although interviewees mentioned that the budget was starting to get tighter, they still admitted that they generally had sufficient staff and money to choose whatever resources they thought would best fit their students' needs. It is highly probable, therefore, that the district's search

strategy was workable in large part because the district itself was wealthy and had a strong team of administrators that were committed to spending the time and effort to enable a truly collaborative search and decision-making process.

HS 2

In contrast to the college campus appearance of HS1, HS 2 is a traditional looking small rural high school located in a similarly small district in the "slate belt" of Pennsylvania. Its students came mainly from white, middle-class families, and the percentage of its students on the Free and Reduced Price Lunch program hovered around 19%. On the research team's first visit in 2009, the school had just been placed on the states "warning" list for failing to make Adequate Yearly Progress (AYP) in several areas. By 2010, the school had failed again to meet state targets and was in School Improvement I, which meant that the Pennsylvania State Department of Education (PDE) exercised its right to send in a team of professionals called "Distinguished Educators" to help the school to improve. In the final visit with district administrators in 2011, the school had made some progress, and was back on the "warning" list, but still failing for its special education students in reading.

The district relied heavily on the school principal and his two assistant principals to make decisions, generally asking for teacher input only after school-level administrators had already chosen a new program or strategy for improvement. While some members of the school staff reported that they didn't

care if they were involved in the decision-making process, others reported that their

exclusion from the process led to feelings of resentment of school and district

administrators. When asked about his involvement in the decision-making process,

a special education teacher said:

> "A lot of times, we feel like decisions are made without any of our input, and then we're told, you have to do this. And it's frustrating on our end…. And that seems to be the pattern that's been going on a lot this year, where new things are coming down the pike, and it's like, okay, you guys have to implement it. This is what we want to do. Here, make it happen. And we don't really meet as a faculty or as a department first to try to come up with ideas of how to implement it or get our input on things." (Teacher, HS 2)

Similarly, a Distinguished Educator at the high school said, "There's, I think, a

lack of trust that the central office doesn't trust that the administrators are going to

make the right decision. Therefore, the central office will make it for them. They do

have faculty input, the administration here at the high school, but it's predominantly

the good old boys club that makes the decision" (Distinguished Educator, HS 2).

The problems identified by the school and district staff were threefold:

First, nearly all respondents reported that there had been an immense amount of

district and school administrator turnover, which resulted in low staff morale and a

mistrust of new initiatives. The high school principal, for example, was the third

individual to serve in his position in only a two-year period. The second issue

perhaps stemmed from the first, which was that there was a general lack of

communication among staff, which made it difficult for administrators to stress to

teachers and students alike the importance of the state standardized tests. Finally,

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respondents reported that the school was not adequately meeting the challenges of serving an increasingly impoverished student body.

In response to these identified issues, interview respondents identified 15 separate decisions that they had made for improvement, ranging from minor or superficial strategies (such as incentivizing student performance on the standardized tests with small rewards like free prom tickets) to major strategies (such as the total realignment of the curriculum to the state standards). Although the specific search strategies varied depending on the decision in question, in general, searches for new programs or strategies were limited to familiar channels, such as networking with neighboring districts or contacting potential vendors. Although most of the networking activity occurred at the district level, there was one trusted individual at the high school – with the title of Instructional Coach – who district administrators trusted to network with friends in neighboring districts about new potential programs. When asked about why she prefers these types of personal contacts instead of more technical research, the district superintendent said, "Because you can get feedback. You really can. You can get feedback. You can look in somebody's eyes and tell if they're selling you a line of bull. I can tell a guy who's trying to sell a product" (Superintendent, HS 2).

The search process, though constrained by geography and familiarity, was fairly linear in nature. District administrators usually surveyed some of the school data, did a few Internet searches, and then contacted potential vendors to have them come into the district and pitch their products. Once the options were on the table,

the district administrators weighed their options, and called in the school principals to take a look. The principals sometimes would network with a trusted group of school staff, but sometimes would not, depending on the decision at hand. Then the decision would be adopted at the district level and handed down to the teachers to implement. The only exceptions to this pattern were decisions that were made by the Distinguished Educators, who answered to the state and not to the district or to the school.

When I asked the district administrators to reflect on the district's search and decision-making process, the Assistant Superintendent said that, while the district was usually open-minded when it came to new potential programs, she believed the district could do a better job at including more people in the decision-making process, particularly during the "brainstorming" part of the process. The superintendent agreed with this statement, but cited – as did many others – that the lack of stability in the administrator position had undermined the district's ability to make decisions in an ideal manner. She and other interview respondents mentioned that they hoped the level of trust and communication within the district would improve over time, thus facilitating greater collaboration and joint decision-making. By the next year, however, the high school principal left the district, and the school was faced with yet another absence in the administrative team.

HS 3

Although the surrounding countryside makes HS 3 look somewhat similar to HS 2, its relative proximity to an urban area qualifies HS 3 as a suburban school. It is housed in a modern building and beautiful surrounding campus. When we first went to visit the high school, the school had recently witnessed an enormous turnover of the administrative staff at both the school and district levels: the principal, assistant principals, superintendent, and assistant superintendent were all new. This massive turnover coincided with the school's low scores on the PSSAs, but in fact the interviews with staff revealed that the administrative changes were long overdue and actually produced positive change in the school and district over the three years of our visits.

Perhaps the most influential change was the arrival of the new principal, who was the son of a much-loved principal from many years back. This principal made it his business to revitalize certain programs, analyze the data coming from the PSSAs and other sources, and fill curriculum gaps. The staff responded well to his enthusiasm, shedding some of the complacency about test scores that had previously hampered the school's ability to improve.

The principal, along with his administrative team, instituted a collaborative strategy for decision-making. In essence, he would call together his trusted advisors (consisting of his assistant principals and the two reading specialists in the school) to come up with new ideas for curriculum interventions and other new improvement strategies. Then, they would run their ideas by the rest of the school

staff, including classroom teachers, special education teachers, and others. Then, once there appeared to be support and consensus around a particular program, they would present their ideas to the district office staff, who would approve the decision, and together they would make a presentation to the school board for financial approval. In this way, ideas for improvement almost always started with the principal and his team at the school level.

An excellent example of this decision-making strategy in action was the school's selection of the *Read 180* intervention program. After reviewing the data gleaned from benchmark tests, the two new reading specialists in the school decided that there were gaps in the reading curriculum that required a new intervention program. They had both used *Read 180* in previous positions in different districts, and highly recommended that HS 3 use it as well. The principal was worried about the cost of the licenses for the program, however, so he asked them to present him with three or four options for a new intervention program.

> "Of course we are pushy about it so we were like, we need this now, and because of those subgroups not making it they were like, ok, if you say it is the best, it's the best. We even had somebody challenge us and say this is the Mercedes of all reading programs, why can't you find something less expensive? I said, we can pay all this money and we would still have all this stuff to do and it still wouldn't meet every single kid at their level and it would not have all the things we know needs to happen for kids to catch up or close the gap. I said these people at Scholastic have done their homework; everything is embedded in, from small group to independent reading and the software. So why wouldn't you get everything if you are going to pay something, do it all" (Reading Specialist, HS 3)

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The principal reported that they completely convinced him of the need for *Read 180*, however. He subsequently set up appointments with the vendor to visit neighboring districts that were using this program, and then took all of this information to the district office to make his pitch. From the district's perspective, administrators were interested in two things: First, how much would the new program cost; and second, did it fit with their overall strategy of following Bill Dagget's (2005) "rigor-relevance" framework. When the superintendent found that *Read 180* met these two criteria, he reported that he was happy to take the recommendation to the school board. Once the board approved the purchase of some licenses, the principal piloted the program for a year, and then went back the next year to make the case for expanded use of the program with the purchase of additional licenses. The board approved his request because they believed that the program had demonstrated positive results, as reflected in rising PSSA and Lexile scores.

The overall decision-making process at HS 3 can be described as "nearly linear." The district, specifically the superintendent and assistant superintendent, were very focused on data analysis to help identify the problems that needed to be fixed in order for student achievement to improve. Then, they tasked the school with searching for solutions to identified problems. Then came the decision point, followed by implementation. The only hitch in this linear process was that the search itself, though highly structured (i.e. involving piloting, multiple options on the table, human and technical sources to inform the process, etc.) served mainly to

justify decisions that administrators had already made in their heads. With the Read 180 decision, for example, the reading specialists were already set on using that program before they made their presentation to the principal. Said the principal, "I trust them implicitly, but I knew already that they were *Read 180* fanatics" (Principal, HS 3). Later, when the school was tasked with coming up with a similar intervention program for math, the process unfolded in much the same way. The principal, whose background is in math instruction, came across an intervention program at a conference in Washington, DC, and liked it. When he arrived back home, he thought he'd like to buy this new program, but researched a few others just to brainstorm or play Devil's Advocate.

In general, the school – and the district in general – seemed to be making big leaps in terms of new programming and strategies for improvement over the three years that we visited. In Year 1, the school was mainly trying to look at data and figure out where the gaps existed – accordingly, their major efforts were to institute benchmark exams, revitalize existing programs in the school, and pilot the *Read 180* program. In Year 2, they expanded *Read 180*, re-sequenced the science curriculum, and searched for a new intervention program for math. And by Year 3, the district was working to create greater alignment between the efforts at the high school and middle school levels so that improvement strategies might build off of one another and enhance academic achievement district-wide.

HS 4

Similar to HS 3, HS 4 experienced a high percentage of staff turnover over the three-year study period. In the first year, the high school principal and the district superintendent – both of whom had served for over a decade respectively in their positions – were about to retire. Furthermore, the teachers had been out of contract for over a year, which had created tension between the school staff and the district administrators. In short, it was a district on the brink of transition. The outgoing high school principal described the decision-making process as a completely top-down approach, primarily because he did not trust teachers to be proactive enough to come up with ideas on their own. For their part, teachers said that they were left out of the decision-making process, and would have liked to be more involved.

By the second year of our visits, it was evident that the contract negotiations and the administrative turnover had significantly depleted social capital within the district. Although the contract dispute was finally resolved in Year 2, teachers mistrusted the motives of administrators, and this mistrust was only amplified by the fact that the district was unable to hire a new superintendent to replace the outgoing individual. The new high school principal faced similar challenges. Although he had previously served as the assistant principal at the school, he felt uncomfortable in his new leadership role and admitted that he let teachers dictate most of the new school policies. A district administrator described his decision-making approach as haphazard and too rushed:

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"[He] doesn't know what to do with all this unleashed ability. I think he is extremely bright; I think he is willing to make a decision but unfortunately he is a little premature in his decision making because he hasn't thought through all the pieces. It always sounds good and he always goes in that direction and I will go, 'did you think about this and if you did this with Sheila and the ESL and pull her here, what does that mean for the kids who have it next year?' He doesn't' think through that next step, he is not the big picture thinker." (District Administrator, HS 4)

By the third year of our visits, the district had finally hired a permanent replacement superintendent, a man who stated that his primary goal was to restore some semblance of mutual respect and trust among administrators and staff alike. He described his district staff as, "a bright group of people." But, he cautioned, "they don't play well together" (Superintendent, HS 4). At the high school level, the principal remained in his position and was gradually getting to the point where he felt he could assume a true leadership role and guide the decision-making process accordingly.

To support the decision-making process, district and high school administrators alike tried to institute a more collaborative process, using focus groups, surveys, and committee structures as mechanisms for gathering teacher and staff input. Teachers reported that they liked this new level of involvement, but it also led to some problems. For example, a district administrator described the new high school principal as a "whipped puppy" when it came to new staff proposals because he would always agree to whatever they asked (Teacher, HS 4).

In terms of the broader decision-making approach, the district's processes were scattered and generally followed the Garbage Can Model of decision-making.

Although there were some examples of linear decision-making (for example, the decision to implement Professional Learning Communities district-wide), many other decisions were brought to light in a haphazard manner, with solutions preceding identified problems, narrow or non-existent search processes, and hurried decision-making time frames. An example of such an initiative was the institution of more Advanced Placement classes, which the high school principal spearheaded primarily because his teachers were telling him that the gifted students in the school were under-challenged. Although he says he also briefly considered the International Baccalaureate (IB) program, he and his assistant principal decided against doing so, and instead invested money in online portals to access a range of AP courses. Once school was back in session, he instituted a committee for teachers on the new AP classes, but in truth the decision had already been made. In short, the decision-making process amounted to throwing a bunch of problems (inadequately challenged gifted students, small district size to support classes for gifted students), a bunch of solutions (IB courses, AP courses), a truncated timeframe (the summer months before school began in the fall), limited collaborative input, and mixed it all around. When the trash was taken out in September, online AP courses were the garbage concoction du jour.

It is possible to attribute this chaotic process to the simple fact that the district was in the midst of a major administrative transition – perhaps if I had visited the high school for a fourth year, I would have seen a confident principal who was able to better harness the potential of teacher committees to make truly

collaborative bottom-up decisions with district support. Without that insight,

however, I can only guess at the trajectory of the decision-making processes in the

district.

In terms of the search process in particular, the specificity and thoroughness

of the search varied from decision to decision. In some cases, the search was

thorough, with several formal options on the table and utilization of both technical

and informal word-of-mouth recommendations from like-minded schools and

districts. In other cases, however, the search process was truncated or non-existent,

as time, budget, and human capital constraints limited decision-makers' ability to

reach out for a range of possible solutions. The inconsistency of search at HS 4

meant there could not truly be a unified "search process" for the district, although

generally speaking, the district curriculum coordinator and the high school principal

leaned on technical resources, whereas the superintendent and the high school

assistant principal leaned on word-of-mouth recommendations.

CHAPTER 4: DESCRIPTIVE FINDINGS ON DECISION-MAKING PHASES

The decision-making environment in education is often characterized as a four-step process. First, the decision-maker (or group of decision-makers) identifies the problem at hand, finding the area of deficiency that is in need of a solution. Next, the decision-maker searches for a solution, identifying a range of potential solutions to the problem. Next, the decision-maker selects a solution, and finally implements the decision. If we accept the assumptions of Rational Choice Theory, we assume that these steps occur in a strictly linear fashion: problem identification; search; decision; and implementation (Bass, 1983; Simon, 1955). If we accept the assumptions of the Garbage Can Model of decision-making, however, steps in this process might be ignored, occur out of order, and the resulting decision would be far from optimal (Cohen, March & Olsen, 1972).

I address the degree to which decision-making in education is rational or chaotic in the next chapter. Here, however, I provide a description of the first three steps – problem identification, search, and decisions – in the schools in my sample. I pay particular attention to the search phase, because this is an area that has not yet been adequately studied in the public education setting. I omit the implementation phase because the converse is true; a wealth of literature exists on how schools implement selected programs for improvement (e.g. Cohen, Moffit & Golden, 2007; Honig, 2006; Spillane, Reiser & Reimer, 2002; Spillane, 2000).

Problem Identification

One of the key assumptions of performance-based accountability systems is that providing information about student performance will start schools on the path to improvement. No Child Left Behind (NCLB) disaggregates student performance on the state standardized tests along various subgroups – including race, socioeconomic status, English proficiency, special education status – and it is assumed that this level of detail will help schools to solve their most glaring problems, some of which may have been hiding in plain view from school and district administrators. The larger IES study on which this dissertation is based designed the sample with the specific goal of teasing out and testing this assumption. Six of the eight schools in my sample failed to make Adequate Yearly Progress (AYP) on the state test (the PSSAs) following the 2007-2008 school year, with one school failing in each of the disaggregated subgroups. In this way, the state had officially notified the majority of the schools in the sample that they were underperforming and should take action to improve.

In an article from the larger IES study, Beaver and Weinbaum (In Press) found that schools used state assessment data for three purposes. First, they used state data as launching pad to collect or analyze their own data, for example by instituting new benchmark exams or purchasing new data management tools. Second, they used state data to guide and prioritize their school-wide improvement efforts, for example by aligning their curriculum to the standards or investing in professional development for teachers across all grade levels. Finally, they used

state data to focus on specific student needs, for example by instituting new

individualized remediation or differentiated instruction strategies. That said, the

authors also found that school personnel did not usually treat the state assessment

data as groundbreaking information. Most school-level personnel reported that

they were already well aware of the many problems with specific subgroups in their

school, and that the test data merely highlighted what they already knew. School

personnel also believed that the test did not yield useful information because it

provided a static measure of student performance as opposed to a dynamic view of

student performance over time. This finding is in line with the literature, which

suggests that school and district personnel's perceptions of data use have

implications for school improvement efforts (Coburn & Talbert, 2006).

My findings suggest that schools dutifully use state data as a key indicator of

the "problem" in their schools, but treat this information as merely a starting point

for them to delve deeper into the problems that they face. In this dissertation study,

I cast a wider net, asking school and district personnel to talk broadly about the

various problems they face, how they identified those problems, and what they are

doing to fix them. Although many respondents mentioned the role of performance-

based accountability systems in identifying problems, they also spoke about the

importance of relying on two types of school-level indicators – internal data and

observations.

Internal data for problem identification includes the active collection,

management, and dissemination of student-level data for decision-making purposes.

During the first year of data collection for this study, five of the eight schools in my

sample had put in place interim assessments or "benchmark exams" to monitor

student progress on key academic indicators throughout the year. By the third year

of the study, all eight schools had some sort of benchmarking tool in place school-

wide. Schools and districts used their internal data to identify gaps in the

curriculum (i.e. poor alignment to the standards), identify individual students or

groups of students for remediation, and provide teachers with targeted professional

development opportunities. Some schools in the sample had become powerful

producers and consumers of internal data. ELEM 2, for example, regularly ran a

"War Room" in which a set of mid-level school managers met to discuss the data and

identify any remaining areas of weakness in their programs or strategies. And a

school-level administrator in ELEM 4 explained:

> "Needs are really determined first and foremost through data… So everything that we do is built around that, and everything we do is sort of built with the end in mind and backwards map and backwards plan all that, to say the very first step is what are our needs? What does the data tell us are our needs? And then what is it that we want to achieve? What are those goals, those smart goals, that are very measureable, time-bound, not qualitative. We want to make it as black-and-white as possible, where we know at that point in time whether we hit that goal or we didn't hit that goal, and that typically is tied to whatever achievement results we want to ultimately achieve, short-term and long-term." (Administrator, ELEM 4)

Other schools, however, struggled to make sense of the data. When HS 3 first

instituted *4Sight* benchmark exams they didn't know if they could trust the data,

because they saw a wide discrepancy between the scores on this test and the PSSA

exams, even though the two exams were supposedly aligned. Other schools

reported that they collected massive amounts data but then were unsure what to do with all the information they had collected. One principal explained that his school started using a benchmark exam but was reluctant to collect more data. "It would be nice to have the information," he said, "but we're not utilizing all the data we have today to its fullest. Why bring in any more not to be used as it possibly could be?" (Principal, ELEM 3).

In an effort to make sense of internal data, some schools purchased expensive data warehousing products that promised to help decision-makers identify trends and identify problem areas for their schools. In some cases, these products sometimes helped decision-makers to identify problem areas. HS 2 was one such example. They instituted a data-warehousing tool that helped them to look critically at areas of need in their school. Explained one district administrator:

> "We were assessing students, but we weren't doing anything with that data. So we had above average, we had our below basic, but that information was just sitting, kind of, in somebody's desk or whatever. We didn't do anything with it, so we started to take that out, take a greater look at it, find some targeted interventions for those different students" (District Administrator, HS 2)

In ELEM 4, administrators had purchased a data management tool but teachers were having trouble finding the time to use it as administrators intended. Said one teacher, "I'm trying to use *AimsWeb*. I don't know if you're familiar with that. But the amount of time it takes for the volume of kids I have right now is difficult to be able to get the data in. I'll do the assessments and then can't get it in, or I'll skip a week, and then I'm off a week, and so to get all of that in is a challenge" (Teacher, ELEM 4).

The school eventually remedied this problem by instituting "data discourse teams" that analyzed and interpreted the data in a team setting to help come to a common understanding about the meaning of the data.

Despite some of the setbacks associated with internal data collection and analysis, schools widely reported that they trusted these sources of data far more than they did the state generated PSSA data. The consensus among all respondents in all the schools in the sample was that internal data, while time consuming to collect and interpret, helped schools pinpoint the problems they faced and put them on a path to finding appropriate solutions.

The final way that schools and district identified problems was also perhaps the simplest way: they simply made observations about the various issues that they saw in their school from day to day. Perhaps the most obvious observations of school problems were the ones that respondents felt were outside of their control, namely changing student and community demographics. In fact, this was the most oft-mentioned problem facing schools in my sample – school personnel said that the 2008 recession had led to greater numbers of students growing up in homes under economic stress, which led to problems in the classroom as well. To be sure, the tone of these comments varied widely. While some respondents spoke with great reverence for the difficulties their students faced on a daily basis, others were quick to blame parents for becoming complacent about their children's academic achievement. In one particularly flippant comment, a teacher from ELEM 1 explained her school's main issue as follows:

"We have poverty. We have parents who have such limited ability they can't possibly help those students. We have parents who feed their children on the idea if you don't succeed you can get some kind of compensation, like social security. Our parents want their kids labeled as "learning disabled" so they could get checks in the mail. It's a way of life – this is an inter city school and it's a way of life to not do well or it's not important to do well, somebody will come along and give you what you don't have and I don't think kids are motivated." (Teacher, ELEM 1)

In addition to student demographics, respondents were also keen observers of social capital issues within the district, recognizing a lack of communication or low levels of collaboration among teachers and administrators. Respondents sometimes described social capital problems as issues endemic to the school environment and likely would not be changed in the near future. For example, teachers in ELEM 3 said they felt their school was treated as a pariah in the school district, and that the superintendent funneled more money to the other elementary school where the students came from families that were wealthier and more involved in the education system. This situation, they said, was not likely to change. On the other hand, HS 4 and HS 3 both recognized that there was a lack of trust between teachers and administrators in the school and, by Year 3, both schools had started to foster greater levels of collaboration to fix this problem. The difference in these two approaches is that, in the first case, teachers identified with the social capital problem but were passive about it; whereas in second instance with the high schools, the schools identified the problem and took an active role in fixing it.

In general, many respondents reported that they believed that problem identification was the easiest of the four decision-making steps. This is perhaps due

in part to the fact that respondents relied heavily on observation as a problem

identification tool. An building administrator in ELEM 3 described the problem

identification phase as "pretty easy" because they simply observe whether they have

the right materials or whether they need new ones. And a building administrator in

ELEM 1 said, "You'd have to be pretty stupid not to know there are problems,

wouldn't you?" When pressed about how he might use internal data to help inform

the problem identification phase of his decision-making process, he responded, "See,

I think a lot of things are transparent" (Building Administrator, ELEM 1). In other

schools, administrators used all three of the tools at their disposal – state data,

internal data, and observations – to identify problems. A district administrator at

ELEM 2 said that she puts a lot of time into combining these sources of information

into identifying the problems her schools face, explaining, "I think you have to

clearly identify the problem before you can do anything else. And whatever time it

takes to identify that problem, you need to put into it. Sometimes the problems are

very clear, and sometimes they are masked and if you go with the first vision you

are totally on the wrong track" (District Administrator, ELEM 2).

     Overall, schools identified on average seven problems in their school that

needed fixing. In Figure 4.1, I display the problems that schools identified, along

with their frequency of mention. I do not include "Failure to Make AYP" as a

problem, although this was the case in six of the eight schools due to the nature of

the sample.

Figure 4.1

Problems Identified in Sample Schools and Districts

Problem Frequency
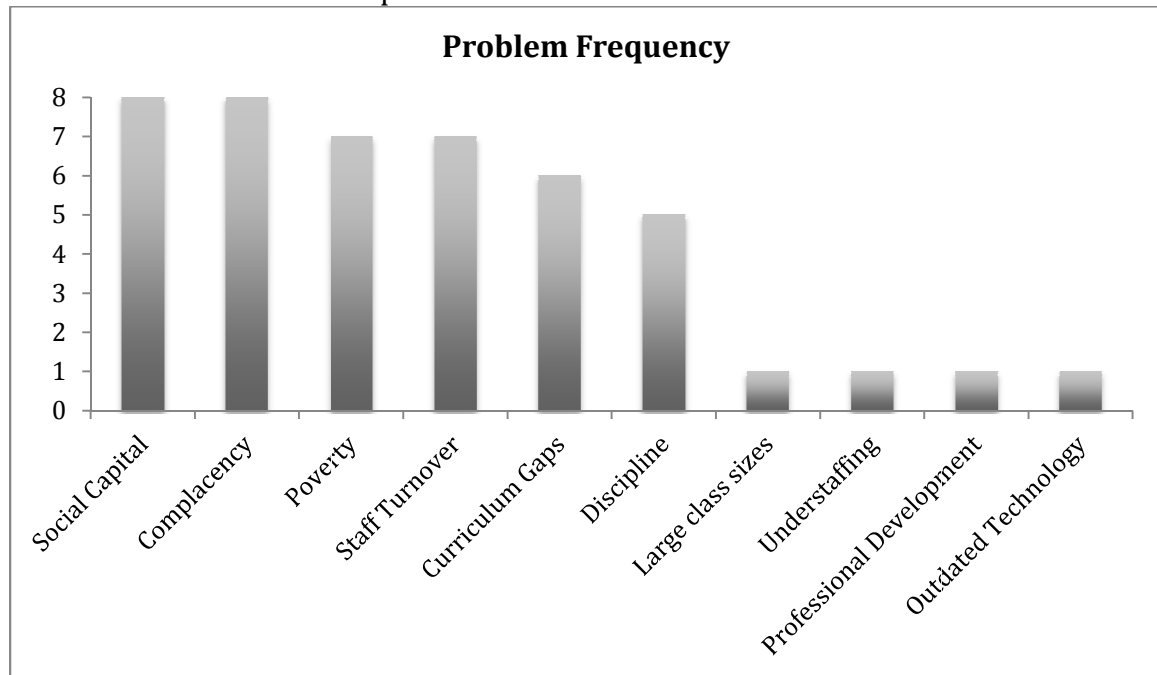
Source: Field notes and memos

As shown above, social capital problems, which included a lack of communication among personnel or a culture of mistrust in the district, affected all eight schools in the sample. Another problem mentioned in all eight schools was that students and teachers alike did not take the state standardized test seriously, leading to a feeling of complacency about student performance on this outcome measure across the district. Economic hardship among students was a commonly mentioned problem, as were high degrees of staff turnover and the misalignment of curriculum materials to state school goals or state standards. Finally, discipline issues (including attendance, classroom behavior, gangs, and dropouts) ranked high among the problems in schools.

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Search

Although schools are supposedly transparent, public institutions, it is surprising how little we know about how they search for ways to raise student achievement levels. We assume, for example, that school actors have a method for searching for potential solutions. Although there may be some schools with clearly defined processes around search, other schools alter their processes based on the decision at hand, and still others lack processes all together. It is tempting to simply assert, therefore, that making generalizations about search is an exercise in futility because such processes vary from school to school. The data from this study show, however, that a descriptive analysis of school and district search strategies is a worthwhile endeavor. In this chapter, I describe how schools search for new programs and strategies for improvement. Included in these descriptive analyses are examinations of the factors that schools consider during the search phase of the decision-making process, the locus of control for search in districts and schools, and the sources of information (either familiar or technical) that school actors use to support their decision-making process.

The descriptive analyses paint a picture of how schools approach the search phase of the decision-making process, especially when they have been called upon by the state to improve student achievement (as measured on the state standardized tests). To fully examine these various aspects of the search process, I employed case-ordered descriptive matrices, which are specialized qualitative databases designed to allow cross cutting themes to emerge from the data in a

controlled way (Miles & Huberman, 1994). The first step was to code the interview

data with codes that were aligned to both my research questions and emergent

findings. Table 4.1 contains the list of codes that align to each research question

pertaining to search, as well as the definitions that I created for each code.

Table 4.1

Search Code and Research Question Alignment

RQ2: How do schools and school districts search for solutions to perceived or formally identified needs for improvement?	
(a): What factors do schools consider when searching for potential alternatives?	
Code	Definition
FACTOR	Description of the factors that went into the consideration of a particular decision. May include data.
(b): Who are the decision-makers? To what extent is search tightly controlled and to what extent is it dispersed among many actors? How do districts guide the search process for schools?	
Code	Definition
SEARCH: WHO	Who conducts the search process at the school or district levels.
SEARCH: INCLU	Search process is guided by a large and diverse team of individuals in the school or district
SEARCH: EXCLU	Search process is exclusive to a small group of decision-makers
SEARCH: DISTRICT	Search process originates at district, or is mandated by the district
SEARCH: SCHOOL	Search process originates at the school level
LEAD: STYLE	Description of leadership style and relationships with staff
(c): What sources do schools and districts use (human, technical, or other) when searching for potential alternatives and making decisions? What is the perceived validity and applicability of information coming from these sources?	
Code	Definition
SEARCH: TECHN	Description of technical sources used to gather information about available alternatives. May include using professional associations, conferences, research literature, and vendors.
SEARCH: HUMAN	Description of the individuals or groups who help to inform/guide the search and decision-making process. May include copying a strategy from another school or district or the IU.
SEARCH: VALID	Description of the degree to which people trust the information they receive during the search process.

Next, I created output reports for each group of questions, containing the list of quotations that pertained to each set of codes. After reviewing each quotation, I input the information into an Excel spreadsheet containing columns of analysis variables and metavariables that formed the basis of the case-ordered descriptive matrices. Once the information was in the case-ordered descriptive matrices and aggregated to the district level, I looked across cases at all aspects of the search process. In total, I created three sets of matrices, one for each of the components of Research Question #2.   I detail my findings in each of the three areas below.

Factors Schools and Districts Consider During Search. When decision-makers initiate a search for a new strategy, it is assumed that they have in mind certain factors that will guide their search process. Although this is not always the case – a school administrator could, for example, explain her school's search for a new curriculum supplement by simply saying, "we needed something that would raise student scores on the state test" without going into detail about the reasoning behind her search for a new strategy – the majority of schools in my sample were able to provide insight into the factors they considered during the search process. Examining these factors helps to shed light on decision-makers' motivations and reasoning as they look to adopt new materials or approaches in their schools.

To analyze the factors at play in my sample, I reviewed the "factor" codes in the interview data and input them into the case-ordered descriptive matrix with the following variables: a) a description of the issue or problem at hand; b) the factor

that the school or district considered during its search for solutions to this problem;

c) a marker as to whether this factor was generated internally or externally; and d)

the stage(s) of the decision-making process that the identified factor primarily

impacted. Analysis from the case-ordered descriptive matrices yielded three

separate factors that schools consider during search: a) alignment to state and

federal accountability policies; b) the right "fit" with identified student needs; and c)

the accessibility of the new programs and strategies. Below, I describe the three

main factors in detail.

Accountability

Alignment to performance-based accountability policies was by far the

common factor that respondents identified as informing their search process. This

is perhaps due to the nature of the sample – six of the eight schools were labeled in

"warning" for failure to make Adequate Yearly Progress (AYP) under No Child Left

Behind following the 2007-2008 school year, and had been specifically called upon

by the state to adopt strategies aimed at improving student scores on the state test.

The skew toward accountability is also due to the nature of the interview protocol,

which asked specific questions about the impact of the state test on school efforts

for improvement. Accountability policies were nonetheless an important driver of

school and district search strategies, even in the two schools that made AYP

consistently throughout the three years of the study.

There were two ways that schools used accountability measures to guide their searches. The first, and most prevalent, was to find programs and strategies that were aligned to either the state standardized test or the state standards (or both). The Pennsylvania Department of Education encourages alignment by publishing "anchors" and "eligible content," which create direct links between the standards and the tested content. Decision-makers reported that they only looked for new products if vendors could claim that their products were aligned to the state standards. Said one high school teacher, "For the math we just had a curriculum rewrite this summer. We sat down and made sure there were no holes from top to bottom at the high school, that kids have access to every possible thing they need to know for the PSSAs" (Teacher, HS 3). In fact, all eight schools in the sample mentioned that they actively used the standards to realign, re-sequence, or re-pace their instruction or curriculum to match the state standards or the state assessment. Two elementary schools in the sample, ELEM 2 and ELEM 4, adopted a standards-based report card district-wide. By the third year of interviews (in 2011), schools were also starting to talk about a new sort of standards alignment, namely that of alignment to the Common Core State Standards. Pennsylvania adopted the Common Core standards in July 2010, and district administrators were already anticipating the many changes they might need to make to their existing materials to meet the standards' rigorous career and college readiness goals.

The second factor related to accountability was that schools used data gleaned from their PSSA results to target programs and strategies to identified areas

of need. For example, if a school found that it did not make Adequate Yearly Progress (AYP) in a particular grade for a particular subgroup of students, decision-makers in that school would often report that they concentrated their efforts on raising the scores of those students. Although schools reported that they concentrated their efforts on specific groups, their focus was not as laser-like as they might think. In the larger CPRE study of school improvement (on which this dissertation is based), researchers found that, regardless of their accountability status, schools adopted many varied approaches for improvement in response to accountability measures (Weinbaum, Weiss & Beaver, 2012). The schools in this subsample of mostly "warning" schools echoed those actions, choosing a whole host of strategies that they believed might raise student achievement and get their schools off the warning list.

That said, school and district decision-makers reported that they searched for and evaluated new programs and strategies that would provide them with the greatest gains in student achievement (subgroup deficiency focused or not). When asked what factors the district considered when searching for new strategies, one district administrator put it succinctly, saying, "Well, the first thing is student achievement. What's it going to do for my students? Is it going to help my students?" (Administrator, ELEM 1). This administrator was specifically talking about achievement on the PSSAs. And when asked how much AYP and the PSSA scores figure in to how her school finds and selects new programs, one high school teacher said, "Oh it's everything we do" (Teacher, HS 1).

Fit

A search process could be said to be about "fit" if school leaders mentioned that they actively searched for programs and strategies that would align to their school's identified needs. First, nearly all the schools used internal data such as benchmark tests or teacher reports to find programs to fill identified areas of student need. In many cases, schools might use the data generated from the state standardized test as a "starting point" and then use benchmark tests as a way to drill down and get a full picture of individual students' needs over time. One high school (HS 3) used benchmark testing to get more information on the subgroup of students that had caused the school to miss its AYP benchmarks, which was the economically disadvantaged subgroup. In other schools, school leaders explained that they believed benchmark exams were a far more reliable indicator of student needs than the state tests. Another high school (HS 2) was using 4Sight exams (probably the most popular benchmark assessment in the state) along with other classroom-level indicators to identify students for remedial classes. The principal explained:

> "Based off your 4Sight scores, we will use those scores to determine where you're going to be scheduled for your classes. So if you're doing well, then that's an indicator. It's one indicator. We'll use teacher input, we'll use your scores from the previous classes, and we'll use these scores. So it's a three-headed monster that's going to be used to determine where you're going to be and what is best for you." (Principal, HS 2)

Student-level data helped the school search for the right remediation strategies for each individual student. Schools varied in their approaches to data-driven decision-making, however. Some schools, like HS 2 above, implemented

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benchmark testing as a sort of pulse check to get a sense of how students were performing throughout the school and target remediation. Other schools, meanwhile, conducted thorough data analyses of their benchmark data and used that information to search for the right fit with potential curriculum programs, supplemental materials, and instructional strategies. ELEM 2 was perhaps the best example of the power of a data-driven approach to guide school search processes. In this school, there was a data team – consisting of the school's principal, math and reading specialists, guidance counselor, and a specific "response-to-intervention" coordinator – that met in a "war room" to discuss the data on a regular basis. The team would look at data from one of four different benchmark or universal screeners they were using in the different grades and look for gaps in curriculum. In one instance, the data showed that first graders were not receiving adequate instructional coverage in phonics and the school's reading specialist worked with the district reading supervisor to find a new curriculum supplement that would fill that specific need. The result of this strategy was a patchwork quilt of programs that together formed a curriculum for students – and school leaders were constantly examining the quilt for holes and sewing new patches throughout the school year.

These data-driven techniques are about finding the right fit for individual students or groups of students, and therefore can be labeled as "demand-driven" search strategies. There is another type of evidence-based approach to finding programs and strategies, however, which is based on supply rather than on demand. School and district leaders spoke often of searching for programs that were either

"research-based" or "proven effective." In essence, they were looking for evidence

that programs had a track record of success, as validated either through external

scientific research or other evidence of success. I will go into much greater detail

about the technical and word-of-mouth searches later in this chapter, but for now I

will simply assert that "evidence-based" programs were an important factor for

schools as they searched for improvement strategies.

Aside from data-driven need assessments, decision-makers also assessed

"fit" in more personal and emotional ways. This approach is consistent with

Abelman and Elmore's (1999) assertion that school personnel make decisions based

on their "internal accountability," including their beliefs about student learning and

student achievement, their values, and goals for their school. Decision-makers are

often eager to explain their personal search criteria for new programs and

strategies, especially if they come from a deep-seated belief that their search criteria

will lead to better results for their students. For example, the assistant principal in

the school below (ELEM 1) talked about how it was important to change the

instructional approach for the district's high school students:

> "I think we need to create better thinkers, so the thing we're focusing on now
> at the high school is a higher influence in more meaningful and complex
> reading and writing. So that's been our new initiative, that we are slowly but
> surely going away from the more mundane PSSA tasks and strategies to more
> higher level thinking skills with complexity and thought and reflection than
> ever before." (Assistant Principal, ELEM 1)

Similarly, when I asked an elementary school principal why she wanted to focus on

character education, she responded:

"It is something I think is so critical in an elementary building. I have always believed that it is half of it; if you can get the kid to buy in that this is our school and [our school] is the best. You know, respect. You walk down the hallway that some says Good morning Dr. [Principal], and you get a response. I think that builds into the performance in the classroom, without a doubt." (Principal, ELEM 4)

In several cases, administrators took it upon themselves to redesign the way that their schools or districts approached the search process on the whole, for example by instituting frameworks around search or cyclical curriculum review processes. But personal beliefs drove decision-making on a smaller scale as well, with several teachers working on their own to identify student needs in their classrooms and design interventions to meet them. In one school (ELEM 3), a fourth grade teacher realized that her students did not receive adequate instruction in basic grammar concepts, and so she took it upon herself to find online lesson plans on the Internet that would meet that need.

Ease and Accessibility

This category of factors is the quintessential case of "looking under the lamppost." School and district decision-makers reported that they often searched for materials in familiar places – checking with colleagues, relying on previous programmatic use in their district or neighboring districts, or simply copying others. I spend considerable time in the next chapter exploring how using ease and accessibility as a factor during search can affect the entire decision-making process, leading to decisions that are limited by both geography and familiarity. Suffice it to

say for now that schools and districts often lack the time and resources to do robust

searches for new programs and strategies, and therefore limit their searches to

what they know.

Choosing an "easy" search process could take three forms. First, schools

could simply scale up an existing program that was being offered to a subset of

students in the district to a larger set of students. This was the case in HS 1, where

district administrators needed to find a remediation program for the high school.

Instead of searching for a wide range of options available on the market, they

decided to scale up the remediation program that the middle school was using. Said

one district administrator:

> "It was something that was being used in the district for remediation, so
> many of our teachers at the high school were already familiar with that
> program. And it was a method for remediation. What we decided to do was
> to use that program to create the remediation, the benchmark assessment,
> and the alternative assessment to have students show proficiency in reading
> and math because it was something we were already familiar with and we
> had that capability." (District Administrator, HS 1)

In this sense, scaling up existing programs has the advantage of a proven track

record of success, as well as familiarity with intricacies of the program (which help

for smooth implementation). In this case, it was certainly possible that the program

might not have been a good fit for high school students, or that expanding its use to

remediation, benchmarking, and alternative assessment might flop, but the district

felt most comfortable truncating search in favor of a familiar program. It is

important to note that districts that pursued this approach spoke not only of

"familiarity" but also of "alignment" – they believed that using familiar programs was an effective way to align programming throughout the district, creating a coherent approach to instruction and remediation.

A second approach was to look to other districts and copy their programs and strategies. School and district decision-makers are looped in to various professional and personal networks that provide access to information from neighboring districts. In most cases, these relationships are open and friendly, with information flowing in both directions and decision-makers observing other schools as they implemented potential programs and strategies. Said one teacher, "I learned of Study Island from friends. Their children were working on it, and they live in other districts, and I'm saying, well, we don't have it, and we don't pay for it, and this is what we use. They were advocates, because they showed me. I said that makes sense. That makes a lot of sense" (Teacher, ELEM 3). In some cases, teachers brought in programs that they had used themselves when they worked in other districts. For example, an assistant principal at one high school described how he selected a new reading program for his school. Both of his reading specialists had used a program called "Read 180" in their previous positions – one of the specialists had worked in Georgia before coming to Pennsylvania – and thought it would be a good fit for their high school. So the principal asked them to pitch it to him (along with a few other options) and finally selected the program that the reading specialists knew the best. In a few isolated cases (e.g. ELEM 3), the information flow was not quite so free and open. In these cases, decision-makers felt pressured to

copy neighboring districts out of a fear that they would be out-scored on the state standardized tests; in other words, they were driven by competition rather than by a desire to share effective practices.

Finally, a third approach that falls into the "ease" category is when school an district decision-makers pursued a hands-off approach in which they simply waited for vendors to come to them with new programs and strategies. Vendors approach schools often with offers to pilot their products, partake in professional development opportunities, and take advantage of special deals and limited-time offers. For some schools, vendor pitches are simply another part of a complex and involved search process, whereas for others, it *is* the search process. Said the curriculum coordinator in a relatively large urban district, "The vendors basically find you. You really don't have to search them out too much, because they're for profit. So they find you pretty easily. There's a lot of good stuff out there. The thing is, you've got to sift through it and find what's right for your district. And make sure that you're not duplicating, and it's meeting your needs" (District Administrator, ELEM 1). As this administrator admits, he lets vendors determine the field of available alternatives and then selects from among them.

Locus of Control. Organizational theorist Karl Weick (1976) famously asserted that decision-making in schools resembled an "unconventional soccer match" in which there were several goals, the field was round and sloped, the rules were fluid; but the game was strangely played as if it made sense. Cohen et al. (1972) have

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similarly described schools as "organized anarchies," in which teachers have widespread freedom to generate ideas from the ground up, or bypass administrative control all together. Their depictions of the school context run in direct contrast to the Weberian depiction of strong bureaucratic structures that feature top-down control and limited teacher responsibilities (Weber, 1947).

Which depiction more accurately fits the context of search procedures in public education today? The answer is that search in schools and districts is far more orderly than Weick and his colleagues might believe, but also more flexible and collaborative than Weber might predict. Although some districts in my sample exerted tighter control over decision-making than others, the overall variation among districts was actually quite small – the vast majority of districts employed a "middle-out" strategy for decision-making. A middle-out strategy is an alternative to "top-down" or "bottom-up" decision-making approaches in which middle management – in this case, school administrators, department heads, reading or math specialists, etc. – play an important role in searching for improvement solutions (Floyd & Wooldridge, 1994; Nonaka, 1994). Although theorists might employ differing terminology – Nonaka (1998), for example calls it "middle-up-down management" – the principle is the same. The top-level managers provide the vision and some structure around decision-making, for example by setting deadlines and budget limits. Mid-level managers then perform all the critical tasks of researching and finding potential options, getting consensus, and pitching their preferred solution to the top-level management. To be successful, these mid-level

managers must be charismatic, organized, and detail-oriented. Says Nonaka (1998), "They work as a bridge between the visionary ideals of the top and the often chaotic reality on the frontline of business. By creating middle-level business and product concepts, middle managers mediate between 'what is' and 'what ought to be.' They even remake reality according to the company's vision" (p. 32).

Discussions of middle-out decision-making in the education setting are situated within the literature on Distributed Leadership, which is a study of the locus of control in school decision-making. Distributed leadership studies take as a given that leadership can originate from multiple sources, creating a "leader plus" aspect to decision-making and, by extension, search (Spillane & Healey, 2010). Distributed leadership, however, is not a study of management approaches in schools, but rather a conceptual frame for researchers to use when studying school settings. The theory does not allow for descriptive findings of effective practices for varying levels of distribution in leadership. I do not take a distributed leadership approach in this study, which allows me to make distinctions between top-down, bottom-up and middle-out approaches, including potential benefits from the middle-out approach. Specifically, I find that middle-out approaches foster district-wide collaboration, increase the flow of information, improve teacher buy-in to potential new programs for improvement, and free up district administrators to concentrate on broad-scale efforts for improvement.

Before discussing districts' middle-out approaches to decision-making, I briefly explain how I used case-ordered descriptive matrices to come upon these

findings. I pulled the data from the codes that pertained to the locus of decision-making control (see Figure 2) and input the quotations into an Excel spreadsheet along the following lines: a) Who conducts the search; b) the degree of dispersion in the search process (unilateral versus collaborative search); c) the origin of search (top-down versus bottom-up); and d) the supportive mechanisms that enable search (committees, frameworks, etc.). In attempting to classify each quotation as either bottom-up or top-down, I realized that this dichotomy did not fit the data, as many schools relied on mid-level administrators to conduct searches. As a result, I employed the "middle-out" variable, and soon found that a majority of entries fit into this category of response. Of the 167 total catalogued responses, 39 were bottom-up approaches and 47 were top-down, but 81 of the responses were labeled as middle-out. Although nearly half of the cases in my sample fit into the "middle-out" search category, not every decision that a school makes is universally a middle-out decision. The average school makes many different decisions at the same time, and some might be bottom-up, middle-out, or top-down depending on the perspective of the interviewee, the limitations on the search context (e.g. time crunches or political considerations), or the scope of the decision itself. I categorized overall district approaches based on aggregated depictions of the locus of control district-wide.

When employed in a thoughtful, deliberate manner, middle-out approaches led to generally greater levels of collaboration and reported levels of satisfaction among staff at all levels. Middle-out decision-making did not exist in a vacuum,

however – districts employing this approach had in place supportive structures and guidelines for decision-making that were specifically aimed at supporting the search efforts of mid-level managers. These support mechanisms included departmentalization, committees, and "pre-implementation" (i.e. piloting) strategies. Perhaps not surprisingly, high schools were more easily able to institute middle-out decision-making because their larger size already lent these schools to a departmentalized structure. In one high school (HS 1), a department head explained her role in the search process:

> "Things work both ways, this is one of the reasons I like working here. You have communication in both directions. If someone within the department comes to me with something and there is enough interest within the department and we think it is beneficial to the school, I take it to the curriculum supervisors, I go up to the assistant principals, the principals, whoever need to hear it and we will run it through and if they are on board then we will flush that out. But it also comes the other way, usually each year there is something that comes down from the superintendent's level, saying OK, we are going to focus on this. Principals, how are you going to do this in your building, the principals will go to department heads, how are you going to do it in your department. It does work both ways and I have been very happy with that." (Department Head, HS 1)

Her explanation fits perfectly with the middle-out approach. She is the hub for search activity in her school, culling together the ideas generated by teachers, and also making sure that the ideas generated in the school are aligned to the vision created at the district level. In this particular case, the principals and the department heads are both the mid-level managers that make the middle-out approach effective.

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The approach worked in elementary schools as well, but was most effective when there was a district-wide embrace of collaborative decision-making in which the majority of search responsibility had been ceded to the school level. An administrator in one district (ELEM 4) explained that he viewed the district's role as one of the "convener" of school-level administrators so that they could come together to make collaborative decisions:

> "We set up a big whiteboard. We brainstorm everything. We synthesize them into categories. Okay, so this is what we think. Okay. We're going to get a committee of the principals, the reading specialist, special ed representative. We're going to come into the room…Agree with them, disagree with them, and let's come up with different issues. Put them all on the board. What are the political issues? What are the educational issues? What are the implementation issues? What are the program issues? And then that gives you a structure to work through coming up with a really good solution." (District Administrator, ELEM 4)

This quotation provides a good example of how the district can play the visionary role, while allowing school administrators the freedom to explore potential solutions for their school context, as well as strategies that are crosscutting for all the schools within the district.

Of course, not all middle-out decisions are made in a thoughtful, collaborative manner. For that matter, a middle-out approach to decision-making is not necessarily a better approach than a top-down or bottom-up approach.   In most cases, a middle-out approach was associated with greater levels of collaboration (as measured by the variable of "unilateral vs. collaborative" in the case-ordered descriptive matrix) and higher reported levels of teacher buy-in to new projects.

However, this was not universally the case. In some instances, a strong-minded

principal would commandeer the search process at the school level, underutilize

teacher input, and conflict with district approach. This was the case in HS 2, where

the principal decided to implement a new program that combined math with

physical education. Although the teachers were not opposed to the new program,

they were not consulted during the search process either. And although the district

administrators gave the principal license to pursue this new strategy, it did not align

well with the district's goal of focusing on test score improvement, which eventually

lead the superintendent to grow increasingly dissatisfied with the principal's

performance. By the third year of interviews, the superintendent indicated that this

principal would most likely not stay in the district much longer.

Although the majority of schools in my sample searched in a "middle-out"

fashion, there were two schools that pursued a mostly "top-down" approach (HS 4

and ELEM 1) and one school that pursued a mostly "bottom-up" approach (ELEM 3).

I discuss these outlier cases briefly. I label HS 4 and ELEM 1 as pursuing a top-down

search strategy because they met the following conditions: First, the district had

sufficient capacity to conduct searches; second, the district had a strong vision for

the programs that it wanted to find; and third, the district fundamentally distrusted

school-level personnel to search for improvement solutions on their own. The

district for HS 4 had a staff of at least five administrators and was in the midst of a

tense renegotiation of the teacher contract. As a result, the district offices dictated

policy without asking for principal or teacher input. ELEM 1, which was a larger

urban district, selected a scripted reading program because they did not trust

teachers to raise student achievement scores on their own. Said the principal:

> "It is not like I have much say on what curriculum we have. It is pretty much,
> 'This is what we have and you need to work it.'…I had a teacher last week, I
> said, 'You are adapting, why are you adapting? You are a second year
> teacher, you used to teach preschool, don't adapt. You need to follow it. If you
> need to adapt you need to come talk with me or [the Assistant Principal]
> first.' So teachers don't have a lot of leeway in that. Well, that's okay. If it's
> data based, again, how can you argue with it?" (Principal, ELEM 1)

In this school, the superintendent wanted all the elementary buildings to work on

the same content at the same time, and so he would not authorize teachers or

principals to adapt the curriculum to fit their needs.

ELEM 3 pursued a bottom-up search strategy. While the romanticized ideal

of bottom-up decision-making is one of teachers coming together to determine the

direction for new programs, this was not the case in this school. Here, teachers

worked in a fractured manner and reported that, even though they appreciated that

the principal usually took their suggestions without question, they felt isolated and

even abandoned by the district staff. The district curriculum director position

remained vacant during the three years of interviews, which meant that the district

had very little capacity and the superintendent couldn't set a cohesive vision around

search. As a result, teachers were forced to take it upon themselves to align their

curriculum to the state standards, pace their curriculum to align to the state tests,

and find appropriate resources for their classrooms. As the example of ELEM 3

demonstrates, truly bottom-up decision-making with little structure imposed from above can create a chaotic decision-making environment.

My findings suggest that there are some programmatic and structural arrangements that support a middle-out orientation. School structures that support teacher collaboration include altering the schedule to allow for common teacher preparation time or creating a structure around teacher meetings, for example by establishing Professional Learning Communities or topical committees. Of the eight schools in the sample, two had PLCs in place and a third (HS 4) was considering instituting them in the future, and five of the schools had some sort of committee structure in place. Carving out time and space for teachers to collaborate supports middle-out management because it allows mid-level managers at the school level to hear from classroom teachers about the issues that matter most to them.

A second structural arrangement is to create a tier of middle managers where one might not have existed before, or at the very least elevate the role of middle managers to include search functions. Schools employing middle-out approaches often had a cadre of personnel specifically tasked with searching for improvement solutions. In ELEM 4, it was the reading and math specialists. In ELEM 2, it was the elementary school principal. In HS 3, it was the two reading specialists working in concert with the principal. Whatever the combination, it is important that this person (or team of people) has a clear directive to conduct search activities, as well as pathways in both directions to gather input (from below) and present their proposed solutions to the decision-makers (to the top).

Finally, districts employing a middle-out approach often invited teachers to "pre-implement" potential improvement solutions. Pre-implementing is a form of piloting a potential new program. Administrators or mid-level managers give a select set of teachers access to a potential new program in their classroom for a few months or even a whole school year. The teachers then provide detailed feedback on the program to a committee at the school or district level, which helps the decision-makers make the decision about whether or not to fully implement the program in the future. One school in the sample, ELEM 2, expertly employed a pre-implementation strategy, and teachers reported that they felt engaged in the search process, and were more likely to help their colleagues implement new programs with fidelity if they had been a part of the program's selection.

Sources of Information. When decision-makers search for solutions to identified problems, they typically draw upon two sources of information. The first source is trusted individuals who can provide feedback on programs that they have used the past or are using currently in their own efforts for improvement. This may include individuals within the school, such as teachers, administrators, or even one's personal experience from working in a previous school or district. It could also include external sources, for example one's professional network of colleagues in neighboring districts or friends and family who work in the education sphere.

Evidence from business and marketing research suggests that word-of-mouth recommendations from trusted sources are powerful determinants of

decision outcomes. Berger and Schwartz (2011) find that even "idle chatter" can push a particular product to the top of the list of potential alternatives, and that popular products can quickly come to dominate the market. This may explain why certain products came up again and again in this study's findings. In particular, the computer-based remediation program *Study Island* and the *4Sight* benchmark testing program seemed omnipresent, even though these programs were not officially endorsed by an official agency or organization. Research also shows that school leaders play an important role in setting the trends in education programs and strategies. Findings from Iyengar, Van den Bulte, and Valente (2010) suggest that people in leadership roles and who have strong social networks facilitate the diffusion or "social contagion" of new products, causing favored products to catch on quickly. My findings echo these marketing research findings. For example, the search process in HS 3 was driven by two reading specialists who were outspoken in their support of a particular reading program called *Read 180*. Both of these specialists had used the program in their previous jobs in different districts. Although the principal asked them to come up with two other options before he made a decision, he said that he was heavily swayed by the strong support that they both expressed for their favored program, and he ultimately selected the *Read 180* program for the entire high school.

My findings highlight several benefits of word-of-mouth recommendations as a source of information during the search process. First, meeting with sources internal to the school district exposes decision-makers to a wide range of

experiences and instructional styles, and it also provides glimpses of potential factors to consider during search. (For example, decision-makers might need to look for programs that have a strong professional development component if many of the teachers in the school are new.) Second, working with trusted colleagues in neighboring districts allows decision-makers to observe programs in action and ask questions about potential pitfalls or strategies to effectively implement the programs. Third, and perhaps most importantly, school and district personnel report that they trust the information gleaned from personal sources more than they do information from third parties. Although this was not universally true in my sample – certainly some individuals reported the opposite – a majority of the interviewees in the sample said that they leaned on their colleagues for support because they believe that the information they receive would be trustworthy, applicable to their work, and easy to understand.

Trusting colleagues and friends is also the biggest downside to word-of-mouth recommendations as a source of information. Enthusiastic support for certain programs does not mean that these programs are necessarily well suited to the particular context and needs of the schools who are searching for solutions. Decision-makers can easily become drawn into a program if it has a track record of success in a neighboring district, and may subsequently ignore information suggesting a suboptimal fit for their school context. This is evidence of what cognitive psychologists call a "confirmation bias" (Nickerson, 1998) and education researchers – particularly sense-making theorists – have documented that

confirmation bias can play a strong role in how schools make decisions and

implement new programs for improvement (Spillane et al., 2002; Firestone, 1989).

There were several instances of schools that had fallen victim to the confirmation

bias in my sample, only discovering that particular programs were a poor fit after

they had made purchasing decisions for their schools. ELEM 3 was one such school.

They were struggling to find a new math program because their curriculum was

outdated and poorly aligned to the state standards. They chose not to ask internally

for teachers' opinions about a new curriculum, but instead follow the lead of

another Pennsylvania district that was considered to be a successful district.

Explains the elementary school principal:

> "We looked at other schools that have performed very, very well, and the one
> example I have is [our neighboring district] – the district is the size of this
> building, I think. But they're one of the top in U.S. News and World Report.
> They're one of the top in the state. They have an innovative superintendent
> that does great things. So we copy what others have as success." (Principal,
> ELEM 3)

Only in the third year of interviews did the principal admit that he wished the

district had invested more time in finding a program that was a good fit with the

needs of that particular elementary building, where social capital was low and

teacher turnover was high. The math program they selected, he admitted, was

facing resistance from the teachers who didn't like the new approach to math

instruction. But he wrote off teachers' complaints saying, "Not everything is perfect.

I mean there are drawbacks to everything. Every program that's out there, there's

no perfect fit" (Principal, ELEM 3).

A related drawback to word-of-mouth recommendations is that copying the

practices of outside districts makes it difficult for a school or district to be a true

innovator. Explains one district administrator in ELEM 2:

> "With the word-of-mouth, what I've found is that a lot of people spend time
> on 'what is,' instead of the vision of 'what should be'…For me, I'd rather read
> Harvard Newsletter and find out what is the direction and where everything
> is headed so that I could make the decision. So I do a lot of reading that way.
> Because I don't want this district to be 'what is'; I want it to be prepared so
> that other districts are looking to us. For the word-of-mouth, it depends on
> who you talk to, and you want to talk to the right people." (District
> Administrator, ELEM 2)

As this administrator suggests, technical sources of information avoid the

potential problem of copying practices that might be a poor fit for the school or

simply outdated. Technical searches include a broad range of activities, including

looking at websites, reading evaluations or other research, going to professional

conferences or workshops, and listening to presentations from vendors. If decision-

makers consult high quality research from trusted sources – for example the U.S.

Department of Education's WhatWorks Clearinghouse or well-respected

professional association publications – they minimize confirmation bias and expose

themselves to unbiased accounts of effective practices. Importantly, research may

help decision-makers determine the specific conditions under which programs and

strategies can be expected to have an impact in their schools. Technical searches

have similar pitfalls to human searches, however, because the search process is

compromised if the quality of the source is subpar. And unfortunately there are

many so-called technical resources that are misleading. For example, many

interviewees proudly touted that their programs were "research-based," when in fact the research in question was conducted by the vendor itself and was of low quality (for example, employing a small sample size, using anecdotal evidence, using ill-defined outcome measures, etc.). In other cases, school personnel admitted that they did online searches for new strategies, which opened up a host of options, but with few checks on the quality of materials.

Another popular source of technical information was the Intermediate Units (IUs), which are agencies that operate under the auspices of the Pennsylvania Department of Education (PDE). The IUs provide training and technical assistance to teachers and administrators on topics ranging from alignment to new state accountability measures to the adoption of new instructional strategies in the classroom. While some interviewees reported that they highly valued the IU trainings, others noted that the trainings were outdated and not very helpful. The principal at HS 2 said, "those workshops have been very frustrating because it seems every time you go to another one, they've changed their mind on something." And a district administrator at ELEM 2 said, "With the IU, they don't lead; they are kind of following so with them right now they'll offer things like on Common Core as it's happening. So if you just wait for the IU you are always behind."

My findings suggest that human sources of information and technical sources of information are not mutually exclusive strategies during search – several schools in the sample thoughtfully combined the two strategies in a way that maximized the strengths and minimized the weaknesses of each approach. The three districts that

employed a combination strategy were ELEM 2, ELEM 4, and HS 1. By the third year

of interviews, I could also include HS 3 as an organization pursuing a successful

combination strategy for search, as this high school spent a lot of time and effort

refining its search strategy. Even within this subset, however, districts searched in

different ways. Interviewees in ELEM 2 first used technical information to identify a

range of potential solutions and then looped in their colleagues – both internal and

external to the district – to help them further narrow the field of alternatives. As the

district curriculum coordinator for math explained, "My research and best practices

drive the dialogues that I have with the people that I work with, and that's where

the collaborative piece comes in." By contrast, HS 1 and ELEM 4 began their

searches by asking trusted individuals to provide recommendations based on their

needs and personal experience with specific strategies, and then validated those

suggestions with technical sources of information. Finally, HS 3 changed the order

of events depending on the decision at hand. In one case, it searched for a new

reading program by leaning first on the personal experiences of its reading

specialists (as detailed above), but flipped the process when searching for math

materials. The order of operations appeared to be inconsequential; interviewees in

all four districts reported that, regardless of how the human and technical search

process unfolded, the programs and strategies that they ultimately selected were

high quality, research-based, and likely to work well with their school context.

A few common threads emerged from the data about how districts supported

their combination search strategies. The first is that districts used their

Intermediate Unit (IU) both as a resource for technical training and as a valuable networking tool. One administrator in HS 1 explained that the district's search for a new reading program began with a workshop at the IU, but continued long after the workshop was over when he spoke with colleagues in neighboring districts through an IU-run administrator list-serve. Other interviewees mentioned that they had close personal relationships with particular IU employees so that they could bounce ideas off them in addition to attending specific trainings, for example on new state-mandated testing policies related to the Common Core State Standards or the end-of-year Keystone Exams. Another valuable resource for these "combination districts" was conferences. Conferences enabled decision-makers to network, learn from best practices, get exposure to current research, and gain access to a wide range of vendors. One strategy was to send a group of people, including administrators and teachers, to a particular conference and then ask the group to share their experiences to the whole school or district upon their return. Finally, combination districts all had some mechanism to gather information from teachers before they moved to the decision phase. For ELEM 4 and HS 1, the mechanism was Professional Learning Communities. For ELEM 2 it was asking teachers to "pre-implement" potential new programs. And for HS 3, it was establishing common teacher planning time and making clear that the principal valued input from teachers throughout the search process. In all four districts, the feeling was the same, however – teachers were valuable sources of information, the lines of communication were open, and the process as a whole was transparent.

Decision Point

Presumably once decision-makers have identified relevant problems and have conducted thorough searches for potential solutions, they then make a decision. The literature on bounded rationality suggests that, because decision-makers are flawed and are constrained by their environments, they will satisfice or use other heuristics to make the decision process easier (Guth, Levati & Ploner, 2010; Forester, 1984; Simon, 1972). This, of course, assumes that the decision-maker (or makers) has been tasked to select just one solution from a set of potential options. But evidence from the larger IES study suggests that, instead of using mental shortcuts to help them make their decisions, school actors select a whole number of solutions and hope that at least one of them will help to raise student achievement scores (Weinbaum et al., 2012).

The findings from this research also run contrary to the commonly held belief that high performing schools and low performing schools will select fundamentally different types of improvement strategies. Using data from the 2009 survey of all Pennsylvania principals, we found that low-performing schools were more likely to focus on test preparation strategies, but in general all schools, regardless of performance, selected many varied strategies for improvement (Weinbaum et al., 2012). On average, survey respondents reported devoting moderate or major effort to 15 unique strategies (of the 46 options listed on the survey) to improve student performance on the state standardized tests. In essence, schools operating in the context of performance-based accountability are

desperately throwing improvement strategies at the wall and hoping that something will stick.

Just what types of strategies are schools selecting? In the larger IES study, we established nine separate categories of improvement efforts where schools devoted their efforts (Weinbaum et al., 2012):

1. New instructional approaches

2. New student and staff schedules

3. New or aligned curriculum

4. State test (PSSA) preparation

5. Remediation for struggling students

6. Data analysis to guide improvement

7. Outside expertise

8. Rewards and sanctions for performance

9. Efforts to address non-academic issues

Based on the survey data, the most popular categories among schools statewide were adopting new curriculum materials (#3), conducting test preparation activities (#4), providing remediation for struggling students (#5), and conducting data analysis (#6). The least popular strategies were changing student or staff schedules (#2), bringing in outside support (#7), and establishing reward or sanctions for student performance (#8).

The qualitative interview data from the eight schools in my sample echo these findings. The most oft-mentioned decision for improvement was the purchase of new curriculum materials or the realignment of existing materials to performance-based accountability measures – I recorded 52 mentions of investments in curriculum across the eight schools. Making changes to schools' instructional approaches was another popular trend. These decisions included investing in professional development, moving to a co-teaching model, and promoting differentiated instruction and other instructional techniques aimed at school improvement. The third most popular category was test preparation activities, which included purchasing programs and strategies that used a "drill and kill" approach to prepare for the state test, as well as lower-cost solutions like practicing question types or content. Finally, school personnel reported that they invested in new data collection and analysis tools, for example by instituting new benchmark exams or investing in data warehousing tools.

Figure 4.2

Decisions for Improvement by Area of Emphasis

Investments in Improvement Strategies

(Bar chart with y-axis labeled "Decisions" ranging from 0 to 60, x-axis labeled "Area of Emphasis")

- 1. New instructional approaches: ~38
- 2. New student or staff schedules: ~8
- 3. New or aligned curriculum: ~52
- 4. State test preparation: ~28
- 5. Remediation for struggling…: ~8
- 6. Data collection/analysis: ~22
- 7. Outside expertise: ~1
- 8. Performance rewards/sanctions: ~8
- 9. Non-academic efforts: ~12

*Source: Field notes, memos

In their study of decision-making in high schools under conditions of accountability pressure, Gross, Kirst, Holland and Luschei (2005) found that, when problems were ambiguous and search processes were rushed, schools were more likely to select "peripheral" solutions. As they defined it, peripheral solutions were improvement efforts that were not very close to the instructional core of learning, (see also: Elmore, 1996). Test preparation, for example, would qualify as a peripheral solution because it does not constitute a fundamental shift in the way that teachers and students interact with the curriculum. In my sample, I found that

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schools were selecting many varied strategies for improvement, including

peripheral strategies like test preparation, as well as strategies more toward the

instructional core like the adoption of new curriculum materials and new

approaches to instruction.

In addition to the descriptive information about the strategies schools select

for improvement, I analyzed the data to provide insight on *how* schools made their

selections. I found it difficult to identify trends in the decision point phase, however,

because approaches were highly dependent upon the specific context of each

decision. This wide variation in approaches existed both among cases as well as

within cases. In any one district, respondents might report that in one instance they

took a vote to select a new program, and in another instance the principal or district

administrator selected the program unilaterally. The only trend that emerged was

one that follows common sense: decision-makers took more time to make a

selection if the options on the table were high-cost improvement efforts (e.g. new

curriculum materials or technology tools) than they did for smaller scale and lower-

cost options.

Summary

My descriptions above of the problem identification, search, and decision

point phases of the overarching decision-making process are like pieces in a

complicated puzzle. What is striking is that, in many ways, the schools in my sample

selected a similar set of strategies for improvement. Most notably, the majority of

schools in my sample used benchmark exams to identify problems, employed a middle-out approach to search, and select many varied improvement solutions in an attempt to improve student achievement scores on the state test. Given these similarities, it is perhaps surprising that these same schools' overall approach to decision-making was at times dramatically different from one another.

As the literature on the right-hand side of the Rationality-to-Chaos Spectrum suggests, the boundedness of the education environment plays an important role in shaping the nature of the decision-making process. In the next chapter, I put the puzzle pieces together, describing how schools make sense of their environments, how they turn the discrete phases of decision-making into a decision-making "process," and how constraints impact their approaches to improvement.

CHAPTER 5: PUTTING THE PIECES TOGETHER

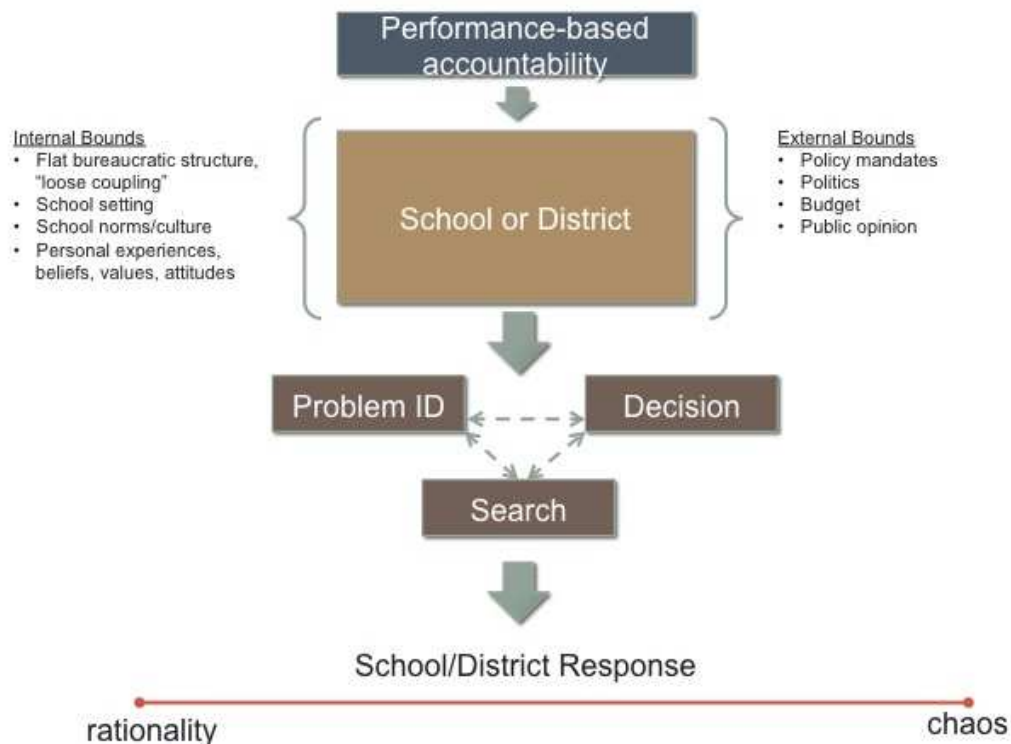**Defining the Decision-Making "Process"**

In the previous chapter, I described how schools approach the discrete stages of the decision-making process – problem identification, search, and the decision point. In this chapter, I analyze how schools and districts put those pieces together into an overall process around decision-making. At the outset, I define a decision-making "process" as a district's strategic approach to improvement that is echoed across multiple different decisions district-wide over a period of at least a year. In other words, one teacher's personal method for selecting materials for her classroom would not constitute a district's decision-making process unless her approach represented a common approach in the district as a whole. In this way, I base my categorizations of decision-making processes on self-reported practices corroborated by multiple actors across the district. Additionally, I base my characterizations of decision-making processes on a conglomeration of many decisions that occurred over the three years of interviews, because most schools had slight variations in their processes from decision to decision and from year to year.

To conduct my analyses in this chapter, I first return to the theoretical framework that I presented in Chapter One. In my Conceptual Map (see Figure 5.1), I depict the school/district as the primary agent in charge of making decisions for improvement under performance-based accountability measures, and this entity

operates under internal and external constraints, leading to decisions that fall at some point along the Rationality-to-Chaos Spectrum. As I explained in the opening chapter for this dissertation, the Spectrum is a tool that situates a broad range of decision-making literature from various disciplines on a spectrum that ranges from depictions of schools as rational decision-making organizations to depictions of schools as utterly chaotic decision-makers.

Figure 5.1

Conceptual Map

I define schools' placement on the Rationality-to-Chaos Spectrum along two literature-based dimensions. The first is linearity, which is the degree to which schools' decision-making processes follow the "rational" sequence of problem identification, search, and decision point (Simon, 1955). A school that follows the decision-making steps in that order has been judged in previous empirical research to be more chaotic than one that completes the steps out of order (Farley-Ripple, 2008). The second factor in determining schools' placement along the Spectrum is an assessment of the degree to which a school has a "systemic process" around decision-making. I define a "systemic process" as one in which decision-makers were able to articulate a cohesive, consistent approach to school improvement in the school or district, for example by identifying common approaches for the discrete steps in the decision-making process, alignment of decision-making strategies to the stated school goals or mission statement, and thoughtful consideration of sources of information (both internal and external, human and technical). For example, a school in which decision-makers identified many disjointed approaches to decision-making that were poorly aligned to the school's stated mission would be to the right of center on the Spectrum.

I used evidence from the individual case studies to analyze the schools in my sample on each of the two criteria – linearity and "systemic process" – making sure to weight these two criteria equally. Then, I created case-ordered descriptive matrices to look at trends across districts, paying particular attention to the order in

which districts approached the decision-making phases, as well as alignment between school goals and reported decision-making approaches.

This exercise yielded two main findings about school and district decision-making processes. First, schools and districts approached the decision-making process in a mostly linear fashion, beginning with the problem identification phase, followed by a search for solutions, and then a selection from among available options. Second, six of the eight schools in my sample met the standard of having a "systemic process" around decision-making in place. These two findings combined suggest that schools and district may not be nearly as chaotic as the literature on educational decision-making suggests (e.g. Farley-Ripple, 2008; Gross, Kirst, Holland and Luschei, 2005; Cohen, March & Olsen, 1972). With that said, my third finding is that the decision-making environment in schools and districts is bound by a great number of contextual and environmental constraints. These constraints can compromise the quality of each phase of the decision-making process, but seem to have an especially detrimental effect on the search phase. Below, I describe each finding in detail, as well as the method of analysis that I used to come to these findings, and then I provide an analysis of the overall effect on decision-making processes for schools.

Linearity in Decision-Making

The garbage can model of decision-making characterizes decision-making in education as a chaotic endeavor in which solutions often "seek" problems and

search is omitted all together (Cohen et al., 1972). In her empirical study of decision-making in one large district, Farley-Ripple (2008) found that a school district distorted the decision-making process on several occasions, for example by putting decisions before problems. And in their empirical study of high schools in the context of high-stakes accountability, Gross et al. (2005) characterized the decision-making process as chaotic. They write, "...the dependence on ad hoc, individual, and uncoordinated decision situations suggests that schools in large part have not generated a truly organizational response to their state accountability systems" (p. 50).

Evidence from this study, however, runs in contrast to the studies above. I found that six of the eight schools in my sample made decisions in a linear or fairly linear manner. HS 4 was the most chaotic district in the sample and acted in a chaotic manner not unlike the scenario that Gross et al. (2005) describe above, in which there was no common pattern of decision-making behavior, linear or otherwise. But school and district leaders in the remaining six schools were able to articulate how they made decisions by following a linear procedure. First, they described how they identified problems within their schools, as well as the obstacles they faced in doing so. In some cases, these problems were obvious – for example, students were complacent about the state test or the curriculum was outdated – but in other cases schools used elaborate data collection methods to identify issues. In all cases, however, everyone from the teachers on up to the superintendent was well aware that the school had barriers to effective school improvement efforts. Second,

although search efforts were often truncated, rarely did school leaders omit this step entirely. A truncated search might have involved a quick online search for potential solutions, a phone call to a trusted colleague or friend polling them on the products they had used in the past, or it might have involved asking a number of vendors to come in and explain their products. The majority of schools conducted searches that were incomplete, which is to say that they did not carefully consider a broad range of options, nor did they spend time comparing and contrasting their available options. These searches, though incomplete, did occur in a linear fashion in that they were an intermediate step between problem identification and the decision point. Finally, schools and districts made a decision that they believed best met the needs of the school and its students, taking into account factors like alignment to accountability policies, cost, and other considerations.

Although I do not have the ability to determine whether schools selected the "best" decisions from the available alternatives, achievement data from the schools over the three-year period of the study show that, of the six schools that initially failed to make AYP following the 2007-2008 school year, all but one school (HS 2) was able to get out of its "warning" status over the course of the study. This suggests that at least some of the decisions that schools made for improvement were the right ones.

"Systemic Process" around Decision-Making

Rational decision-making isn't just about the degree to which decision-makers approach problems in a linear manner, however; it is also about the degree to which decision-makers had a "true process" around decision-making. Again, I define a "systemic process" as one in which decision-makers approach problems thoughtfully and align their process to their stated school goals and mission. I gleaned the majority of this information from the Year 2 interview protocol, which contained specific questions about schools' mission and goals for improvement (see Appendix B). In response to these questions, some respondents parroted the school's official written mission statement, while others spoke freely about their instructional philosophies and goals for their students. I found that the schools in my sample were, for the most part, able to articulate a cohesive decision-making philosophy. Of the eight schools in the sample, six schools met the standard of having a "systemic process," meaning that they articulated a school or district-wide approach to identifying problems, finding potential programs, and/or making decisions for improvement. The content of their philosophies and missions was less important than the simple fact that they had one, especially if this philosophy extended to others throughout the school and pervaded the school or district's decision-making strategy.

In ELEM 2, for example, respondents uniformly expressed their commitment to using district frameworks to search for new programs and then pilot them in the classroom before full implementation of new strategies. In ELEM 4, school leaders

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talked about the importance of involving teachers across subject areas and grade

levels during the decision-making process. In HS 1, district administrators and

school leaders talked about the increasing dependence on formative assessments to

guide their decision-making process. By contrast, respondents in ELEM 3 each

seemed to have different personal goals for their students, which in part explained

why teachers pursued individual, disjointed strategies without forming a

collaborative approach to improvement. And in HS 4, district administrators said

outright that the enormous amount of staff turnover had left the district without a

cohesive process for making decisions, as each new staff member came in with his

or her own vision for improvement, and at times those visions were in direct

conflict with one another.

Interestingly, the two schools that did not possess a "systemic process" were

the same schools that did not approach decisions in a linear manner, as explained in

the previous section. Although more research with a larger sample is necessary to

determine the degree to which linearity and "systemic process" are correlated, my

research suggests a strong positive relationship.

In Figure 5.2, I depict the rough placement of each school along the

Rationality-to-Chaos Spectrum that I first outlined in Chapter One, using both

linearity and "true process" indicators with equal weighting. The figure depicts six

schools (ELEM 1, ELEM 2, ELEM 4, HS 1, HS 2, and HS 3) as operating in

environments that are bounded, but not so bounded that their decisions become

chaotic or nonsensical. The remaining schools are further toward the "chaos" end of

the spectrum. ELEM 3 is farther to the "chaos" end because this district lacked a

cohesive approach to decision-making, which presented itself in a haphazard top-

down decision-making approach on some issues, although most of the time the

district left teachers to come up with their own strategies for improvement, which

were rarely scaled to the school or district level. Furthermore, ELEM 3 frequently

omitted the search component of the decision-making process and made decisions

without careful consideration of relevant problems. HS 4, meanwhile, is farther

along to the right of the spectrum because the levels of social capital in this district

were dismally low and the school was in the midst of a major administrative

upheaval. As a result, there was no cohesive decision-making process in place

during the three years of my visits, and decisions preceded problems and searches

in many instances.

Figure 5.2

School Placement on Rationality-to-Chaos Spectrum
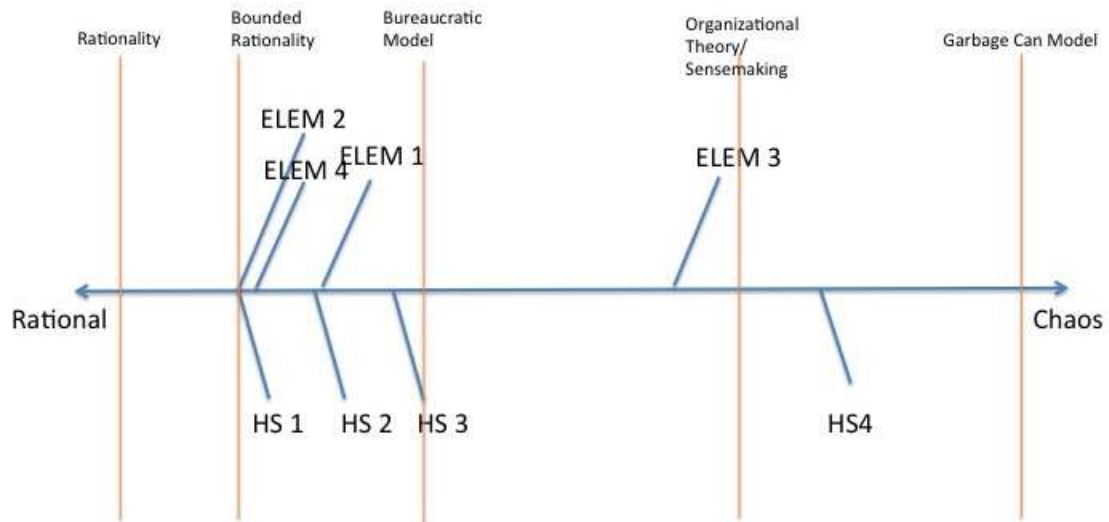
Despite the evidence from these two schools, the overarching story from the sample is that the schools were not nearly as chaotic as the literature might suggest. Although the schools were not purely rational organizations, they generally approached problems in a linear manner and utilized all steps of the decision-making process. They also included a variety of actors and approached decisions in a middle-out fashion, meaning that the locus of decision-making generally originated at the school level with the principal or other school administrators and/or specialists and then radiated outward to include teachers in the classroom as well as administrators in the district offices. The most vulnerable phase in the decision-making process was search– this was the phase that decision-makers were most likely to truncate, postpone, or skip when facing pressure from performance-based accountability systems to improve. Additionally, most schools had a "systemic process" around decision-making on the whole. Even with a linear approach and a cohesive philosophy around search, however, schools and districts still operate under conditions of uncertainty and boundedness in their decision-making environments (see Figure 5.2). To understand the forces that caused schools to deviate from the more rational approach to decision-making requires a more in-depth examination of the various factors that bound decision-making in schools, especially since some schools in my sample operated in environments that were dramatically constrained by politics, internal school culture, and other factors.

Constraints on Decision-Making

A key assumption inherent in accountability theory is that all schools, regardless of their contexts and environments, have the necessary tools at their fingertips to enact changes to improve student achievement. Evidence suggests however, that context matters more than policymakers would like to think. Politics, financial constraints, personal beliefs, human capital, and social dynamics can all constrain the decision-making process in real and meaningful ways, which in turn can lead to drastically different approaches to school improvement. To ignore school and district context is to severely undermine the pressure put upon schools to meet the rigorous standards that accountability systems set. By the same token, however, simply asserting that "context matters" is an equally egregious oversimplification of the reality of schooling.

The literature identifies numerous forces, both internal and external to the school district, which can constrain the decision-making environment (Coburn & Talbert, 2006; Gross et al., 2005; Spillane, Reiser & Reimer, 2002; Abelman & Elmore, 1999; Hannaway & Kimball, 1998). Internal constraints generally arise from the intricate ways in which students, staff, and administrators interact and set goals for achievement. They include human capital constraints, school norms and culture, personal experiences and beliefs about student achievement, district size, and time. External bounds, on the other hand, are those pressures that outside sources place on schools. They include policy mandates, politics, budget, and community pressures. The boundary between internal and external bounds is not

always clearly delineated, but does provide a useful guideline to distinguish between the various types of constraints that might affect educational decision-makers. The literature also identifies specific constraints on search, including familiarity (Coburn, 2007; Honig, 2003; Rosenkopf & Almeida, 2003), search misalignment (Gross et al., 2005), and accessibility (Gilovich, 1991; Cohen & Levinthal, 1990).

Consistent with my analysis strategy in previous chapters, I used a case-ordered descriptive matrix to examine the various constraints on the decision-making process. In addition to the case-ordered descriptive matrices, I conducted a selective document analysis of the Pennsylvania accountability framework document called "Getting Results" that each school was required to fill out if they failed to meet the accountability standards set forth by the state. (I asked schools to provide me with their Getting Results documents and three of the eight schools in my sample allowed me access to these documents.) I found that respondents identified many different factors that constrained decision-making in their schools. The most severe constraints on search were policy mandates from performance-based accountability systems, tight budgets, pressure from the community and the school board, time constraints, staff turnover, a negative school culture, and outdated technology. Generally speaking, the first three constraints in this list fall into the category of "external" constraints and the next four constraints fall into the "internal" category, which signals a relatively even split between the two. Below, I

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provide details on the constraints, including their impact on each individual phase

of the decision-making process.

Table 5.1

Decision-Making Constraints Area of Emphasis

External Constraints			
Constraint	Problem ID	Search	Decision Point
Policy Mandates	Narrowly defines problems in terms of performance on state tests	"Scientifically-based" requirement limits field of options Prioritizes alignment to standards/ assessments	Truncates timing and hurries decisions
Tight Budgets	N/A	Limits field of options Limits ability to gather information	Delays decisions Greater transparency
Community Pressure	Redefines problems through political lens	Limits field of options based on cost/politics	Delays decisions
Internal Constraints			
Constraint	Problem ID	Search	Decision Point
Time	Overlooks underlying problems	Limits exposure to new ideas	Leads to unilateral decisions
Staff Turnover	Muddles problem ID	Leads to inconsistent approaches to search	Delays decisions
School Culture	Excludes critical viewpoints Muddles problem ID	Limits searches by familiarity Leads to fractured approaches	Exclusionary Creates disagreement over common improvement goals
Outdated Technology	Makes data less accessible	Limits technical searches	Leads to avoidance of technology-based strategies

Before I detail the specific constraints on the schools and districts in my

sample, however, it is important to state at the outset that not all constraints are

inherently negative forces on decision-making. After all, schools are public entities

that serve a vulnerable, underage population (Ingersoll, 2003; Lortie, 1975) and some bounds on decision-making behavior are designed to protect the academic and social wellbeing of students. School boards, for example, were created with the specific intention of keeping district administrators' decision-making ability in check. Although they do not necessarily operate in the best interest of the school district at all times, they could play a positive role if they were to force schools and districts to choose new programs and strategies in a careful and deliberate manner. To be sure, constraints can negatively impact decision-making as well. For example, a distrustful working environment is likely to hamper efforts to come to decisions in a collaborative manner, which can narrow the field of options, make consensus building difficult, and impede implementation. And sometimes the line between the positive or negative impact of a constraint is blurry. For example, administrative turnover might disrupt the decision-making process and cause a lack of continuity, but it might also bring with it the opportunity for fresh ideas and renewed commitment to improving academic achievement. In the analyses below, I mention both the positive and negative effects of decision-making constraints, and I also point out instances where the effect might be ambiguous or context-specific.

Policy Mandates. Performance-based accountability measures affected all stages of the decision-making process. This is perhaps due to the nature of the sample, as six of the eight schools in my sample were labeled as "in need of improvement" after the 2007-2008 school year, which meant that these schools felt the pressure to

improve their students' scores on the state standardized tests. In term of problem

identification, my case study schools reported that they had received a report from

the state prior to Year 1 of the study indicating their school's accountability status

for the following year, disaggregated by student subgroup. For the vast majority of

schools, these results did not come a surprise – teachers across all cases said that

they knew which students were in danger of missing the "proficiency" mark on the

state tests. Still, the schools were well aware that the state had publicly announced

the "problems" in the school, and that it was now their responsibility to address

these problems, however narrowly defined they might be.

In Pennsylvania the state requires that schools in "warning" status also fill

out a document called "Getting Results" that details their perceptions of school-wide

problems and their strategies for improvement. Specifically, school leaders must

identify a "school improvement team," review and analyze state test data, identify

the root causes of performance deficiencies, and detail their plans for improvement.

Although the state does not dictate which strategies schools must choose to improve

their scores, the Getting Results document serves as a problem identification

framework for schools. Whenever possible, I analyzed schools' Getting Results

frameworks to see how they described the problems in their schools. In the three

schools that allowed me access to their documents (ELEM 1, ELEM 2, and HS 3), I

found that the frameworks forced schools to be honest about their shortcomings

and look closely at the data from the state assessments to determine which pockets

of students needed extra attention. In the three years of interviews, I also asked

how the document affected their approach to school improvement for the sample as a whole. Most schools asserted that the Getting Results framework did not fundamentally alter their approach to improvement, but that it did push them to look more closely at school-level data and examine the needs of student subgroups that might previously have been overlooked. A special education administrator in ELEM 2 explained how the framework highlighted the specific needs of special education students:

> "With the change in curriculum materials…they really look at the special ed component and how will this affect our special ed students. And I don't know. Before the curriculum changed it was like 'oh gee this looks good, let's try it.' And I don't know that anyone ever thought about the special ed population, and now it's definitely considered." (District Administrator, ELEM 2)

In this way, the effect of accountability measures on problem identification might be both positive and negative. On the positive side, the comments of the administrator above highlight how accountability policies and frameworks can push schools to concentrate on previously overlooked students. On the negative side, however, defining problems through the lens of students' scores on state standardized tests might cause schools to ignore other pressing issues that cannot be expressed through student test scores, for example school culture, critical thinking skills, or graduation rates.

Policy mandates also affected the search phase of the decision-making process. The No Left Behind Act law mandates that all programs and strategies in schools be based on "scientifically-based research" (NCLB, 2001). Although many

have critiqued the scientifically-based research requirement as vague and poorly defined (e.g. Eisenhart & Towne, 2003), the provision does, at least hypothetically, limit the programs that schools can select to those that have been tested and found to have positive effects on school performance. The schools in the sample mentioned that they felt constrained to look for programs that fell into this "scientifically-based" category, although perhaps not as much as one would have expected. This may be due to the fact that the provision had been in place for a sufficient period of time that vendors were able to conduct research – or at least claim that they conducted research – that helped their products appear to meet the minimum standards.

Districts also reported that they received enormous pressure to align their curriculum to the state academic standards. Pennsylvania helps districts align their curriculum by publishing the standards, providing webinars and trainings on alignment, providing a list of tested content or "anchors," and offering technical assistance from regional providers or "Intermediate Units." Schools in this study reported that pressure from the state caused them to seek out vendors that could claim their products were well aligned. Said one district administrator:

> "I think at the time that we began to create the Study Lab and the resources, there were limited resources available. There were companies that were just coming about with the notion that we were looking for something that would be aligned with the Pennsylvania Academic Standards. In fact, at the time that we selected Princeton Review, even they were not aligned at that point. But they were indicating that they were going to be aligned within the next year or two and in fact they were. And they were a company that we felt very comfortable with." (Administrator, HS1)

By the third year of the study, interviewees were also mentioning a new type of alignment, namely that of alignment to the Common Core Standards, which is a set of college and career readiness standards that nearly all states have agreed to support (NGA & CCSSO, 2010). Study participants reported that "Common Core" became a buzzword as they searched for new programs, and any vendor touting a new program would proudly proclaim alignment as a major selling point for their materials.

The pressure generated from the "scientifically-based" requirement and the standards-alignment movement also operated in a subtler manner. Some programs have gained popularity within performance-based accountability systems because they have been found to be effective at raising student achievement due to their inclusion in the U.S. Department of Education's What Works Clearinghouse. When schools or districts were searching for new programs, they reported that they felt pressured to choose these rigorously tested programs over other programs that might align more closely with their specific needs. For example, respondents in one high school (HS 4) reported that they were unhappy with their existing curriculum but felt unable to change it because those programs were so highly regarded by proponents of performance-based accountability systems.

Finally, accountability measures truncated the time allotted for the decision point phase of the process. Because the testing period in Pennsylvania is in the early spring, most schools must put in place any new improvement programs in the

fall if they realistically hope to see any meaningful results. Since schools don't typically receive their scores back until early summer, the time they have to make decisions is limited to the summertime.   One teacher at a struggling elementary school (ELEM 3) mentioned that her school wanted to align their test preparation program to the state standards but that those efforts were frustrated when the truncated decision-making period for decisions caused them to rush the process, which ultimately cut teachers out of the decision point phase of the process and led to an unpopular curriculum choice. Another district (ELEM 2) was faced with the same problem and solved it by paying its teachers overtime during the summer months to work on aligning the curriculum to the standards and plan professional development activities before the start of the school year.

Tight budgets. I began my school interviews in the spring of 2009, soon after the beginning of a nationwide recession. By the end of third round of interviews in the summer of 2011, all eight districts in the study reported that they had been affected by the recession, although some districts felt the budget crunch more acutely than others. One administrator in a well-off district (ELEM 4) put the issue of budget woes into perspective, saying that the recession forced them to slash their curriculum budget by about eight hundred thousand dollars in a single year, which was about half their total budget. And the principal of a suburban high school said, "Things have changed a little bit with the change in the economy. Although they still want to have the best intentions for our kids, the economy plays a role. You can't

keep going back to your taxpayers and raising taxes when people are losing jobs and

salaries have been frozen in a lot of different areas and so forth" (Principal, HS 3).

School and district leaders did not identify specific ways in which tight

budgets affected their efforts at problem identification, but they explained in great

detail how they limited their search processes by narrowing the field of options to

less expensive programs and strategies. In some cases, this meant that decision-

makers would not even consider programs that cost too much or required

additional full-time employees to administer. Several administrators in one high

school (HS 4) reported that they had recently purchased curriculum materials for

Advanced Placement courses but were weighing sending the books back to the

publisher because they could not justify the ongoing cost of the technology licenses

that came along with the books. In other cases, schools would only partially

implement programs, for example by purchasing a few licenses and piloting them in

one classroom while they lobbied the school board for funding to extend licenses to

a broader student population.

Tight budgets also limited decision-makers' ability to gather information

about potential new programs and strategies. Personnel in a majority of the schools

in the sample mentioned that budget woes caused them to curtail or even eliminate

sources of information for their searches, including travel budgets, subscriptions to

journals, and memberships to professional associations. Several schools said that

they also had to cut staff positions, which meant that there were fewer people to

conduct searches and everyone's time was more crunched. In one elementary

school (ELEM 4), the district cut several reading and math specialist positions, which forced classroom teachers to conduct their own searches for new strategies during their rare free periods. When it came to travel budgets, several school administrators mentioned that one of the first things to get cut was travel to conferences, which meant that they had less freedom to explore new and innovative solutions for their schools. One high school principal who was young, energetic, and eager to search for new programs for his school explained that he had stopped going to conferences himself, "Because I feel bad, for one thing, going to a lot of conferences. Especially since I've told my teaching staff that they're not allowed because of the budget. The superintendent saying you need to cut- we had to cut our conference and travel budget by, oh, it was like eighty percent. So I didn't have much" (Principal, HS 3). In this way, the findings show that tight budgets limited technical searches (i.e. searches that lean on third-party information, such as research, professional development materials, journal articles, and professional organization pieces), and therefore caused decision-makers to lean more heavily on human resources (i.e. word-of-mouth recommendations, examples from neighboring districts) during their search processes.

Although interviewees viewed budget woes as a negative constraint on search, the impact on the decision point was both negative and positive. On the negative side, insufficient funds could postpone or indefinitely delay decisions. When asked what sort of new programs her school had adopted that year, a teacher responded matter-of-factly, saying, "Yeah, we haven't gotten anything new. I don't

think anything new is being bought because we don't have any money, so that's pretty much what we have" (Administrator, HS 2). In its "Getting Results" document, however, this high school had listed numerous ways in which it planned to improve student scores on the state tests, including purchasing new materials. This high school teacher was not alone in believing that the budget had delayed important decisions for improvement. One elementary school principal (ELEM 3) said that he desperately wanted to buy new computer-based remediation materials for his students, but financial problems in the district had forced him to spend the money in the district's general fund to cover the basic salaries of teachers. And a district administrator (HS 4) in charge of curriculum and instructional programming described how the budget cuts had caused her to completely revisit how she purchases new materials. Buying programs ad hoc, she said, "eats up my entire budget. So it's going to have to become more cyclical. I didn't really want to do that. I really wanted everybody to bring everything they needed this year, and we'd try to work out with them- hey, if I get you this half, can you wait for this half? That's gonna hugely differ, so that will be a fall-out from the Governor's budget" (Administrator, HS 4).

On the positive side, however, interviewees acknowledged that budgetary constraints often forced their schools and districts to make decisions in a more transparent, collaborative, and deliberate manner. Said one high school principal:

> "Realistically in the last couple of years you have to be really careful about
> every dollar that you spend. I think we've gotten better at some of our

decision-making because of that. We've gotten more thorough. Because God forbid we make a mistake and spend a couple hundred thousand dollars and find out that we just wasted all that money." (Principal, HS 1)

Although the data does not support a determination as to the extent to which one decision was "better" than another, almost all of the subjects in this study believed that a slower, more deliberate process was better than a hasty process. And some teachers who were very vocal about their disdain for budget constraints in general reluctantly expressed their gratitude when the budget caused the process to become more collaborative, because it meant that administrators were more likely to seek their opinions on new programs and strategies. Interview respondents also reported that the community – particularly school board members – liked the decision-making process to be slow, methodical, and collaborative because they felt they had greater control over how their dollars were spent.

Community pressure. My findings suggest that the community – that is, taxpayers, parents, and the school board – all played an important political role and affected all stages of the decision-making process. Forces in the community often attempted to interpret schools' accountability status based on their personal politics and preconceived notions of how the schools in their community should operate.

School boards were perhaps the most instructive example of how the community injected politics into the problem identification phase of the decision-making process. The school board was so divisive and politically polarized in two schools in my sample that it made the purchase of any new materials an uphill

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battle. The school boards in these districts reflected the larger national political

polarization, with half of the board opposing any new spending in public education,

and the other half supporting robustly funded education reform. Ironically, these

schools were the only ones in my sample that were not on the state's watch list for

improvement, which suggests that school board politics represent a pressure for

schools that is wholly separate from accountability pressure. Four schools in the

sample had school boards that were powerful, but had a collaborative and friendly

relationship with the schools. The remaining two schools in my sample reported

that the school board rubber-stamped all their requests.

School boards constrained the problem identification phase by bringing their

own biases, experience, and opinions to the table. In many cases, school boards

contributed their own interpretations of the problem to the decision-making

process, and these identified issues were sometimes in conflict with the problems

identified by performance-based accountability systems. This was the case with HS

2, where the school board interpreted the high school's "warning status" as a sign

that students were less engaged and showed less school pride, even though the

superintendent was adamant that the problem was academic in nature.   School

boards exerted their control over the search process primarily by controlling the

purse strings in the district. Politically polarized communities, such as the

community for ELEM 4, found it difficult to approve new capital purchases because

the school board was wary of using taxpayer money on large educational

investments. School and district leaders reported that they tried to anticipate the

school board's stinginess by avoiding consideration of programs that might draw undue attention from the board.

Aside from school boards, vendors also constrained search processes in my sample schools and districts. Although some schools reported that their decisions were completely unaffected by vendors pushing their products, other schools admitted that they did not conduct a thorough search because vendors actively sought them out. Small, understaffed districts like ELEM 3 seemed to be the most susceptible to vendor pitches

Political pressures in the community also affected the decision point phase of the decision-making process. School boards, for example, could delay or even derail the decision process if they disagreed on funding allocations for new programs and strategies. Note the differences below in the way that these two administrators in different districts talk about how they work with the school board to select new programs. The first district had a friendly relationship with a school board and worked collaboratively with the board to select new programs and strategies. The second operated in a highly political environment with a very contentious school board.

> District A: "We meet with the board once a year in a workshop that lasts probably most of the day. And we go over what we consider to be our goals, and then we take input from the board members about things that they feel are important. So the administrative team, which consists of the central office and the principals, will sit and have that discussion about what our goals should be with the board. When we're done with that, we take two days at the end of June to assess how we did last year on what our goals were and then take those same goals and say well how far do we expect to get next year. And then we use the input from the board to say whether this is the

direction that the community and the board feels that we're going." (District Administrator, ELEM 2)

District B: "They're very unrealistic. It's a split board. They either love you or they hate you, depending upon the week. They are doing it for political reasons and don't understand….that it's really about the kids. We're in a contract year. Some of the board members, they want to see blood. They're missing it. They're missing the big picture of what their purpose is." (District Administrator, ELEM 4)

In the first district, the educators guided the decision point phase and involved the board as community collaborators, using them to refine their district's goals at key points along the way. In this case, the school board was a positive force because it helped the district to clearly articulate its goals to the community. In the second district, however, the adversarial relationship with the school board caused district decision-makers to cede control over the decision point when their ideas for improvement became mired in school board politics.

It is important to discuss the various forces within the community that did *not* affect decision-making to a great degree. First, I found that teachers unions did not seem to constrain any of the decision-making phases in a major way. With the exception of two districts that underwent contentious contract negotiations at some point during the three-year study, interview respondents said that unions did not exert undue pressure on their decision-making processes. This may be because the districts had good working relationships with their teacher unions, or it may be that administrators were so used to operating within the bounds of the contract that they did not even view it as constraint. For example, interviewees nearly

universally mentioned that they wished they had more time to conduct professional development around new programs and strategies. While they did not mention teacher contracts as a limiting factor, it is certainly the case that contracts placed limits on the hours in the school day, which in turn made it difficult to schedule these activities.

Second, I did not find that parents and community groups greatly constrained any of the decision-making phases. Some school-level personnel mentioned that their community newspaper had printed the results of their schools' scores on the state standardized test, which increased their anxiety about the tests in general. However, only in a few isolated cases did respondents mention that parents constrained their search or decision-making process.

Finally, I did not find that vendors or district personnel exerted undue influence during decision-making, for example by arranging under-the-table deals for exclusive contracts with certain vendors or forgoing a collaborative process to make way for products advocated by family members or friends.   Although it is possible that interviewees censored their comments during the interviews – after all, the data is entirely based on self-report – interviewees generally felt comfortable being candid during the interviews because they did speak about several other sensitive topics. This is not to say that impropriety did not indeed occur in these eight districts, but there is not evidence in this study to support that it was a pervasive constraint on decision-making.

Time constraints. Talk to any teacher, principal, or district administrator and the one thing they can almost certainly agree upon is that there are never enough hours in the day. Teachers wish that they had more time to search for the right materials to fit their class' needs, collaborate with their peers, and participate in professional development. Specialists wish that they could meet with teachers, observe more classrooms, and find the right programs and strategies for pockets of struggling students. Principals wish that they did not get mired down in issues of building maintenance so that they could dedicate more time to instructional improvement. And district administrators wish they could spend more time researching the right programs for their schools.

These time constraints are, in many cases, symptoms of a larger problem. When budgets are tight, staff are usually spread thin, which makes it difficult for people to fully examine the barriers to improvement in their schools or conduct thorough searches for new improvement programs and strategies. Accordingly, the pressure to look for shortcuts during the problem identification and search phases of the decision-making process is strong (Feldman & Tung, 2001). In terms of the problem identification phase, harried decision-makers in my sample did not have sufficient time to delve into the data and investigate underlying causes for underperformance. Teachers in many schools admitted that they had taken only a cursory look at student achievement data and did not talk to students' previous teachers before the start of the school year. Instead, they relied on administrators to tell them where to concentrate their efforts, assuming that the administrators

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themselves had conducted a thorough needs assessment, which was not always the

case. When asked whether his school would be using new sources of data to help

identify areas for improvement, one assistant principal at a struggling elementary

school (ELEM 3) said: "It would be nice to have the information, but we're not

utilizing all the data we have today to its fullest. Why bring in any more if it's not to

be used as it possibly could be?" (Building Administrator, ELEM 3).

Tight schedules also prompted decision-makers to cut their search processes

short. Decision-makers reported that they were more likely to take only a cursory

look at research-based materials and other technical sources of information such as

journals, clearinghouses, and articles from professional associations. They were

also less likely to take the time to visit conferences and other outside learning

opportunities. Similarly, decision-makers pressed for time were more likely to

make only courtesy inquiries to friends and colleagues about the programs they

were using in their schools, forgoing any process to find out if the programs were a

good fit for their student populations and identified needs. Even administrators in

districts with well-developed decision-making frameworks reported that time

constraints affected their search processes. When asked how she would spend her

time if gifted some additional hours in the day, one district administrator in ELEM 4

responded, "Certainly more time to read. Certainly more time to network. I don't

like sitting here. I wish I had more time to do that, to answer the emails, to really

write a really good response to something that [my colleague] is putting together for

Keystones, but I'll throw that together. It'll be okay" (District Administrator, ELEM 4).

Limited time frames also had a severe effect on the decision point phase of the larger decision-making process. These schools and districts often rammed their decisions through with very little input from their peers. In extreme cases, decision-makers acted unilaterally and without much evidence to back up their decisions. In these instances, interviewees mentioned that teacher buy-in to the decisions was very low, and that fidelity of implementation suffered as a result. One salient example came from HS 3, which selected a problem-based learning curriculum program for math without much input from teachers. When asked why they had selected the program in the first place, administrators said that they knew they needed a new math program because their materials were outdated, but didn't have much time to find a new one. They knew they were looking for "alignment" – although they had trouble defining exactly what they were looking to align the curriculum to – so they simply followed the path of a neighboring district that had selected a problem-based learning approach for its high school. They made the decision to switch to the new materials over the summer and implemented them in the fall, when the high school principal was out on leave. The teachers, as it turned out, hated the new approach and the accompanying materials. By Year 2, the principal (who had returned from leave) was already looking to give teachers more flexibility in their instructional approach.

Although there is insufficient information to determine the degree to which

time constraints made decisions substantively worse than decisions that were made

carefully and deliberately with a longer time frame, the qualitative evidence

suggests that a thorough search and a structured decision-making process takes

time – and that well-funded, robustly staff districts are more likely to have that time

to spend. Said one district administrator in a high-performing, well-funded district:

> "We have a committee that we put together that includes district
> administrators, school administrators, teachers, parents, and community
> members. Well, that takes time, and it should take time. You want it to take
> time, and you put all the resources out there, and that's typically three-to-
> four meetings – an hour to an hour and a half each" (District Administrator,
> ELEM 4).

This was a common opinion voiced by those schools that had robust decision-

making processes in place, namely that search takes time and should not be rushed.

Staff Turnover. Another major decision-making constraint was staff turnover.

Staff turnover affected all stages of the decision-making process. In terms of the

problem identification phase, new personnel often come in the door with different

philosophies and ways to conceptualize the problems that a school faces. One high

school (HS 2) reported that it had gone through three principals in as many years,

which made it nearly impossible to get anything done because each principal had a

different understanding of the gaps in achievement in the student body. An

administrator in a different district (HS 4) said that the worst part about

administrative turnover was that employees' differing goals and strategies for

improvement meant that the decision-making process started from scratch every time. Said one administrator, "[Our superintendent] left and with that came nine different approaches on what it is we are all about" (Administrator, HS 4).

Administrative turnover impacted the search phase as well. Administrators were usually the people who established procedures and processes around search – for example by creating curriculum review cycles or setting guidelines for collaborative decision-making – and when they left, their search methods often left with them. In one district (ELEM 2), the turnover of administrative staff left the district without a cohesive process around search. Even though the incoming assistant superintendent had intended to create a real process around search, he found that there was simply too much to do and too little time to do it. As he described it, "Unfortunately we were literally in the 'building the airplane as we were flying it' mode. And in fact I often remarked that we not only building it, we were reconstructing it, redesigning it, and then putting it back together while we were in flight" (Administrator, ELEM 2). This administrator reported that he had to create all new procedures around search, and a colleague of his said that she was forced to borrow a curriculum review guideline from her previous employer (a neighboring district) because there simply wasn't enough time to create her own.

Staff turnover affected the decision point phase of the decision-making process as well, especially when incoming administrators had differing leadership styles. A teacher in HS 4 spoke about how her school coped when the superintendent and the high school principal left in the same year:

"And that was half of our team gone, new people in. Some of those new people were never in an administrative job or did so very, very early on in their careers. So we were left mentoring each other. And that works sometimes, and sometimes it can really be biting, and what I what happened is, it's kind of a loss of trust and credibility among the team, and it's borne out of frustration with that whole mentoring each other kind of piece, and trying your luck at different types of leadership styles" (Teacher, HS 4).

New leadership styles, new improvement goals, and new personalities can all push off decisions or even prevent them from occurring. Just as the high school above (HS 4) became accustomed to its new principal's leadership style, the superintendent, who was only in the first year of his new job, announced that he would be leaving, which led the school to push off its selection of a new test preparation program for the high school.

District Culture. Staff turnover also highlighted the importance of school and district culture during the search and decision-making process. Findings from my sample showed that a school culture characterized by distrust or competition limited the degree to which school leaders made decisions in a thoughtful, collaborative, and goal-oriented manner. I found two factors that led to a negative school or district culture and constrained decision-making: a lack of trust between teachers and administrators; and a poorly articulated or conflicting philosophy around improvement. Both of these cultural constraints affected all phases of the decision-making process.

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The most frequently cited culture problem was a lack of trust between

teachers and administrators. Of the eight schools in the sample, only three

consistently reported that they had a positive, collaborative decision-making

environment. The other five schools reported a great degree of mistrust between

the different levels of hierarchy in the district. The principal of a struggling

elementary school (ELEM 3), for example, said that he had tried to involve the

teachers in the decision-making process regarding the selection of new curriculum

materials but now excluded them because collaboration was too difficult to manage.

And a high school teacher in a district where contract negotiations had created a

strained relationship between teachers and administrators said:

> "As much as I believe the administration thinks it was all about the contract, there were many things that happened that made staff feel unimportant and not valued and as much as we know we give our heart and soul in classes and teach the kids and show them how much we love teaching as much as they love or not love learning. There were some of us that got the impression that we didn't do anything because we didn't have a contract. It made some very hard, negative feelings that I don't think are going to be quick to go away." (Teacher, HS 4)

This teacher's comments highlight the importance of creating a culture of trust and

collaboration, and point to the effects of distrust on all phases of the decision-

making process. In terms of problem identification, when teachers were excluded,

they did not speak up about the barriers to school improvement that they see. In

Year 1 of this study, teachers in HS 2 reported that they were not consulted after the

school received its "warning status" determination, even though they would have

liked to be a part of the decision-making team. In terms of search, when teachers

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felt as though their opinions were not valued, they were less likely to search for new

materials or explore instructional strategies that could be implemented on a large

scale, choosing instead to implement targeted strategies for their classrooms alone,

or forgo new programs or strategies all together. In several cases, this caused

teachers to become resistant to change over time, which in turn encouraged

administrators to limit the number of options on the table to ones that they think

that teachers will more readily accept. In practice, this meant that the options ere

not as innovative as they could be – they merely tweaked the existing system. ELEM

3 fit this description, as teachers reported they would search for strategies that fit

their classrooms or perhaps their grade levels, but never did they take any big ideas

to school or district level to bring their ideas to scale. Finally, in terms of the

decision point, teachers were more likely to take a backseat to school improvement

efforts, instead letting administrators lead the charge for improvement. Teachers in

HS 4, for example, had been systematically cut out of the decision point phase for so

many years that they reported they never asked to participate anymore.

Another constraint on decision-making was a set of poorly articulated or

conflicting goals for improvement. The Year 2 interview protocol (see Appendix B)

contained three specific questions about school personnel's perceptions of their

school's mission and goals.   In their responses, interviewees usually recited the

school's mission statement or articulated a broad set of school goals for

improvement. Interviewees in several schools, however, had trouble articulating

their school's mission or presented conflicting visions for the school or district. In

two low-performing elementary schools (ELEM 1 and ELEM 3), nearly everyone we interviewed said that the school didn't really have a guiding mission or set of goals for improvement. Their goals were more short-term, for example to get new staff to participate in professional development activities after school. In ELEM 3, respondents said that the school was looked down upon in the district and one teacher actually said that the school had no identity other than being the "red-headed stepchild" in the district. And although respondents in ELEM 2 reported that that their principal worked hard to instill a sense of ownership and entrepreneurship in all school staff, the principal himself expressed deep frustration that the district superintendent did not respect these leadership goals. The district was trying to make his school into a "Stepford school," he said, which belied conflicting goals around decision-making in the district.

The problem of conflicting philosophies affected all stages of the decision-making process. It confused the problem identification phase because it allowed people to identify different or even conflicting problems. It stymied search because it failed to provide the impetus for change, essentially leaving it up to individuals to set personal goals for themselves and their students. Finally, poorly articulated philosophies made it difficult for decision-makers to come together in a collaborative manner at the decision point because they had difficulty agreeing on a common set of goals for improvement.

Technology. Whether it was a data management tool for tracking student-level data, a curriculum supplement, or a computer-based remediation program, the schools in my sample were investing large amounts of money in new 21st Century learning tools. With these tools, however, came various stumbling blocks for schools. First, technology required that someone in the district as available to set up the technology and troubleshoot problems with connectivity, access, and other technical problems. Second, investments in innovative technology-based software only worked if the school or district had already made the necessary investments in hardware. A new computer-adaptive remediation program was useless if the school didn't have enough computers. Finally, teachers and administrators must be trained on how to use the technology hardware and software, which necessitated an investment in professional development.

At first glance, technology might seem like a constraint that only affects the implementation phase of the decision-making process. After all, teachers may lose instructional time and become frustrated when technology tools don't run smoothly in the classroom, but the tools themselves have already been selected. On the contrary, I found that technology problems plagued all phases of the decision-making process. In terms of the problem identification phase, outdated or poorly implemented technology meant that administrators and teachers did not have the appropriate data management tools to track student data, such as benchmark test scores, achievement levels in previous grades, and areas of opportunity. Said one high school teacher:

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"We have tons of data but it is not easily accessible, it is still a matter of going to three different things and look up three different scores and supposedly they have a program that we are going to get next year called Tetra Data, that is going to give you all the kids' numbers. We are still a little ways away from that but that will save us a lot of time and get people more interested in the data." (Teacher, HS 3)

As this teacher points out, without the proper tools, it may be difficult for school leaders to spot potential achievement gaps or design improvement plans for at-risk students.

In terms of search, many search processes themselves were technology based, for example when teachers used online lesson planning websites or when administrators conducted technical searches for new improvement strategies or programs. If technology did not run smoothly, decision-makers redirected their searches away from technical searches and toward human searches (i.e. word-of-mouth recommendations). In some cases, this meant that searches became constrained by familiarity and, if the decision-maker's network were local, geography. Another potential outcome was that searches became drawn out, delayed, or eliminated all together. Decision-makers in nearly half of the schools in the sample mentioned that they would have loved to use technology to help them manage data and target individual student needs, but they lacked the time or support to find appropriate programs. This problem affected teachers as they searched for strategies for their classroom, but it also impacted administrators and other school-level personnel who were unable to spend as much time as they would

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like finding the right ways to support their teachers. Said one high school teacher

leader:

> "I don't think I've made as many changes as I hoped to. I think when I went
> through the classes and I thought about a lot of the group efforts and
> business and contacting business and getting them involved in my classroom,
> I think I had good intentions. I wrote some proposals that made sense and I
> don't feel like I have really followed through, whether it's because of the time
> factor or whatever." (Teacher, HS 1)

This teacher's struggles demonstrate that searches for technology-based programs

and strategies were inherently more complicated than traditional searches for new

improvement strategies. Because technology required a capital investment in

hardware, decision-makers needed to search both for the programs themselves and

for grants to fund the purchase of the programs. This teacher leader was looking to

local businesses for support but had trouble finding the time to do that sort of

networking.

Finally, the decision point became complicated when teachers anticipated

difficulties implementing technology-based programs and strategies in their

classrooms. In particular, decision-makers became skittish if they thought that

technology problems would detract from successful implementation of new

programs. This was the case for three schools in my sample. In the most striking

example, a high school (HS 1) delayed the rollout of its new math curriculum by a

whole year, deciding instead to invest in teacher training around new technology

tools. The principal's reasoning was that the school could only unveil one major

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initiative at a time, and that an investment in technology tools would have to push other decisions to the side.

Spotlight on Search

The cross-cutting effects of decision-making constraints presented above highlight the fact that schools feel enormous amounts of internal and external pressure to change their decision-making processes. In some cases, this pressure helps them to focus and refine their approach, and in some cases pressure has the opposite effect, essentially confounding and muddling the decision-making process. In Table 5.2, I show how each of the constraints identified by the schools in my sample affected every nearly stage of the decision-making process, including problem identification, search, and decision-making. Reading this table may leave one with the misleading impression, however, that each stage of the decision-making process was equally vulnerable to internal and external bounds, when in fact the search process was by far the most vulnerable phase of the three.

To determine the differential effects of decision-making constraints on each of the individual phases of decision-making, I went back to the detailed profiles that I had created for each school in my sample, which in turn were based on a careful read of the interview data pertaining to each school. In these profiles, I detailed the collective effect of constraints on problem identification, search, and the decision point. After reviewing each of the profiles, I defined the whether these constraints had a "minor" or a "major" influence on each of the decision-making phases. A

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minor influence was where, on the whole, constraints were specific to an isolated

incident and did not affect the school or district's larger approach to decision-

making, whereas a major influence was one that affected a broad set of stakeholders

and permanently changed the way the approach to decision-making.

Table 5.2 details the results of this analysis. For each school I list the major

constraints that respondents identified within their school or district, omitting only

the "policy mandates" category, since this was a precondition for all but two schools

in the sample. I then list whether the constraints had either a major or minor

influence on the individual decision-making stages.

Table 5.2

School-Level Analysis of Differential Constraint Impact

School	Major Constraints	Problem ID	Search	Decision Point
ELEM 1	Time, Technology, Human Capital	Major	Major	Minor
ELEM 2	Community, Time	Minor	Minor	Major
ELEM 3	Human Capital, Budget, Community, Time	Major	Major	Major
ELEM 4	Community, Budget, Time	Minor	Major	Minor
HS 1	Time, Technology	Minor	Major	Minor
HS 2	Human Capital, Budget, Community, Time	Major	Major	Minor
HS 3	Human Capital, Budget	Major	Major	Major
HS 4	Human Capital, Community, Budget	Major	Major	Major

In Table 5.2, I show that the bounds on the decision-making environment

were a major influence on the search phase for seven of the eight schools in the

sample. Contrast this with the problem identification phase (five of the eight) and

decision point phase (four of the eight), and search emerges as the phase that is most vulnerable to internal and external decision-making constraints.

This finding is not directly in contrast with the literature, as several authors (e.g. Farley-Ripple, 2008; Coburn, 2006; Gross et al., 2005; Honig, 2003) point out that searches can quickly become chaotic or even omitted when the decision-making environment becomes constrained. My research is the first, however, to specifically highlight the vulnerability of search as directly compared with the problem identification and decision point phases of the overarching decision-making process. Especially given the great number of resources dedicated to studying evidence use and data-driven decision-making, this work suggests that researchers pay more attention in the future to search.

Summary

Based on the descriptions above, I characterize schools as linear decision-makers that operate under moderate-to-severe constraints. Many of my findings in this chapter are in line with the literature. My findings confirm that schools acutely feel the pressure from performance-based accountability systems (e.g. Stecher et al., 2008; Hamilton, Berends & Stecher, 2005; Linn, 2005), and are affected by other external constraints as well, including community politics and budgetary limitations (Hess, 1999; Kingdon, 1995). They are also affected by internal constraints like school culture (Abelman & Elmore, 1999), leadership (Coburn & Talbert, 2006; Spillane, Reiser & Reimer, 2002; Hess, 1999); and time (Gross et al., 2005).

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My findings also depart from the literature on search and decision-making in several ways. Although the literature identifies access to information as a major search constraint (Gilovich, 1991; Cohen & Levinthal, 1990; Nelson et al., 1987), I found little evidence that school and district decision-makers lacked access to materials that would inform their decision-making processes. Even those schools and districts that reported they were under extreme pressure from accountability systems to improve student performance said that they had access to all the information they needed – it was simply a question of finding the time and money to make good use of that information. The literature also identifies district size as a constraint on the decision-making process (Hannaway & Kimball, 1998), as districts that are too large have overly rigid processes and districts that are too small lack capacity. Although none of the schools in the sample were from extremely large urban districts, I found that the larger districts in my sample did not overly structure their decision-making process. My research does confirm the findings on the other end of the scale, however, as I found that small districts lacked sufficient human capital to make decisions in a structured, thoughtful manner.

Finally, my research highlights the especially vulnerable nature of the search process in schools and districts. Although Table 5.1 displays how internal and external constraints generally press upon all phases of the decision-making process, the detailed findings reflect the fact that decision-makers often compromise, truncate, or eliminate the search phase before they compromise the problem identification or decision point phases. Additionally, as I detail in the previous

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section, I found that the compounding effects of decision-making constraints affected search more than the other two phases. Although the decision-making literature does highlight the vulnerable nature of the search process (see, for example Coburn, 2006; Honig, 2003), my work is the first to systematically analyze constraints that pertain to each of the decision-making phases, which highlights the differential affect that constraints have on search as opposed to problem identification and the decision point.

In the next chapter, I provide a set of decision-making typologies that describe the different decision-making approaches that I observed in my sample over the three-year study period. These typologies provide additional insight into why schools are differentially affected by the bounds inherent in their internal and external environments. More importantly, however, they form a framework for researchers to categorize the range of decision-making approaches, taking into account districts' unique context, including their culture, mission, and contextual constraints.

CHAPTER 6: A FRAMEWORK FOR DECISION-MAKING

The Need for a Framework

In Chapters Four and Five, I found that complexity, ambiguity, organizational structure, and internal philosophies all shaped the decision-making process in the schools and districts in my sample. Since context matters for decision-making, it stands that there should be a way to categorize schools' differential responses to environmental pressures, including that of performance-based accountability. In this chapter, I present a framework for understanding the types of approaches that schools have toward decision-making. Specifically, I identify four typologies of decision-making behavior.

A framework categorizing decision-making behavior is a valuable contribution because it links contextual factors to school and district approaches to decision-making. Although some authors offer frameworks to describe the decision-making environment in schools and districts, their work is narrower in scope than my own. Coburn and Talbert (2006), for example, look through the lens of performance-based accountability at the different ways that district leaders think about the validity of evidence use in schools, ultimately offering four categories of conceptions of evidence use. Their framework helps to shed light on how, even within just one district, people can have fundamentally different assumptions about the value, validity and purpose of evidence. But their work is limited to the problem identification phase of the decision-making process, and therefore touches on only a

narrow portion of my conceptual framework, which attempts to operationalize the decision-making process as a whole.

Another framework from the literature is Abelman and Elmore's (1999) work on internal accountability. This framework posits that three interrelated concepts shape a school's response to performance-based accountability systems: individual conceptions of responsibility; shared norms and expectations; and formal or informal conceptions to accountability, both internal and external. Again, this framework provides valuable guidance on a limited portion of my theoretical framework, namely the role that internal constraints play in bounding the decision-making environment in the context of performance-based accountability.

There are two efforts to establish frameworks that look at the decision-making process as a whole. The first is Gross, Kirst, Holland & Luschei's (2005) framework, in which the authors study how decision-making constraints operate in the context of performance-based accountability. Their framework helped greatly to inform the work of the overarching IES-funded study, because it detailed the different buckets of strategies that schools might select when they face potential sanctions for failing to meet achievement targets. These buckets included remedial strategies, curriculum strategies, instructional practice, and organizational changes. In the Gross et al. (2005) framework, the authors define what "peripheral," "moderate," and "core" strategies look like in each of the buckets. The framework, however, has two limitations – one major and one minor – that impacted my ability to apply directly it to my theoretical framework. The major limitation is that is it

more concerned with the outcome of the decision-making process – that is, the actual decision – than it is with the process or approach that the school took to arrive at that decision. The authors concluded that the schools in their sample were chaotic organizations, conforming to Cohen, March and Olsen's (1972) garbage can model of decision-making and did not explore the various contextual conditions that might lead to variation from school to school. The second point is a minor one – their sample contained only high schools, which arguably are not as regularly responsive to the pressures of performance-based accountability systems because they contain only one tested grade.

The framework that is most directly applicable to my work comes from Farley-Ripple (2008), who studied the decision-making processes in one district in Delaware. She divided the decision-making process into components that were aligned with my theoretical framework, including organizational characteristics, the characteristics of decision-makers themselves, the characteristics of the evidence that decision-makers employ, and the characteristics of the decisions themselves. While her findings in each of these areas greatly informed my work (including my theoretical framework), her study did not take the extra step of distinguishing between different approaches to the decision-making process, which is a function of the fact that the scope of her research was of multiple decisions within just one district.

The literature lacks an empirically based framework that describes the differential approaches that schools and districts might take when they are called

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upon by state and federal performance-based accountability systems to demonstrate student achievement gains. In previous chapters, I have demonstrated that many different internal and external forces shape the decision-making environment in schools and districts, leading them to use certain types of evidence, lean on certain sources for support, and involve a variety of different stakeholders while developing strategies for improvement. I attempt to fill this gap in the literature by offering a framework that uses my findings from the comparative case study to establish four typologies of decision-making behavior.

Conceptualizing Decision-Making Approaches

Before I present the framework, I present the assumptions behind it. First, I take as a given that there is no one best approach to decision-making. I assume that all decision-makers in public education strive to make decisions that are optimal for their schools, by which I mean that the results of their decisions are aligned to their stated objectives. In the context of performance-based accountability systems, one objective is likely the improvement of student scores on the state standardized test, but I do not assume that this is the only goal toward which school leaders aspire. Thus there are no "optimal" decision-making approaches, but rather multiple decision-making methods by which schools may, if they avoid potential pitfalls, achieve their goals.

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Additionally, I assume that schools are dynamic, not static, organizations. When a school's mission, philosophy and leadership changes, so too can the school's decision-making approach. As I depict in the framework, HS 3 spans two categories over the three-year study period and HS 4 spans three categories over the same time period. Categorizing schools as one typology or another does not brand the school with that classification. The final year of data collection for this dissertation was in the spring of 2011, and it is highly possible that these schools have changed their decision-making approaches since that time. I define the four approaches to encompass a full range of responses, with the expectation that a school making a change in its decision-making approach will still fit into one of these basic categories.

In my original review of the literature in Chapter One, I identified four potential dimensions across which schools decision-making approaches might vary (see Table 6.1). The first was the degree to which schools and district looked within the school walls for information versus exploring externally validated sources of information (Coburn & Talbert, 2006; Spillane et al., 2002; Abelman & Elmore, 1999). The second hypothesized relationship was whether a school or district prioritized human sources of information over technical information (Honig & Coburn, 2007; Kerr et al., 2006; Marsh, Pane & Hamilton, 2005; Rosenkopf & Almeida, 2003; Supovitz & Klein, 2003; ECS, 2002). The third relationship was whether a school pursued a top-down approach to decision-making or a bottom-up approach (Bidwell, 2001; Weick, 1976; Weber, 1947). Finally, the fourth

hypothesized relationship was whether a school or district made decisions in a linear manner or whether their process was more chaotic (Cohen, March & Olsen, 1972; Simon, 1955).

Table 6.1

Literature-Based Dimensions that Influence Schools' Decision-Making Approach

Internal <--> **External**
Human <--> **Technical**
Top-Down <--> **Bottom-Up**
Linear <--> **Non-Linear**

My findings in Chapter Four, however, suggest that schools are by-and-large linear decision-makers that pursue middle-out strategies to decision-making. Without sufficient variation in the sample along these dimensions, I was able to exclude them as factors when creating the framework.

To develop the framework, I read through each of the individual case study notes and write-ups, and I revisited the case-ordered descriptive matrices for information on the internal/external and human/technical dimensions of decision-making behavior. I then categorized each school along a continuum for each of the two dimensions, where the x-axis was internal/external and the y-axis was human/technical. Visually depicting where each school lay helped me to create the

four typologies because it showed where groupings occurred. Once I had placed the

schools along these two spectrums, I began to group them in ways that would

provide meaningful characterizations of each typology. I developed as many as

eight different groupings of behavior and then consolidated and re-consolidated the

groups until I had four categories that encompassed the full range of decision-

making behavior in my sample. Finally, I assigned a name to each of the discrete

categories.

Figure 6.1
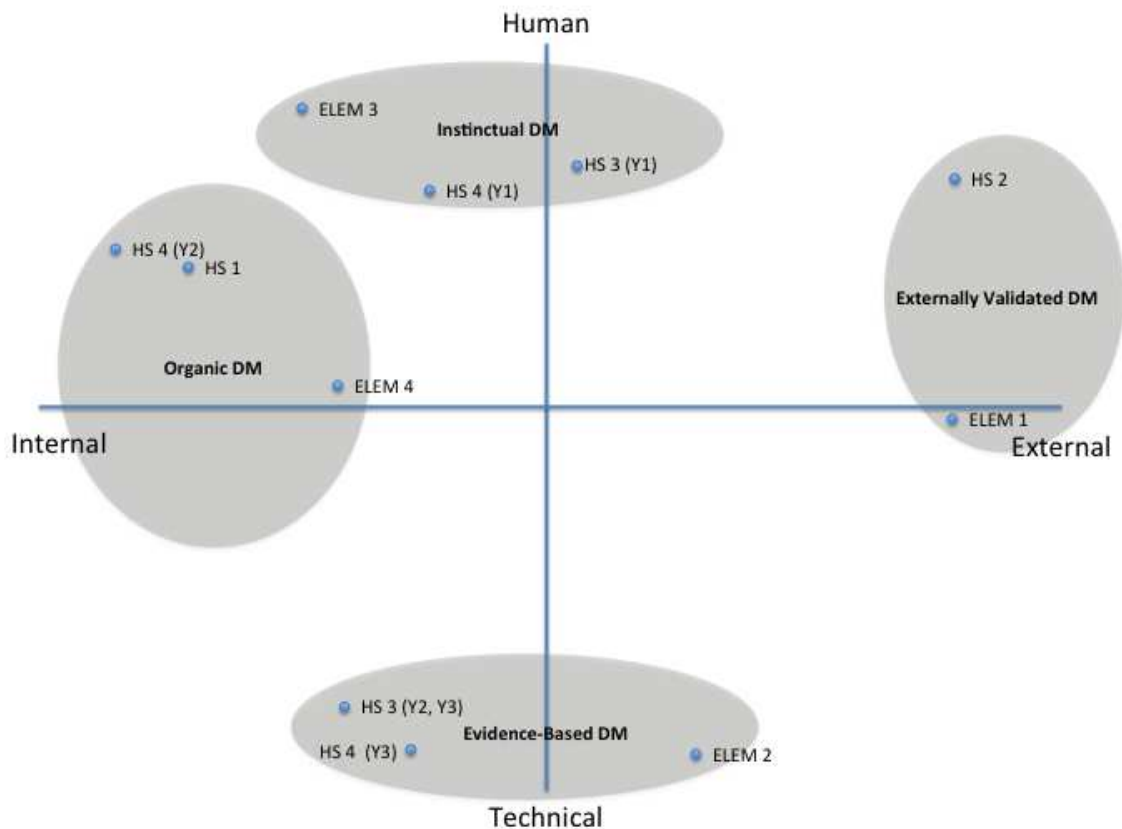
Two Dimensions of Decision-Making

Figure 6.1 represents the final consolidated version with the four typologies that comprise the framework. In the figure, the clouds represent the variation that can exist among schools within a particular typology. In several cases, it proved difficult to place a school in the same group over the three years of the study due to drastic changes within the school or district (for example, a cultural shift that came with a new set of administrators). In these cases, I split the school up by year, noting which typology fit for each specific year of the study. Below, I present the formal framework (Table 6.2) and explain, using specific examples from the cases, the common strengths, common pitfalls, and supportive structures of each of the typologies.

Table 6.2

Decision-Making Approach Typologies

Name	Description	Common Strengths	Potential Pitfalls	Supportive Structures	Sample Examples
Evidence-Based DM	Schools highly value technical information. Schools favor internal data to inform problem identification and external technical data to inform search.	• Robust problem ID through internal data analysis • Scientific evidence of success • Robust search • Schools as innovators	• "Over-testing" • Over-diagnosis of the problem • Ignores local trends • Blindness to school context • Exclusionary	RTI, curriculum review cycles, data analysis teams, piloting	ELEM 2, HS 3 (Y2, Y3) HS 4 (Y3)
Organic DM	Schools look from within to identify problems and search for solutions, examining both human and technical sources of information.	• Robust problem ID • Collaborative, inclusive • Leverages expertise and experience at all levels • Robust search	• "Over-testing" • Ignores local trends • Strong voices may overpower DM process • Search limited by geography and familiarity	RTI, PLCs, committees, piloting	ELEM 4 HS 1 HS 4 (Y2)
Instinctual DM	Schools make decisions based on gut reactions to problems, ideas for improvement. Primary sources include past experience, beliefs, and information from trusted colleagues and friends.	• Leverages expertise and experience of key decision-makers • Enables quick decision-making • Accounts for school/district context	• Highly dependent upon leadership orientation, district capacity • Exclusionary • Confirmatory bias in search	Improvement teams, committees	ELEM 3, HS 3 (Y1) HS 4 (Y1)
Externally Validated DM	Schools lean on external sources of information above internal sources. Schools use both human and technical sources of validated information, but generally place greater trust in professional networks and neighboring districts' success stories.	• Enables quick decision-making • Accounts for school/district context • Strong community support • Ability to learn from others' experiences in implementation	• Poor use of internal technical, human data • Districts more likely to be followers of trends, rather than trend-setters • Confirmatory bias in search • Blindness to school context	Local networks, professional associations	ELEM 1, HS 2

Evidence-Based Decision-Making. I found that schools using an evidence-based approach to decision-making highly valued technical information over human information, although they got their sources of information from both internal and external sources. These schools invested a large amount of time, energy, and resources into the problem identification phase of decision-making by adopting new methods of collecting school-level data. Evidence-based schools usually had in place at least one benchmark testing implement, and this robust investment in identifying problems set a solid foundation for the search and decision-point phases. ELEM 2, for example, created a "War Room" for collecting and analyzing data from internal sources such as benchmark exams and student report cards, as well as external sources of information such as the data gleaned from the state standardized tests. HS 3 and HS 4 also invested in the rigorous implementation of benchmarking tools during the duration of the study.

The experience in ELEM 2 also highlights a potential area of tension for schools falling into the Evidence-Based Decision-Making typology, namely that district stakeholders (for example, teachers and parents) might complain that the culture of testing became overbearing for students and take time away from classroom instruction. Additionally, a problem that all three schools in this category experienced was that school leaders were likely to over-diagnose the problem, which in turn led to an over-prescription of solutions, as school leaders saw every data point as a need for a full-blown school-wide solution. In ELEM 2, a district administrator admitted that part of the district's challenge was to put in check its

instinct to find specific solutions to each identified problem, regardless of how miniscule that problem might be. "We need to get a little bit better at looking at what becomes the litmus test for what we take in as the new thing we take in from down the pike," he said (District Administrator, ELEM 2).

One way that school leaders in these three schools attempted to avoid the "over-diagnosis" or "over-prescription" pitfall was to meet regularly to discuss the data and analyze the various issues facing the school as a whole. For ELEM 2, this took the form of the "War Room" and using the Response-to-Intervention (RTI) framework as a supportive structure to reinforce discussions around internal data analysis. In HS 3, the principal employed school improvement planning teams by the second year of the study, and he used this structure to gain a variety of perspectives across the school about the meanings and appropriate uses for student data. And in the third year of the study, the principal in HS 4 instituted a committee structure in which teachers met by grade level, by content area, and across the school to identify problems using technical data from the benchmark exams.

For the search phase, the three schools in the Evidence-Based Decision-Making typology depended on external technical information, such as professional associations, nationally vetted technical information on intervention programs (for example, the What Works Clearinghouse), and state-led technical assistance seminars. For these schools, human sources of information still played a valuable role in helping schools to select new programs and strategies, but the order of operations put technical sources as decision-makers' first source. School leaders

said that they mainly used word-of-mouth recommendations as a tool to convince

school board and community members of the need for a new program or strategy.

The principal of HS 4, who took over in the second year of the study, reported that

he was constantly scouring the Internet for education publications that would clue

him into new potential improvement programs and strategies. Once he found a

program that sounded interesting to him, he would ask the teachers in the high

school for their opinion – but only in that order. A district administrator described

the principal's search philosophy:

> "[The principal] is the guy who will cite the most recent best practice,
> research-based information until you are blue in the face. He attends
> national conferences, he teaches for the collegiate level so he is always
> forcing himself to learn. He completely believes that his job is to be well read
> and glean from what it is that he believes best practice is based on and what
> really works. He is a research-based guy." (District Administrator, HS 4)

Although the other decision-makers in the school and district may not originally

have been as inclined to lean on technical sources of information, the principal

reoriented the school culture over the two years that I observed him, making the

district as a whole focus on technical sources of information to a much greater

degree than was the case before his tenure.

This approach highlights both strengths and weaknesses for evidence-based

decision-making schools. On the positive side, schools are more likely to invest in

programs that have been validated through rigorous testing, including randomized

control trial designs and other rigorous quasi-experimental testing. Additionally,

staying abreast of new advances in educational improvement provides schools with

an opportunity to be innovators in their field, unbound by the typical constraints of geography and familiarity. On the negative side, however, schools might place too much value on external research, looking for "what works" for a broad swath of schools without careful evaluation of the specific markers that would make a particular program a good fit for a school's specific context and needs. An example here is HS 3, where school leaders searched for and selected a new math curriculum during the second year of the study. The program they selected was nationally recognized and had a strong record of success in raising student test scores. It also, however, represented an entirely new way of teaching math, and teachers nearly uniformly reported that they hated the program. By the third year of the study, school leaders said that they regretted their decision.

One way that ELEM 2 avoided this problem was to involve school and district personnel during the search phase by instituting a robust "pre-implementation" process for program selection. And by Year 3, HS 3 had learned from its mistakes, forming an improvement planning team that gathered input from teachers and administrators across different departments within the high school to inform search and decision-making.

In summary, schools employing an evidence-based approach to decision-making generally made deliberate, informed decisions around improvement that were based on technical evidence of success. These decisions took time and highly skilled staff at both the school and district levels to execute well. HS 3 and HS 4 spent years trying to become evidence-based decision-making organizations,

achieving this goal only at the end of the study period and thanks to leaders that pushed this approach with strong conviction and authority. As the lessons from the schools in this typology show, the successful implementation of an evidence-based approach requires systematic use of data to inform processes, and that data must become part of the fabric of the school or district, with stakeholders at all levels in accordance that data informs their strategy around instructional improvement.

Organic Decision-Making. Schools following an organic decision-making process typically gathered information from a variety of sources internal to the district and processed that information in a way that involved multiple stakeholders. Although school-level managers (the principal, assistant principal, specialists, etc.) managed the flow of information, ideas for improvement were encouraged from anywhere and anyone. Accordingly, teachers played an important role because they believed that their observations and ideas might well turn into improvement solutions that could be implemented school- or district-wide.

Although the name "organic" suggests that ideas might sift through to middle managers in a haphazard fashion, there were several mechanisms that provided structure around organic decision-making. Two of the three schools that fell into the Organic Decision-Making typology employed Professional Learning Communities (PLCs) as a way to gather feedback from teachers. PLCs are an organizational strategy that allow teachers to meet in groups to discuss learning and instructional techniques, challenges, and ideas. The structure of PLCs varied from

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district to district – in ELEM 4, teacher groups met by grade levels in afterschool

periods, and in HS 1 they met by area of instructional expertise during common

planning blocks. The common thread with these two schools was that teacher

expertise was a valued component of the decision-making process. Another way

that Organic Decision-Makers involved a broad constituency of actors was by

establishing committees to address specific needs in the school. ELEM 4, for

example, had a strong committee structure that was working on a number of areas,

including aligning the school's report card to the state standards. A district

administrator summed up the school's PLC and committee approach to search and

decision-making:

> "It gets down to, is it useable? Is that usable? Does the teacher find value in
> it? Does the teacher feel equipped? Do they feel prepared to be able to
> implement this? So with all that in mind, with this really firm investment in
> our teachers and our implementers, that's why we want to go to this model of
> professional learning communities, so we're going through that process right
> now, and when you talk about what works and doesn't work, from a research
> standpoint, I mean, we're going through that now. We have all these
> committees formed. We have administrators, teachers, school-based,
> department-based, we have central office based people on these
> committees." (District Administrator, ELEM 2)

HS 4 also instituted a number of committees that were tasked with addressing a

broad range of issues, including student discipline, curriculum selection, and

student drug testing.

Finally, organic decision-makers often piloted new programs before fully

implementing them. A teacher in HS 1, for example, came up with the idea to

institute a "Study Lab" for struggling students in math. In the first year, the program

was voluntary and only available to a select set of identified students. By Year 2, the program was an official program in the school that was mandatory for a larger group of identified struggling students. And by Year 3, the district had expanded the Study Lab idea to the middle school.

These three supportive structures highlight the emphasis that organic decision-makers placed on internally generated information. This information was slightly skewed toward human sources, as shown in the schools' placement in Figure 6.1, but decision-makers in these schools also considered technical sources of internal information, specifically student-level performance data. In this way, organic decision-makers had at their fingertips multiple sources of information on student performance to create a plan for improvement.

With this approach came three potential pitfalls. The first was that schools might fail to combine human and technical sources of internal information in a thoughtful and cohesive manner. In the second year of interviews, HS 4 exemplified this problem. The principal was new to the job and accepted teachers' suggestions for improvement without checking first to see if their suggestions were in line with the problems identified from benchmark exams. Although the school may have collected both human and technical data for improvement, the principal did not have the leadership skills necessary to narrow the field of options to those that were both supported by the data and by school-level personnel. As a result, the school pursued many different strategies and quickly depleted the school's budget.

Another potential pitfall was that, by focusing almost entirely on internal sources of information, schools did not always learn effectively from common practices in the field. If a neighboring district had trouble implementing a new improvement strategy, it would be useful for the decision-making district to have this knowledge a priori to the decision point and include it as a factor in the decision-making process. The principal of ELEM 4, for example, said she did not take advantage of the state technical assistance agency (or "Intermediate Unit") in the local area because she preferred to meet with actors internal to the district. And yet she admitted that the Intermediate Unit was doing trainings that were aligned to a number of district initiatives.

Finally, a third pitfall was that Organic Decision-Makers were highly influenced by the leadership characteristics of specific individuals at all levels across the district, and just one strong voice could overpower discussions and harm a district's culture of collaboration. In HS 1, for example, the school depended a great deal on its technology coordinator, who worked with teachers to integrate technology into their instructional techniques. Said the high school principal:

> "If he ever leaves, I'm going right after him. Because he is the guy that I lean on. If I've got in-service time, I'll say, 'Here's what we got, here's my goal, now run with it.' He'll run with it. He'll set it up, he'll bring the people in. And that's me delegating to him. It would take me twice as long to organize it, and it probably wouldn't be as good. He knows who the people are, he knows what we need, and he'll go out and set something like that up. Having that kind of person with those skills has been essential for us." (Principal, HS 1)

The principal freely admits that the organic nature of decision-making in his school was largely dependent upon the skills of one person, who personally gathered information from teachers and facilitated the entire decision-making process. ELEM 4 attempted to avoid this pitfall by hiring and promoting personnel who strongly believed in the participatory nature of the decision-making process. The principal for ELEM 4 was widely respected throughout the district as an organic decision-maker, and was eventually promoted to an administrative position in the district office where her primary objective was to create stronger communications between the various elementary buildings in the district. Her first initiative was to force principals to visit the other elementary schools to learn from practices in the other schools. In this way, the district invested in human capital as a way to sustain its philosophy around organic decision-making.

Instinctual Decision-Making. Even in the age of high-stakes accountability when school leaders are constantly bombarded with external accountability data to inform their decisions for improvement, some schools still relied primarily on their instincts as educators to make decisions. The schools and districts from my sample that fall into this group of Instinctual Decision-Makers generally favored human sources of information over technical ones, and internal sources (slightly) over external ones. In some instances, these preferences represented an intentional approach to school improvement; in others, it was the result of low levels of district capacity.

HS 4 (in Year 1) was an example of the former, as administrators at the school and district level rested on the assumption that their experience in the field, their familiarity with their district's context, and their in-depth knowledge of student needs would set the stage for informed decision-making around improvement. Personnel in this school remarked that technical information such as standardized test data only confirmed what they already knew to be true about areas for growth and improvement. For this reason, the decision-making process in HS 4 was highly dependent upon the personalities, experience, and beliefs of the decision-makers themselves. The high school principal in HS 4, for example, had been the principal for ten years and believed that his experience would guide the high school to make the best decisions for its students, regardless of whether his opinions were shared among teachers and other administrative staff.

Although some schools might consciously choose to employ an instinctual approach to decision-making, for others this approach was the fallback when the district lacked capacity to adequately collect and interpret technical information. ELEM 3 was an example of such a school. The district was small and the superintendent was overstretched in her duties – the curriculum director position remained vacant for the three years of this study due to budgetary constraints. With insufficient capacity to analyze research, attend conferences, and join professional associations, ELEM 3 had great difficulty finding a new set of curriculum materials for math. By Year 3, the superintendent felt that she had to select new materials that were aligned to the standards, and she worked with the principal of the other

elementary school (not ELEM 3) to select a new program. She was fully aware that her process was exclusionary and based on her personal beliefs and experiences, but she lamented that she just didn't have the time or the money to fully explore the research on other potential programs.

As the experiences of HS 4 and ELEM 3 highlight, the Instinctual Decision-Making approach is only as reliable as the instincts of the leader or leaders making the decisions, which the psychological research suggests is subject to myriad cognitive flaws and misunderstandings (Grove & Meehl, 1996; Tversky & Kahneman, 1974; Simon, 1972). The predispositions, experiences, and beliefs of decision-makers can lead to a confirmatory bias in decision-making (Lord, Ross & Lepper, 1979), wherein school leaders only search for programs that meet their preconceived notions of what will work in their schools. Findings from my sample show that these preconceived notions could limit the field of options and render searches superficial. For example, when school leaders at HS 3 (in Year 1) searched for a new reading intervention program, the principal asked the reading specialists to present him with three different options. Although the specialists did as they were asked, they favored one option far above the others, and their searches were perfunctory. In the end, the principal chose the favored program, and the search itself – which involved reaching out to neighboring districts – only served to confirm a decision that they had already made informally.

Additionally, even in schools with charismatic leaders, there was a tendency for decision-making to become exclusionary. Although instinctual decision-makers

often made decisions quickly, they did so at the expense of a thorough and inclusive inquiry into the underlying reasons for achievement gaps and the vetting of potential solutions. In the first year of the study, HS 3 and HS 4 both relied on school leaders' instincts to make decisions. While the principals in both schools touted the new improvement solutions underway – a new math curriculum in HS 3 and a new remediation tool in HS 4 – teachers in both schools expressed disappointment and frustration that they had been excluded from the decision-making process. By the end of the first year of the study, school-level administrators in HS 3 had already recognized that they needed to take steps to include a larger group of people in the decision-making process, because excluding teachers and other personnel had created conflicting philosophies and beliefs around improvement strategies, which in turn impacted buy-in to new decisions for improvement. In response to this need, HS 3 decided to establish improvement teams and committees that were tasked with solving specific problems.

My sample of Instinctual Decision-Making schools also shows that this typology may also be a way station for schools and districts that are under new leadership. While new school or district leaders find their footing and establish new processes and procedures around problem identification, search, and decision-making, they may need to rely on their gut instincts and predispositions. Both HS 3 and HS 4 fit into this category. HS 3's principal was new and he wanted to use internal technical data to make decisions, but he didn't yet have the appropriate benchmarking tools in place. By Year 2, he had implemented a benchmarking exam

and was avidly working to become a consumer of external research; in essence, he had turned his school into an Evidence-Based Decision-Making organization. HS 4 was also experiencing a transition, as both the high school principal and the district superintendent were set to leave at the end of the school year. Because he had been in the school for so long, the principal had made decisions based off his instincts about school needs, student deficiencies, and staff areas of professional development. The new principal who took over in Year 2 changed the school's decision-making approach to an Organic Decision-Making approach (and, in Year 3, an Evidence-Based Decision-Making approach). Instinctual Decision-Making does not have to function in this way, however. Although there were no schools in my sample that intentionally selected an instinctual approach as a permanent method for decision-making, the Year 1 data from HS 4 suggests that this approach could be a realistic and achievable goal for districts that have sufficient capacity both in terms of resources and human capital, as well as consistent leadership.

Externally Validated Decision-Making. This final category describes schools that valued information from external sources above internal sources. Schools leaders in this typology were accustomed to reaching out to external partners, including friends and colleagues in neighboring districts as well as national third-party reviews of potential programs and strategies. Although these schools consumed both human and technical information, they trusted human resources more than technical ones – in other words, they saw research based programs as good, they

valued them much higher if neighboring districts were already using these programs with some success. These schools were copiers rather than innovators, as they were rarely the first to adopt a new strategy that did not have a long track record of success. In HS 2, for example, the principal reiterated over and over that he valued improvement programs that were "research-based" because they would then have a greater chance of success in his school. But he also reiterated how important it was to his community that he validated these research-base decisions with neighboring schools and districts. As is evidenced by this principal's account of his approach, decisions in Externally Validated Decision Making districts were somewhat less contentious because community members, (i.e. parents and school boards) generally liked to copy practices from neighboring successful schools.

The two schools in this typology also highlighted several potential pitfalls with the Externally Validated approach. Although school leaders stood to learn a great deal from human and technical reports of programmatic success, they tended to ignore contextual factors specific to their school or district that may have impacted program implementation success. For example, ELEM 1 adopted a standardized, scripted curriculum for reading because the What Works Clearinghouse reported that the program was effective at creating measurable gains in student academic achievement. The school's reading scores, however, remained low and even slipped over time – by the second year of our visits, the school had entered School Improvement I. Teachers in the school said that they hated the program because it didn't allow for instructional flexibility with their students.

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Although the program might have been externally validated as "successful," it did not align well with the culture of the school.

A related pitfall is that the schools in this typology tended to select solutions that did not align well with identified problems. Again in ELEM 1, the district was looking to adopt a new math program, even though it was in reading that the real barriers to improvement existed. Although this school had instituted benchmark exams to measure student growth, it was not effectively using this internally-generated information to inform decisions for improvement.

ELEM 1 and HS 2 highlight the need for Externally Validated Decision Making schools to invest in various supportive mechanisms that expand their reach into technical and human networks. On the technical side, school leaders in these two schools did not fully utilize technical information from professional associations and technical assistance agencies, which could have provided timely information on the latest research, access to education conferences, and other materials. District administrators in HS 2, for example, said that they were working to change district culture to become more actively involved in searching for a broader set of technical sources of information, but in general they still tended to familiar sources of information such as their informal networks with neighboring districts. The principal of the high school in the same district where ELEM 1 was located was a possible exception to this trend. He proactively looked at technical resources and human resources, reporting that he weighed them equally. When evaluating any new program or strategy, he asked probing questions about potential barriers to

adoption, price, competing programs on the market, and ease of implementation.

Although this principal's approach was not common to the district, his approach

points the way for Externally Validated Decision Makers to make efficient use of

external information.

Academic Value of the Framework

The framework that I present in Figure 6.1 and Table 6.2 advances what we

know about how schools under pressure from performance-based accountability

systems approach the "what now?" question. Because I designed the framework to

fit for any school operating in this context (which, in 2013, was essentially any

public, non-charter school), researchers can apply the framework to their own

samples to see if it holds up to scrutiny. Broader use of the framework in the field

would allow researchers a lens through which to examine inter-school differences in

response to performance-based accountability pressures. While it may be intuitive

that schools act differently when the state identifies them as needing to improve,

this framework allows them to categorize their responses on two literature-based

dimensions and determine where they fall among four typologies. Additionally,

knowing where a school or district falls on the framework is helpful because it

provides insight into an organization's strengths and weaknesses, as well as the

opportunities and challenges to decision-making.

A nuanced feature of the framework is that it does not treat the two

dimensions that comprise the framework – human and technical information;

internal and external information – as a polarized dichotomous response. In other

words, it allows for the fact that, in a given decision, a school may very well consult both internal and external information sources, as well as both human and technical sources. The strength of the framework is that accounts for the fact that schools generally rely more on one type of information than on the other, for example by consulting one type of information before pursuing other options, which belies a fundamental belief that one type of information is more valuable or trustworthy than another. In the Year 3 interview protocol for this study (see Appendix C), I asked respondents which types of information they used to make decisions – human or technical. Every single respondent was able to identify sources in both categories that they used to help them identify problems, search for solutions, and select improvement options. But then I asked a follow-up question: which of these sources did respondents trust the most? Again, respondents were able to clearly identify which source of information was more trustworthy. I did not ask the same question to distinguish between internal and external sources of information – instead I discovered this dimension through analysis – but I suspect based on my review of the data that a similar preference exists given the nature of respondents' attitudes toward internally and externally generated information.

Although the framework has potential to add value to the field, more rigorous testing is necessary to strengthen its external validity and generalizability to a broader set of schools. Doing so could simply involve researchers using the framework as a qualitative component of studies of schools under pressure to improve student achievement, or it could take the form or a larger, more cohesive

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approach to test the framework assumptions using quantitative methods. The latter

approach would likely involve surveying a large sample of school personnel about

their decision-making habits and determining the degree to which their responses

are consistent with the two-dimensions that form the backbone of the framework.

In addition to filling a gap in the literature on decision-making and providing

a tool for researchers, the framework can also function as a practical tool for district

and school leaders who are looking to understand more fully the strengths,

weaknesses, opportunities, and threats that their schools face given their particular

decision-making approach. In the final chapter, I place the framework and the

broader discussion of decision-making into the larger policy context, which includes

the recent waivers to the No Child Left Behind Act (NCLB), the Common Core State

Standards (CCSS), and the Race to the Top (RTTT) initiative. I then bring my work

into focus by relating my findings back to the original theoretical framework,

addressing broadly the ways in which my research adds to the literature base on

decision-making in education. I then discuss implications of my work for

policymakers, practitioners, and vendors, including ways in which these

stakeholders can use the framework for practical purposes. Finally, I address what

the future might hold for schools, including ways in which technology might

drastically change how schools identify, search for, and select decisions for

improvement.

CHAPTER 7: DISCUSSION AND IMPLICATIONS

Contextualizing the Dissertation

As demonstrated in this dissertation study, performance-based

accountability systems lead schools to adopt a variety of different decision-making

approaches in an effort to find the right programs and strategies that "fix" identified

problems. The purpose of my study was to gain further clarity into the nature of

these approaches and analyze the various forces at play that might cause a school to

select one approach over another. Additionally, I provided descriptive accounts of

how schools under pressure from accountability systems made sense of their

environments, gathered information, and ultimately selected improvement

programs and strategies. To this end, I employed a comparative case study design

that included eight Pennsylvania schools (and their corresponding district offices)

from a variety of different circumstances, geographic regions, and student

demographics. What the schools had in common was this: a mandate from the state

to improve the scores of their students on the state test or face sanctions that would

ratchet up year after year. My findings highlight that all schools – even those that

were relatively high performers – felt pressure to improve and accordingly selected

many varied strategies for improvement. Additionally, schools operated under

conditions of uncertainty, which added complexity to their decision situations.

This complexity is certain to increase even more over the next few years as

schools are forced to contend with changes to existing accountability systems and

new policies around school improvement. This study began in 2008 and data

collection concluded in 2011. In this small three-year window, there were a number

of important policy changes that affected the way that schools will approach school

improvement in the future. The first major shift in education policy occurred in

2009 when President Obama signed into law a stimulus bill that contained $4.35

billion to support a "Race to the Top" (RTTT) education fund. This fund incentivized

states to adopt rigorous standards, create state longitudinal data systems, and lift

existing caps on charter schools. Pennsylvania received a Phase 3 RTTT grant in

December 2011. The next major policy change was the Common Core State

Standards, which were designed by the Consortium of Chief State School Officers

(CCSSO) in collaboration with the National Governors Association (NGA) and were

made public in 2010. The Common Core standards encourage states to align their

standards and assessments to a set of rigorous college and career readiness

standards. Pennsylvania agreed to adopt the standards in 2010 and has been

working since that time to align the state assessment to the standards. Although the

Pennsylvania State Department of Education signaled in 2013 that it might be

backing off its commitment to the Common Core, the state also unveiled the

"Pennsylvania Core Standards" which, similar to the Common Core, are designed

around college and career readiness goals. When this study began, school leaders

had not yet heard of Common Core State Standards, but they were well aware of

them by the final year of data collection and reported that their schools were

scrambling to make sense of how these new standards would affect their

curriculum, instruction, and professional development efforts. Finally, a third major

policy change occurred in 2011 when the Obama Administration announced it

would issue waivers for the proficiency requirements in No Child Left Behind if

states agreed to meet a set of requirements, such as linking teacher evaluations to

student test scores. Pennsylvania received its waiver in August 2013, and this will

change the way that the state incentivizes performance on the state standardized

tests, which in turn could have broad implications for school decisions and

improvement strategies.

That these three major education policy initiatives were released in the short

window for this study was coincidental. However, it belies the underlying fact that

public schools operate in an intense, complex, and dynamic accountability

environment. To thrive in this environment, schools themselves must adapt to new

external stressors. It is my hope that researchers, policymakers, and practitioners

will use this dissertation as a means to better understand the process by which

schools come to make decisions for improvement, including the various internal and

external forces that constrain schools as they strive to make improvements in the

context of ever-changing accountability mandates.

In this concluding chapter, I return to the literature to compare my findings

from this study to the body of research on decision-making, stating the limitations of

my dissertation study and discussing the implications of my study for academics. I

then discuss the broader implications of my research for policymakers and

practitioners. Finally, I conclude with a brief discussion of the future of decision-making research and practice.

Revisiting the Decision-Making Literature

Theorists and researchers generally agree that context can constrain the decision-making environment in organizations and make it very difficult for organizations to operate in a purely "rational" manner. They disagree, however, on the degree to which these contextual constraints disrupt the decision-making process. Bounded rationality theorists (i.e. Forester, 1984; March, 1994; Simon, 1972) describe the decision-making process as impacted, but not destroyed, by internal and external constraints. On the other end of the Rationality-to-Chaos Spectrum (see Chapter One), Cohen, March & Olsen (1972) describe organizations as little more than "organized anarchies" (p. 1). One goal of my dissertation study was to determine where schools and districts fit into this schematic. I found that schools did indeed operate under powerful contextual constraints, but that these constraints did not cause them to devolve completely into chaos. The degree to which these schools tended toward chaos depended, not surprisingly, on the intensity of the constraints in question. Schools operating under conditions of greater ambiguity (for example, unclear or conflicting goals for improvement in a politically charged environment) were likely to fit the conditions put forth by organizational theorists such as Meyer and Rowan (1977) and Weick (1976) that described schooling as "loosely coupled." On the other hand, the majority of schools

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in my sample fit into the slightly less-constrained environment described by theorists of bounded rationality, suggesting that there remains a certain degree of rationality in decision-making in public education, as expressed through schools' relatively linear, methodical approaches to decision-making.

Although it might be tempting to determine how "rational" a school is in its decision-making approach, there is danger in placing each school in a specific location along the Rationality-to-Chaos Spectrum, as I do in Chapter Five (Figure 5.2). First, placement on the Spectrum might provide context for school decision-making practices, it tells one very little about *how* a particular school approaches the decision-making process. Whereas the framework offered in Chapter Six is intended to establish a set of decision-making typologies that apply to schools and districts, the Spectrum is intended more as a guide to the literature. Additionally, the different theories of action on the Spectrum have different assumptions about the nature of organizations, making it difficult to directly compare one theory to another. For example, bureaucratic theory is mainly concerned how the nature of organizational structures impacts decisions, whereas sense-making theory looks at decision-making as a collection of individuals operating in tandem to come to the decision point. In this way, the theories on the Spectrum offer different lenses through which researchers can analyze decision-making in schools and districts, and are not a means of strict categorization.

Looking at the Spectrum in this way – as a guide rather than as a categorization tool – also highlights two realities about the decision-making

literature. The first is that much of the literature comes from disciplines other than

education. Although there is nothing wrong about borrowing from economics,

psychology and sociology to explain decision-making processes in public schools,

my research points to several ways that schools are a very different type of

organization from the ones described in the literature borrowed from other

disciplines. Specifically, schools are public organizations with an underage clientele,

a de-professionalized workforce, and a flat hierarchy that makes them worthy of

specialized attention in the decision-making literature. Some education researchers

have turned their attention to this area in the last ten years (e.g. Coburn, 2006;

Honig, 2003) but more concentrated attention would be a worthy investment.

Second, the literature depicted along the Rationality-to-Chaos Spectrum is outdated.

Much of the literature on decision-making comes from the 1970s, including Simon's

analysis of bounded rationality (1972), Tversky and Kahneman's examination

psychological heuristics (1974), Meyer and Rowan and Weick's organizational

theory analysis (1977 and 1976, respectively), and Cohen, March & Olsen's garbage

can theory (1972). Although these remain seminal works in the field, organizations

themselves have changed dramatically in forty years – they operate in an

increasingly global environment where technology creates both increased

opportunity as well as increased challenges for decision-making. The ways that

organizations identify problems, search for solutions, and make decisions for

improvement have changed due to these advances, and the literature must be

updated to reflect the current reality. Furthermore, the task of applying the

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literature to education is made more difficult by the fact that performance-based

accountability did not exist to nearly the same extent in that decade. Since the

advent of high-stakes accountability in education, schools operate in a

fundamentally ambiguous environment: they experience a large amount of top-

down pressure for improvement at the same time they are called upon to act in a

linear, rational manner to improve their performance. Accordingly, more targeted

research in the high-stakes, performance-based accountability environment of

public education would help to advance the literature, as well as provide practical

guidance for schools struggling to meet rigorous accountability performance

targets.

Another key finding from my research is that, when constraints press upon

schools, the search process is the most adversely affected phase of the decision-

making process, as schools often truncate or rush their search for improvement

remedies when they are short on time, money, or human capital. This finding

suggests that the decision-making literature, which generally examines the whole of

decision-making processes, would benefit from a closer look at search in particular.

Literature on search processes generally focuses on the various limitations on a

thorough search process – geography, familiarity, etc. – but a more detailed inquiry

into the mechanisms that can encourage a more thoughtful, deliberate process

would be worthwhile.

The gaps in the literature that I name above may be due to the fact that

education researchers have focused their attention and efforts lately on a narrow

component of decision-making, namely the use of evidence to inform decision-making. This body of literature examines how school leaders make use of data, including state data, school data, and student-level data to inform their decisions. Their primary concerns are to determine the patterns of data use that accord with the adoption of specific strategies for improvement (e.g. Kerr et al., 2006; Marsh, Pane & Hamilton, 2005; Supovitz & Klein, 2003; ECS, 2002) and/or the various barriers to effective data use (e.g. Kerr et al., 2006; Doyle, 2003; Massell, 2001; Stringfield, Reynolds & Schaffer, 2001). While both of these questions are interesting and align to my work on decision-making as well, my work takes the issue further by broadening the scope to all types of decisions in schools – those based on data and those that are not – and also by focusing on the specific mechanisms that cause schools to adopt one type of decision-making process over another. In this way, the two literatures overlap, but are not the same.

Another area ripe for further inquiry is the relationship between decision-making strategies and school achievement levels. Bounded rationality theorists claim, for example, that bounded decision-making environments cause decision-makers to select suboptimal outcomes (e.g. Howes & Lewis, 2009; Tversky & Kahneman, 1974). In education, this would suggest that school leaders select less effectual improvement solutions when they operate under conditions of contextual constraints. This is a difficult relationship to measure, however, because there may be confounding factors at play within the school, for example the school's qualifying subgroups, previous year's performance, and other variables.

It is a limitation of my dissertation that I do not fully explore this relationship using quantitative methods, however. Future research should attempt to fill this gap by seeking to answer the following questions.

First, what characterizes a "successful" decision? The most obvious outcome measure would be meaningful effect size improvement in student achievement scores in reading and math. The challenge here would be measuring improvement in high schools, as secondary schools are only required to test one grade (as opposed to elementary school that test students in grades three through eight). Another tempting approach would be to measure schools' ability to meet Adequate Yearly Progress requirements. However, this approach is flawed because AYP thresholds vary by state and schools may qualify for state forgiveness measures such as Safe Harbor (i.e. making a sizeable jump in scores even if scores remain below the threshold) or Confidence Intervals (i.e. using statistical techniques to determine if the threshold bar is within the margin of error). Additionally, researchers may consider using other outcome variables that are not explicitly linked to performance-based accountability, such as student growth (as measured on benchmark tests), student engagement, collaboration, or teacher satisfaction.

Second, what types of decisions lead to better outcomes for schools? The main challenge here is that it is difficult to isolate one decision from the many decisions that the average school makes in the hopes of improving student test scores (Weinbaum, Weiss & Beaver, 2012). Assuming that researchers were seeking to isolate the effects of one decision on school improvement, a randomized

control trial would be appropriate, as this method can test the impact of the decision in question versus the status quo. The problem here would be external validity, as an "effective" decision in one school might prove ineffectual in another due to differing contextual constraints. Finally, RCTs can only test effectiveness of the decision itself – it cannot take into account the decision-making process.

As mentioned in the previous chapter, a more worthwhile endeavor would be to measure the validity of my decision-making framework by surveying a very large sample of schools about their decision-making habits and analyzing the degree to which their responses are consistent with the two-dimensions that form the backbone of my framework. In either case, a quantitative study can build upon my qualitative work, as I expose the potential mediating and/or moderating variables that impact a school's overall approach to decision-making.

Implications for the Broader Stakeholder Audience

Aside from filling gaps in existing research and suggesting areas for future research, this dissertation study also offers some practical tools for policymakers, practitioners, and vendors.

First, policymakers benefit from the descriptive accounts of decision-making constraints. My research shows that schools aren't just generically "under pressure" to improve from performance-based accountability systems – they are being squeezed from all sides, often with conflicting goals and strategies for improvement. This immense pressure to perform under conditions of uncertainty may steer

schools away from the tough decisions and toward the so-called "low hanging fruit" such as gearing curriculum improvements toward tested subjects, investing in test preparation, and focusing on students on the bubble of proficiency.

To incentivize more meaningful improvement goals, policymakers would be wise to give local decision-makers the tools they need to overcome some of these internal and external barriers. Although the reach of performance-based accountability is purposefully limited – it is not the work of federal or state governments to control school board politics, nor can they set the tone of a school's collaborative culture – to the extent possible, policymakers can provide financial incentives for meaningful change and avoid unfunded mandates. Relieving schools of acute financial stress makes them freer to select programs and strategies that fit their improvement goals, which are based on identified student needs.

Even more importantly, policymakers can use the framework to target technical assistance to schools in more meaningful ways. Given time and resource constraints at the state level, it is often easier for policymakers to treat all schools and districts as equals in terms of technical assistance. The Intermediate Units (IUs) in Pennsylvania, for example, provide trainings on Common Core alignment and other timely topics, but these trainings generally follow a one-size-fits-all approach. My framework allows state policymakers to provide targeted trainings that take into account schools and districts' differential approaches to the decision-making process. A school that fits into the "Externally-Validated Decision-Making" category, for example, would learn best by observing other schools in the state and by

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attending presentations on research-based programming options. Meanwhile, a

school that follows "Intuitive Decision-Making" would derive more value from a

technical assistance approach that allowed school leaders to pilot new programs in

their schools and then formed focus groups to discuss broader implementation.

Although more research is needed to test this relationship, it is my hypothesis that

aligning technical assistance to a school or district's decision-making approach will

improve training efficacy and ultimately lead schools to make wiser, more

deliberate decisions for improvement over time. A detailed list of considerations for

each of the decision-making typologies is below.

- Evidence-Based Decision-Makers: These schools like to use data to make

  their decisions. Accordingly, states can provide detailed, disaggregated data,

  including specific tested areas that were troublesome for students at all

  ability levels. The state can also help schools by providing research and

  policy briefs that gather together information on the latest research trends

  and findings that align to specific decisions the school is looking to make in

  the future (for example a new curriculum program or computer-based

  remediation program).

- Organic Decision-Makers: These schools prefer to come to decisions

  internally and may resist state guidance. States can add value during the

  decision-making process by providing programs for schools to pilot

internally, or helping schools interpret internal data from benchmark tests

and other data points. If school culture is poor, the state can make available

facilitators to encourage schools to collaborate and come to a consensus on

school improvement goals. In general, policymakers would do well to have

in-person meetings about improvement with a broad group of decision-

makers in the school.

- Instinctual Decision-Makers: These schools typically make decisions based

  on their internally held views and beliefs about student achievement gaps

  and needs, and therefore may mistrust state interference in their decision-

  making process. The state can provide guidance by explaining external data

  sources (such as student achievement scores or relevant research), but it can

  also add value by linking school and district-level personnel to a larger

  network in the local community, thus lessening the geography/familiarity

  constraints on decision-making. Additionally, policymakers may want to

  press school decision-makers to identify on paper what they see as the

  problems the school faces, as well as the solutions they have in mind for

  improvement, because doing so lets the schools fully understand how their

  experiences, beliefs, and culture guide their decision-making process.

- Externally-Validated Decision-Makers: The state has a large role to play with

  this type of decision-maker, as these schools generally welcome state

guidance. Accordingly, the state can offer a variety of services – explaining research, interpreting data, facilitating improvement teams, etc. – but it can also take its cues from the districts themselves and provide trainings on specific topics of concern. The state can also help schools select programs that are not only successful on the broad scale, but also have a good track record in meeting the specific needs and context of their schools.

Although vendors are not the primary audience for this dissertation study, I should note that my work does have implications for the vendors of instructional, remedial, curricular, and data warehousing products. Knowledge of the differential decision-making approaches of schools and districts may help vendors to target their products to schools' unique needs, especially since many products are modular and customizable. In an ideal world, when school and district leaders become aware of their district's opportunities and challenges, they will be better equipped to talk intelligently with vendors, and this in turn will lead vendors to better target their products. It is my hope, however, that vendors will not abuse the framework. One way that they could do this is to use the school profiles to align their "pitches" to particular types of school decision-makers without making any effort to actually check to see if the product reasonably meets the schools identified needs. Worse, vendors could examine the weaknesses of a school's profile and use those weaknesses against them, for example by limiting exposure to competitive products to exacerbate the problem of familiarity. Luckily, however, most vendors are not

familiar enough with the internal machinery of school and district culture to determine with great accuracy where schools fall on the framework – schools themselves are best equipped for this task, and it is their choice whether to share this information with vendors.

My framework also provides practical tools for practitioner, allowing school and district decision-makers to identify which category best fits their schools' context. Because a framework can identify potential pitfalls for each category, school leaders can work to address potential problems before they manifest themselves. If, for example, a particular approach is likely to engender feelings of resentment from teachers, school leaders can head off this problem by meeting with teachers, explaining their approach, and asking for structured feedback on decisions. A framework also allows school leaders to think outside the box by exposing them to other types of decision-making approaches. School leaders who are looking to make a change in the way they make decisions for improvement under the banner of performance-based accountability can use the framework to guide their new approach. Finally, because the findings from the previous chapters highlight the importance of search to the overall decision-making process, this framework can guide district leaders to conduct more robust searches for new improvement programs and strategies.

While efforts to make the decision-making process more inclusive and collaborative (for example, through Professional Learning Communities or Distributed Leadership initiatives) are becoming more popular, schools must

ultimately choose the decision-making approach that best fits their needs. School decision-makers should think of their approach to improvement as a "process" in and of itself, which they can influence and improve upon.

My framework is not the only practical tool to assist policymakers and practitioners in selecting programs and strategies for improvement. The Pennsylvania "Getting Results" document was an attempt to create such a decision-making framework, but it fell short of providing meaningful guidance, and instead represented simply more red tape. Instead of more paperwork, school actors need real training in how to make decisions. Even if they do not employ my framework, policymakers can use simple worksheets to help schools detail their plans for improvement, including ways in which they will engage community stakeholders, collaborate both within the school and the district, and use resources effectively. Although constraints, such as the ones examined in this dissertation, are certainly unavoidable on the whole, they are far more manageable when decision-makers are aware of their existence well in advance of the decision point and are prompted to strategize ways to overcome them.

Looking Ahead

My dissertation focused on a set of schools that I believe are fairly typical of K-12 schools throughout the country. Although they might have had high-speed Internet connections and a couple of computers in the classroom, they were not "high tech" classrooms. No school that I visited had, for example, a 1:1 laptop-to-student ratio or used a blended learning approach to instruction. Teachers typically

received some training on incorporating innovative new ideas into their classrooms, but these approaches did not represent a wholesale reorientation of the learning process around 21st century technology tools. With that said, those technology tools have the power to transform the decision-making environment in schools over the next decade, which may render my research outdated. Although there are many technology-based innovations that may shape decision-making in schools, I highlight three trends that are particularly relevant to my study.

First, data warehousing tools are becoming extremely sophisticated tools for school and district administrators during the problem identification and search phases of the decision-making process. This technology makes it exponentially easier for school leaders to identify student-specific problem areas very early on in the school year. Data warehousing products are not new – most schools in my sample employed some type of software program to keep track of students' growth over time as measured in interim assessments. What is new is that these tools are increasingly linked to specific interventions that narrow the field of options during the search phase.

The second trend, personalized learning, is linked to the first, as both are concerned with using technology to pinpoint student-specific interventions. Personalized learning goes farther than aligned data warehousing tools, however, because it represents a coordinated effort to tailor instruction, curriculum, and remediation to each student's unique needs. Instead of the traditional one-size-fits-all classroom model in which students sit quietly while the teacher talks at the front

of the class, personalized learning supports a model where students become the center of the learning environment, using technology tools to work at their own pace on projects specifically designed for them. Because personalized learning presents a dramatically different perspective on the fundamental relationships among students, teachers, and the curriculum, the adoption of a personalized learning approach has definite implications for the decision-making process overall. Instead of selecting a curriculum that will fit for all students, for example, schools might decide that they prefer technology-based tools and supplemental materials that fit a wide range of student abilities and instructional preferences. Remediation might well take place inside the classroom as opposed to after school or in a designated tutoring block. These types of changes mean that decision-makers must open their field of options to new and innovative solutions, and that researching potential options may not be as easy as calling colleagues in neighboring districts to ask what types of tools they are using. Personalized learning pushes decision-makers beyond the bounds of familiarity and geography, encouraging them to pursue different avenues for ideas, including blogs, wikis, social media, and other technology-based tools for learning. In this way, the search becomes both more nuanced and more open, as teachers and administrators use their most trusted source of information – trusted friends and colleagues – in new ways. Teachers and administrators can expand the base of their human searches by using technology tools to scan the products that others in their extended social network are using, and they can expand their technical searches as well when people in their social

network post studies of effectiveness, product reviews, and other technical information. The power of technology tools in general and social networking tools in particular also means that decision-makers must constantly be on the lookout for digital content while screening these materials to ensure that they are high quality, aligned to the standards, and relevant for students given their specific academic and social needs.

Finally, technology brings with it a fascinating new opportunity to gain feedback during the search and decision point phases of the overall decision-making process. Schools are beginning to experiment with "crowdsourcing" to get ideas and input on decisions from a broad range of community and school actors. Crowdsourcing is the practice of gathering ideas through online communities or specially designed digital hubs for the purpose of solving problems. Or, as defined in the scientific literature, it is "an online, distributed problem-solving and production model" (Brabham, 2008, pg. 75). Schools are starting to look to crowdsourcing techniques as a way of outsourcing the search phase of the decision-making process. A 2013 EdWeek article (Davis, 2013), for example, profiled the Poway Unified School District in southern California, which used a crowdsourcing approach to determine new safety and security policies for the district. Using an online platform, all 4,000 school district employees were able to voice their opinions around new safety measures. Doing so helped the district to avoid the "familiarity" pitfall by allowing individuals who were not traditionally the "decision-makers" contribute to the field of alternatives. And it impacted the decision point by

allowing the decision team to organize the proffered ideas into categories and tallying their popularity across a broad swath of district stakeholders.

These three trends, while exciting, raise important questions for policymakers and practitioners. The most important question is how to strike a balance between data-driven decision-making and educators' intuition. Data is certainly useful and is becoming more plentiful every day, but decision-makers run the risk of not being able to see the forest through the trees if they turn every decision into a dispassionate analysis of school and student data. And even if we assume that all decision-makers are expertly trained in data analysis – which most likely they are not – many will argue that we are still missing the expertise that comes from working with students every day and understanding their academic and social needs on a personal level. In essence, this debate is a reformulation of the "technical" versus "human" sources of information debate that I discuss in Chapter Five. The trend is certainly toward more technical sources of information, particularly internally generated student-level data analysis, but schools report that they still highly value personal connections in which they discuss school needs and areas for improvement with trusted colleagues.

A second question is how to involve stakeholders in a meaningful way without adding undue complexity to the decision-making environment. Opening decisions to a broad range of stakeholders through efforts like crowdsourcing represents an innovative approach to decision-making, but it also adds complexity to the political environment because it exposes decision-makers to contrarian

opinions and political factions (for example strident school board members). Similarly, investing in personalized learning requires coordination across multiple stakeholders, most notably parents and the students themselves, which means that schools may need to engage this broader audience during all stages of the decision-making process. If schools do not expertly manage the broadened stakeholder pool, decisions may veer toward the "garbage can" model that is highly susceptible to political forces and is chaotic in nature.

Finally, technology-based innovations raise the question of how schools can keep up with the demands of 21st Century learning tools and decision-making techniques while also keeping pace with the demands of performance-based accountability measures. Many technology tools tout their alignment to the Common Core State Standards, for example, but it is up to school leaders to determine whether the products will actually help their students achieve to the standards. Furthermore, while performance-based accountability is moving at a quick pace, technology tools are moving even faster, which means that schools must exercise caution before purchasing costly technology, lest these tools misalign to practical needs for improvement or are incompatible with one another.

Looking into the future, it appears as though, while the No Child Left Behind Act with its strict 100% proficiency and AYP requirements will soon be a thing of the past, performance-based accountability is likely here to stay. If this assumption holds true, it will be the responsibility of policymakers, especially those at state departments of education, to work with schools and districts to make sure they

receive the best possible information and the appropriate tools to tackle their challenges to successful school improvement. In the introduction to this dissertation, I asserted that performance-based accountability systems provided clear descriptions of front-end problems and back-end proficiency requirements, but was opaque in the middle. As my findings in this dissertation show, the middle of the decision-making process should not be opaque, but rather transparent and well defined. During the next legislative examination of the federal role in education policy (should that day ever come), policymakers should provide clear guidelines to states about their expectations around the three critical phases of the decision-making process – problem identification, search, and the decision point. States, in turn, should provide technical assistance to districts to aid them in making choices that fit the needs, constraints, and general context of their schools. Additionally, it is the responsibility of school leaders to carefully analyze their needs, conduct thorough searches, and minimize the constraints that pose challenges for successful school improvement. Finally, a new age of performance-based accountability presents an opportunity for researchers to study how schools and districts respond to top-down calls for improvement in a changing political environment. It is my hope that this dissertation provides a theoretical framework and a classification tool that can be adapted to this changing accountability context.

Protocol Introduction

To give you a little background, I am working with a team of researchers at the University of Pennsylvania and we are conducting a study of how schools across the Commonwealth of Pennsylvania are attempting to improve student performance. This is part of a federally-funded research program. This interview is part of our data collection for the study. In addition to this visit, we hope to return to your school next year to follow its progress. Your school was selected for this study based a stratified random sample in combination with factors related to student performance and demographics. Our conversation is confidential and will be combined with interviews of others to produce an overall picture of schools across the study. I'd like to ask you to sign this consent form that explains a bit about the study and describes our commitment to keeping this conversation confidential, so we hope that you will feel comfortable being as candid as possible. Also, I'd also like your permission to tape our conversation. No one other than the research team will have access to this recording, but it will be helpful in our analysis of all of the information that we collect. Your participation is voluntary and you are free to stop at any time or skip any questions you choose not to answer.

Background questions

1. I'd like just a little bit of background. I think I remember you told me you've been principal for __ years? Were you a principal elsewhere? What did you do before you became principal?

Perceptions and Beliefs

2. Can you tell me a little about:
     a) student performance at this school?
     b) teacher morale and community at this school?
     c) are there particular groups of students or teachers about whom you are concerned?

3. What are some of your short-term (1 year) goals for this school? Longer-term (3 year) goals?

4. How, if at all, do the state AYP goals influence your goals? (pressure from district, school, community board, etc.)

5. How meaningful are the PSSAs as an indicator of this school's performance?

6. What (other) types of data do you find to be useful? And how do you use them?
   Who does the analysis of the data?
   Probe for using data inform to decisions about *instruction, curriculum, remediation, resource allocation, professional development*

General school improvement strategies

7. **We understand that your school was labeled as "in warning" following last year's PSSA results. What efforts have been introduced in response to this label this year?**
   (Curricular, instruction, resource allocation, test prep, remediation, data use, outside expertise, additional rewards and sanctions, non-academic issues)

8. **How much do these changes affect what teachers do in their classrooms on a daily basis?**
   Probes:
   a) More time for instruction?
   b) Covering more content?
   c) Using more effective instructional strategies?
   d) Focusing on different skills or knowledge?
   e) Better aligning instruction to state standards or anchors?
   f) Focusing on tested skills or question types?

9. Tell me about these programs.   How many students and teachers are involved? How would you describe the overall effort that each of them is receiving?

10. Why were these particular programs chosen? (What need/problem did they seek to address?)

11. Do you plan for these efforts to be lasting or are they interim measures? Why?

Targeted school improvement

12. Your school did not make AYP last year due to the performance of [insert name of subgroup]. Are any of the programs that you listed designed to address the needs of these students in particular?

13. *If yes:* When were these programs introduced? Were any introduced just this year? (focus on the new one).

If no: Are there particular programs introduced this year that you hope will help these students, among others?

14. Of these programs, which do you think is most important for the [name failing subgroup]?

15. Walk me though the process of choosing/designing this improvement strategy.

    a. Who (or what group of people) were responsible for choosing/designing?
    b. Were the programs generated by the school or district or by an external source?
    c. To what extent were teachers involved in the planning and development of initiatives?
    d. In the search for new solutions, what kind of information was taken into account?
    e. What other options, if any, did you consider?
    f. What input do you get from the district?

16. Was this selection process similar to the selection process for other initiatives that you have introduced in this school? How so?

17. Do you believe this program is a good fit for your school? Why or why not?

18. Who has been responsible for the implementation of this program?
    a. For the program to be effective, do teachers work independently or is collaboration required?

19. Is there any type of monitoring/evaluation going on in the school that looks at how the new strategies are being *implemented*? Please describe.

20. What successes and challenges have you experienced in implementing this program?
Probes:
    a. How have the teachers and staff reacted to this new program?
    b. Have there been unintended consequences of these targeted efforts?

21. How much of a departure from tradition is this for your school? Has your role changed?

22. Does your school receive outside help to implement this program? Does it need it?

23. Has the central office taken any special interest in this initiative or is their involvement similar with all of the improvement efforts that you undertake? If different, why?

<u>Resource Allocation</u>

24. Did the new program require additional resources?

25. Was the school allotted additional funds to pay for the new program?

26. (If no new funds were made available) What programs/areas were cut to free up funds for the new program?

27. Thinking again about *all* of the improvement efforts that you've introduced this year, has there been a reallocation of staff to implement these programs?

28. In general, has there been a district-wide reallocation of staff or funds to address schools with struggling students?

<u>Program Results</u>

29. Do you see any evidence that the changes made this year are affecting students? Please describe.

30. We hope to return to visit you and your school next year at about this time. Do you think that there will be other new programs that we will find in place next year? What?

<u>Final Question</u>

31. Next year, what would you expect us to see related to the program/s we've been discussing and the particular subgroup that missed making AYP?

32. Do you have any other comments regarding improvement strategies at your school? Is there anything you would like to add to what you have shared?

APPENDIX B: YEAR 2 PROTOCOL (PRINCIPAL/ADMIN/TEACHER)

<u>Introduction</u>

As you may remember, I am working with a team of researchers at the University of Pennsylvania and we are conducting a study of how schools across the Commonwealth of Pennsylvania are attempting to improve student performance. This is part of a federally-funded research program. This interview is part of the second (and final) year of data collection for the study. Your school was selected for this study based on a stratified random sample in combination with factors related to student performance and demographics.

Our conversation is confidential and will be combined with the interviews of others to produce an overall picture of schools across the study. I'd like to ask you to sign this consent form that explains a bit about the study and describes our commitment to keeping this conversation confidential, so we hope that you will feel comfortable being as candid as possible. Also, I'd like your permission to tape our conversation. No one other than the research time will have access to this recording but it will be helpful in our analysis of all the information we collect. Your participation is voluntary and you are free to stop at any time or skip any questions you choose not to answer.

<u>Background Questions</u>
1. (Although I know we spoke last year), could you please tell me (remind me of) your name and position in the school?

2. Has your role in the school changed at all over the past year (since we spoke last)? If so, how?

<u>General Goals</u>
3. Thinking back on this year, what were your personal goals as a [teacher/administrator/principal]?

4. Now thinking more broadly about the school as a whole, what would you say were your goals for the school? Do you think these goals are the same or different from those of your colleagues in the school? How are they the same or different?

5. What would you say is this school's mission or guiding principle? How did you first become familiar with the school's mission? How much (do you, does the principal) stress the importance of incorporating this mission into practice?
    (A mission can be set of instructional practices, an educational philosophy, a content area, vocational focus, etc.)

<u>Accountability</u>

6. We see that your school is [making AYP, in School Improvement] following last year when the school was in warning status. Given this change, how, if at all, have your goals for the school changed?

7. For Principal/Admin: How personally do you take the school's ability to make AYP?

   For Teachers: How personally do you take your students' performance on the PSSAs? How about your students' academic achievement aside from their PSSA performance?

8. Why do you think the school [failed to make, made] AYP this year?
   (What are the underlying reasons why this change took place?)

9. How has this change in the school's status affected your day-to-day job responsibilities, if at all?

Strategies for Improvement
10. When we spoke last year, you mentioned _____ as the major improvement effort(s) underway in the school. Are these efforts still in place? How are these efforts going?

11. What successes and challenges has the school faced in implementing these efforts?

12. Do you think the school will continue these efforts in future years? Why or why not?

13. If made AYP: To what extent, if at all, do you credit the school's success in making AYP this year to these efforts?

    If didn't make AYP: In light of the school's current difficulties, do you think that these strategies are appropriate? Are they helping the school to meet its accountability goals? Why or why not?

14. Did the school adopt any **new** strategies for improvement this year? What was the impetus for the adoption of this new strategy?
    (Was it adopted due to past PSSA performance?)
    (Probe for: Instruction, curriculum, organization, accountability, etc.)

15. Here is a list of areas that schools generally work in. Can you briefly describe your school's efforts in each of these areas, and state whether these efforts are causing student achievement to improve, decline, or stay the same?

a. Instruction
b. Curriculum
c. Organization
d. Remediation
e. Data Use
f. Accountability
g. Social Support

16. What do you think is the goal of the new strateg(ies)? Are they intended to target a particular group of students?

17. Thinking back on all the strategies you've mentioned – from both this year and last year – which would you say consume most of your attention and energy? Why is this?

18. Last year, your school did not make AYP due to the performance of the _____ subgroup. This year, that subgroup of students [is meeting its goals/ continues to not make AYP]. What specific activities are underway to address the needs of these students?

19. Do you think the new strategy is an effective approach? Does it fit well for your students? Why or why not?

Search and Decision-Making
20. (For Principals): Thinking back to this new strategy (or a strategy adopted last year), can you tell me how the school selected this particular strategy over other options?
   a. When did you start the process of searching for solutions? How long did the total process (from search to decision) take?
   b. How did you look for potential solutions? Where/who did you turn to for help in determining what your options were? Did you use school data to inform your search?
   c. What other options were on the table?
   d. What factors did you consider when choosing this strategy over others? How, if at all, did you use data to guide your decision-making?
   e. Who did you lean on for support and guidance during the decision-making process? Why did you lean on these people?
   f. Was the final decision a team decision or an individual decision? Explain.

21. (For Staff/Teachers): When the school decided to implement _____, how involved were you in the process?

   If involved: Use questions in #20

If not very involved:
   a. Would you have liked to be more a part of the decision-making process?
   b. Why do you think you were not more involved in the process?
   c. Was your experience with this decision-making process typical of how decisions are made in this school? How so?
   d. If you had an idea for a new improvement strategy for your school, do you feel that your views would be heard? What would the process be for making your idea a reality?

22. (For Teachers): Have you implemented any new improvement strategies in your classroom this year or last year? What are they?
    (If so, use prompts from #20)

23. When choosing a new strategy for (your classroom or) the school as a whole, how much does AYP and/or PSSA performance typically figure into the decision-making process?

Concluding Questions
24. In general, would you say that student achievement at this school is improving, declining, or staying the same? Why do you think this is the case? Please explain.

25. Do you think that the school will meet its NCLB goals next year? Why or why not?

26. Do you have any other comments regarding improvement strategies at your school? Is there anything you would like to add that what you have shared?

APPENDIX C: YEAR 3 PROTOCOL (DISTRICT PERSONNEL)

Introduction:
I am a student at the University of Pennsylvania and I am conducting a study of how schools and school districts in Pennsylvania are attempting to improve student performance. Specifically, I will ask questions about how your district makes decisions regarding new improvement programs and strategies. Your school district was selected for this study because researchers at the University of Pennsylvania (including myself) had previously visited a school in your district to discuss student achievement efforts. This study is a continuation of that previous study, and our questions will be in reference to the school that was previously visited.

Our conversation is confidential and will be combined with the interviews of others to produce an overall picture of schools and school districts across the study. Also, I'd like your permission to tape our conversation. No one other than myself and my research advisor will have access to this recording, but it will be helpful in our analysis of all the information I collect. Your participation is voluntary and you are free to stop at any time or skip any questions you choose not to answer.

Introduction Questions
1. Two years ago, [school] was labeled in "warning" for not making AYP. Were you working at the District at the time? If so, what did you perceive to be the main reasons why the school did not make AYP that year?

   Probe for:
   a. Resource and funding challenges
   b. Curriculum and instruction challenges
   c. School climate/community challenges
   d. Policy and politics challenges

2. In response to the school's "warning" status classification, can you recall what were the main programs or strategies adopted to improve performance in the school?

3. If you can, walk me through how the decision was made to select [choose one strategy/program to focus on] as a new strategy or program for the school.

Specific Search Questions
Still keeping in mind the decision to adopt [program or strategy], I'd like to ask some questions about the search process.

4. Who is responsible for searching for new programs and strategies? What role do you play in this process?

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5. What were the most important factors under consideration when the district gathered information on [program or strategy]? In other words, what were you searching for?

    a. How many options were on the table? Were any of the potential options piloted in any schools or classrooms?

    b. How did the district use data to support the search process?

    c. To what extent was your search guided by federal or state accountability policies? (AYP subgroups, anchors, Getting Results document, etc.)

    d. Were there any frameworks or protocols in place to help guide the search process?

6. There are many resources out there for districts that are searching for new strategies for the school. When searching for [program or strategy], what sort of technical or professional resources did the district use most? Why was this?

    Probe for:
    a. Research (WhatWorks Clearinghouse, professional associations, Ed Week, etc.)
    b. PA Dept of Education or Intermediate Units
    c. Professional development (seminars, conferences, materials, etc.)
    d. PA's Standards-Aligned System (SAS)
    e. Vendors

7. Another common source of information is people. When searching for [program or strategy], who did the district lean on for support?

    Probe for:
    a. "Word of mouth" recommendations (colleagues, family, friends, etc.)
    b. Involvement of school-level personnel (principal, teachers, support staff)
    c. PA Dept of Education or Intermediate Unit staff

8. Of these two sources of information – technical resources and what I'll call "personal resources" – which do you trust the most? Why?

9. What factors do you think constrained the search process for [program or strategy] at the district level?

Probe for:
   a. Time constraints
   b. Access to resources
   c. Human capital
   d. Political constraints

10. Why and how was [program or strategy] ultimately selected for the district/school?

11. Was the search process for [program or strategy] typical for the district? Why or why not?

Concluding Questions

12. The classic model of decision-making has 4 steps: Problem identification, search for solutions, decision, and implementation. We will set aside implementation, as that's a whole other can of worms. Of the first three, however, where do you think the district spends most of its efforts? Why?

    Definitions:

    a. Problem identification – An issue that is identified by at least one of the following sources: AYP status, data review, board or superintendent directed initiative, school-level initiative, or parent complaints.

    b. Search – Any action taken for the purpose of putting options on the table. May include technical/professional resources, human/personal resources, piloting, etc.

    c. Decision – The process surrounding the selection of a new program or strategy, which may involve committee selection, the recommendation of the new program or strategy to the board, and board/district/school action.

13. In terms of the search process, what do you think the district does well? Where could it improve?

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