

# Accessing, Documenting and Communicating Practical Wisdom: The *Phronesis* of School Leadership Practice<sup>1</sup>

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Successful school leaders rely on a complex blend of knowledge, skill, theory, disposition and values in their work to improve student learning. Recent research has called for methods to access, represent and communicate what successful school leaders know. Aristotle's concept of *phronesis*, or practical wisdom, captures the scope of such knowledge but also points out the difficulties of representing practical knowledge apart from the context of exercise. This paper argues that the *artifacts*, such as policies, programs, and procedures that school leaders develop and use can serve as occasions to document the expression of *phronesis* in context. Developing *phronetic narratives* of how successful leaders use artifacts to establish the conditions for improving student learning provides a significant resource to guide the learning of aspiring school leaders.

School leaders are faced with the complex task of constructing and maintaining conditions to improve student learning within existing school systems. Creating the conditions for intentional change in such dynamic yet bounded contexts requires different kinds of knowledge and ability (see, for example, Merseth 1991). Policy makers, program designers, professional organizations and educational researchers each contribute different aspects of the knowledge necessary for local school leaders to improve student learning. Policy makers, for example, create expectations, guidelines, and resources to direct local education efforts. Program designers cull together packages of techniques and procedures designed to further educational goals. Researchers often consider what happens as a result of the intervention, providing valuable feedback on what did and did not go right. Each kind of knowledge is critical to creating conditions to improve learning for students. However, there is another crucial kind of “practical”

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knowledge necessary for school leaders to pull these kinds of knowledge together. The knowledge of how to apply general principles, generic tools, or wide-scale evaluation information to the idiosyncrasies of particular contexts constitutes a separate, and often under explored realm of leadership knowledge.

While the idiosyncrasies of each school may be safely ignored or bracketed away from a policy, program, or evaluation perspective, establishing the conditions for improving student learning amidst these idiosyncrasies is the primary work of local school leaders. Successful school leaders rely on their sense of the local particulars to determine, for example, which teachers have prior experience teaching special education, which librarians are related to board members, which children lack supportive families, and which policies can be safely ignored. As a result of experience and reflection, successful leaders use their sense of the details to “see” the problems of their schools as solvable within local constraints, and are able to develop successful action plans to address problems. Over time, the patterns of how successful leaders recognize and solve problems come to constitute the professional expertise of these school leaders.

Accessing how school leaders manage school change calls for a new approach to research that emphasizes how leaders manage the complexities of particulars in order to implement innovative practices. Hiebert, Gallimore and Stigler (2002) remind us of the need for a practice-based knowledge base for teaching, grounded in documenting and communicating what teachers know, in order to effect instructional change in schools. They argue that the knowledge produced by researchers, while reliable, often has little influence on teaching practice, while the “craft” knowledge used by teachers often lacks principled methods for conversion into a trustworthy knowledge base (see also Cochran-

Smith and Lytle 1999, Richardson 1994). The need for a useful, principled professional knowledge base grounded in the particulars of practice is felt in educational leadership as well. Willower's account of Dewey's theory of valuation in educational administration, for example, notes how scientific and critical theorists alike overlook Dewey's reminder to attend to the particulars in understanding administrative practice (Willower 1994). Developing such a knowledge base is difficult, however, because of the particular nature of practical knowledge. While policy, technical, and evaluative knowledge aim at generalizable insights, practical knowledge lives in the particularity of local circumstance and is thus restricted to those with access to these particulars.

Aristotle's concept of *phronesis*, or practical wisdom, provides a framework for accessing and communicating how practitioners understand and apply consequentially derived principles within the context of practice (Aristotle 1941, p. 1026). The significance of *phronesis* in understanding Aristotle's ethical work has historically formed a distinguished undercurrent, and has emerged as a key aspect of contemporary readings of Aristotle by authors such as Gadamer, Arendt and Habermas (Dunne 1993). *Phronesis* is the experiential knowledge, embedded in character, used by individuals to determine and follow courses of intentional action. *Phronesis* is an essentially moral form of knowledge, guided by the habits of virtue that come to form character (Aristotle 1941, Flyvbjerg 2001, Gadamer 1989). Our moral commitments are disclosed by the situations we identify as worthy of note and the agendas we pursue in the course of our lives. Over time, Aristotle uses a visual metaphor to explain how individuals acquire an "eye" to identify certain kinds of situations as worthy of action, and are able to develop courses of action that satisfactorily address these situations (Aristotle p. 1033, Dunne

1993). I argue that the development of this “*phronetic eye*” is a good metaphorical description for the kinds of habits successful school leaders develop to know, and a good general description of what aspiring school leaders need to acquire.

This paper builds upon Aristotle’s concept of *phronesis* to develop a framework for accessing, representing and sharing the practical wisdom of school leaders. I argue that an analysis of Aristotle’s concepts of *phronesis*, *episteme*, *techne*, and *artifacts* points the way toward developing conceptual and methodological tools to construct principled representations of practical wisdom. My argument will show how *phronesis* provides a kind of executive function, resulting from habitual action and embedded in character, that helps leaders to determine which techniques we will (and can) use, which theories are appropriate, and what are the significant consequences of our actions. From the perspective of practice, the tools or *artifacts* that leaders develop and use, such as policies, programs and procedures, can serve as an occasion to consider how practitioners use *phronesis*. Thus even though *phronesis* itself may be exhausted in action, research designed to follow the residual traces of *phronesis* through artifact creation and design can provide valuable insight into the practical wisdom of school leaders.

### Understanding *Phronesis*

Practical wisdom is difficult to study. This may be because, as a comprehensive human capacity, practical wisdom bridges our conventional categories of cognition, affect and behavior, indicating a way of life difficult to discern in isolated actions or propositions (Sternberg 1990). It also may be because, as a hard-won reward for a life well lived, it is simply not available to those who have not developed similar capacities. In the *Nicomachean Ethics*, (Aristotle 1941 p. 1024-1027) suggests that there are three

kinds of knowledge associated with wisdom: *episteme*, *techne* and *phronesis*.

Theoretical wisdom is based on *episteme*, the kind of knowledge expressed in propositions true across particular contexts. *Episteme* is both necessary and universal; it can be represented apart from the knower, codified into systems of thought, and leads to reproducible effects under similar circumstances. *Techne* refers to the knowledge of making, ranging from the arts of construction to the creation of states of affairs (Dunne 1993). Technical knowledge, expressed through routines and procedures, shares with epistemic knowledge the ability of the knower to move from the particular to the general. A good technique captures a reproducible procedure that will lead to predictable results despite variations in context.

*Phronesis*, or practical wisdom concerns how individuals act based on their interpretation of contextual particulars (Aristotle p. 1026-1032). The aim of *phronesis* is not to develop rules or techniques true for all circumstances, but to adjust knowledge to the peculiarity of local circumstance. Dunne (1993) describes how “*phronesis* is characterized as much by a perceptiveness with regard to concrete particulars as by a knowledge of universal principals” (p. 272). *Phronesis* is as much a way of knowing as a kind of knowledge. Embodied in character and developed through habit, it is expressed through particular actions as how individuals “size up” a situation and develop and execute an appropriate plan of action. *Phronesis* is, above all, a form of moral knowledge that guides us in selecting the features of situations that we choose to act upon (Gadamer 1989 p. 316-320).

Investigations of the conceptual terrain laid out by Aristotle’s concept of practical wisdom has served as a continuing theme in recent philosophical investigations (See, for

example, Arendt 1958, Dunne 1993, Gadamer 1989, Habermas 1984, MacIntyre 1981 and Nussbaum 1986). In many of these discussions, *phronesis* plays a role in the great epistemological discussions of the 20<sup>th</sup> century by pointing to a kind of non-theoretical yet principled form of ethical knowing that provides a viable alternative to the scientific reduction of “real” knowledge to objective theory and technique. In educational research, *phronesis* has been called on for more practical purposes, to name a model for the comprehensive capacity that integrates knowledge, judgment, understanding, and intuition in order to effect appropriate and successful action (Coulter and Wiens 2002, Kessels and Korthagen 1996, Korthagen and Kessels 1999). The cumulative effect of these discussions point out the misfit between our conventional understanding of theoretical and technical truth as objective with our more tacit understanding of practical knowledge as case-based, customized to particular contexts and measured by individual effect.

Aristotle’s description of the distinctions between *episteme* and *techne* on the one hand, and *phronesis* on the other, causes problems for researchers interested in studying practical wisdom. While *episteme* and *techne* can be represented apart from action through propositions and procedures, *phronesis* can only be represented through the actions that flow from the character of individuals. In other words, the connection between *phronesis*, character and particular situations prevents the development of *phronetic* theory because any representation of *phronesis* must include an account the particulars that shift with every exercise of practical wisdom. Transforming *phronesis* into *episteme* makes the representation lifeless and useless. The challenge for research dedicated to *phronesis* is to uncover the rhythms of the practices of interested

practitioners, represent those practices in ways that are accessible to other practitioners, and to develop better ways to communicate good practice. In order to learn *phronesis*, we must be able to see it in action.

The following sections will explore the different dimensions of *phronesis* relevant to school leadership. First, I will explore the cognitive aspects of *phronesis*, which are closely related the concept of problem-setting from current expertise research. *Phronesis* is expressed mainly through patterns in our abilities to frame and solve problems. The relation of *phronesis* to *episteme*, however, suggests that *phronesis* is a necessary condition for the application of an expert problem-setting schema and cannot itself be reduced to a set of rules. Second, I will consider how *phronesis* extends beyond determining individual self-interest to the capacity to lead a community. Recent research in distributed cognition and leadership suggest that the many leaders in an organization may have a collective *phronesis*, and that the perceived structures of the organization helps to shape the problems leaders are able to notice and the solutions they are able to offer. Finally, *phronesis* necessarily flows from a vision of the good. Our ability to set problems is developed, over time, by our experiences and stored in character as a form of moral knowledge. While we may be able to articulate this knowledge as a code of behavior, the confrontation with particulars will always force us to adapt what we know to what we find.

### *Phronesis and expertise*

*Phronesis* research finds contemporary expression in recent investigations into expertise. The cognitive, problem-solving aspect of *phronesis* is suggested by the Aristotelian concept of the practical syllogism. The Aristotelian syllogism, in its simplest

sense, consists of three parts: a *major premise* which expresses a universal rule, a *minor premise* which constrains a description of a particular event, fact or action, and a *conclusion* which establishes the event or fact as an instance of the rule. The conclusion of a practical syllogism, however, is an action rather than a proposition. While a rule-based theory of morality suggests that action is primarily governed by the major, universal premise, from the perspective of *phronesis* the determination of the minor premise is the critical first step (Dunne 1993, p. 296-7). Because *phronesis* consists of the ability to perceive and select the minor premises that lead to effective action, practical wisdom itself cannot be explained in terms of a rule-system. *Phronesis* is the capacity to select which rules are appropriate for a given situation.

This apperceptive, or “seeing-as” aspect of *phronesis* is akin to the idea of problem setting or problem-finding in expertise research. Problem-setting is a cognitive activity in which actors select relevant situational features as worthy of notice, action, or contemplation (Arlin 1990). Simon (1983) claimed “much problem-solving effort is directed at structuring problems, and only a fraction of it in solving problems once they are structured” (p. 394). In other words, most of problem-solving is problem-setting. Experienced practitioners develop mental models that, over time, influence the kinds of problems they are able to notice and act upon. Expertise research has focused on the composition of mental models and regularities of such models across experts. Expert knowledge is organized, or “conditionalized,” in terms of these models such that it can be fluently activated in the appropriate context (Glaser 1992, Simon 1980). Mental models enable experts to reduce the noise of perception, focus on the salient characteristics and develop appropriate action plans. While these models include general rules and

techniques, Zeitz (1997) argues they also include “moderately abstract conceptual representations” that customize more abstract rules to specific contexts. Experts are able to use their models to understand the nuances of situations lost on novices and to recognize emergent opportunities for action in complex situations (Siefert, et. al. 1997).

In their study of the problem-solving abilities of school principals, Leithwood and Stager (1989) suggest that situation recognition is a key difference between expert and novice leaders – experts recognize situations as problems that can be addressed with a combination of problem-solving procedures, whereas novice leaders are not as adept at bringing problem-framing and -solving procedures to bear on complex situations. Expert leaders simultaneously satisfy multiple goals in the ways they frame problems, are able to articulate clear, reasonable plans of action, and usually remain open to multiple solution paths even within the constraints of the problem (Leithwood, Begley and Cousins 1992). Expert school leaders understand the importance of having and sharing a clear interpretation of the problem that can be explained and rationalized to others (Leithwood, Begley and Cousins 1992). The ability to make problem-setting visible to followers is a key aspect of helping others understand the rationale of leadership practice.

Although expertise research helps to understand the cognitive aspects of *phronesis*, the effort to reconstruct mental models and to describe characteristics of experts across context misses the active, particular nature of *phronetic* expression. *Phronesis* guides problem-setting and the problem-solving, integrating apperception, judgment, choice, planning, and action in a single continuous arc. Dreyfus and Dreyfus (1986) describe how the action of virtuoso performers appears seamless both from the perspective of observers and the actors themselves (p. 38). The ability to follow or to

articulate a rule-based system for action, they argue, seems to be a characteristic of novice or competent, rather than expert, performance. The distinguishing characteristic of *phronesis* is the ability to effectively size up novel situations that cannot, by definition, be specified in advance. Virtuoso performers recognize when the rules of typical performance apply, which rules to select, and when the rules should be discarded or reformed in light of emergent circumstances. Schon (1983) demonstrates how expert architecture teachers simultaneously adjust their knowledge to the characteristics of the situation and to the needs of their students. Describing what such teachers know and the rules for applying what they know does not fully capture their practical wisdom. The exercise of mental models rests on a prior, active form of knowledge that understands which aspects of the model apply and when to apply them.

#### *Phronesis and leadership*

While most of Aristotle's discussion of *phronesis* is described in terms of individuals pursuing personal goods, he also suggests that it is appropriate to consider the *phronesis* of the statesman directed toward the good of the community (Aristotle p. 1029). Aristotle describes a political form of *phronesis* through which actors aim toward the good of a community:

(I)t is for this reason that we think Pericles and men like him have practical wisdom, viz. because they can see what is good for themselves and what is good for men in general; we consider that those can do this who are good at managing households or states (p. 1029).

Political *phronesis* is the ability to "deliberate well about what is good and expedient" and to act accordingly for the good of a community or state (Aristotle p. 1026).

Aristotle's distinction between political and practical wisdom allows us to consider the community as a unit of analysis for leadership just as the individual is the unit of analysis for personal action.

There is an essential difference, however, between political and personal *phronesis*. Personal *phronesis* guides action in the interest of the self, while in political *phronesis*, leaders pursue the good for those they lead. Just as the good of the individual is the goal of personal *phronesis*, the good of the community is the goal of a political *phronesis*. The other-directed nature of political *phronesis* requires leaders to balance their personal goods with the good of the community. Yet leaders must act for the community in terms of the goods they perceive, in other words, through their personal *phronesis*. The personal values and commitments of leaders shape actions for the sake of the community in subtle ways. For example, in hiring new teachers school leaders must balance their instincts for what makes an effective teacher with the needs of the school and the opinions of colleagues. The seemingly effortless integration of political and personal *phronesis* in expert practice is a characteristic of virtuoso performance (Dreyfus and Dreyfus 1986).

The distinction between political and personal *phronesis* also suggests that the practical wisdom of leadership may be distributed in a community. Even though Aristotle focuses on the *phronesis* of the single statesman, most contemporary organizations receive leadership from multiple positional and informal actors. In schools, despite the research bias to locate leadership in the school principal, positional and informal leaders often work together (or against one another) to influence the direction of the school. Recent work in distributed leadership suggests that leadership flows through

organizations in the form of tasks engaged by any number of community participants (Ogawa and Bossert 1995, Spillane, Halverson and Diamond 2003). The tasks of instructional leadership include, for example, monitoring instruction, organizing and developing curriculum, acquiring and allocating resources, and constructing an instructional vision for the school. The combined *phronesis* of formal and informal leaders in the school determines how these tasks are framed and executed. The structures of the organization also form an important constraint for practical wisdom in organizations. Structures composed of prior policy initiatives and programs help to determine how tasks are constructed and enacted. For example, prior teaching evaluation policies that emphasized limited involvement in classroom practice can heavily influence the implementation of new, more invasive policies (Halverson, Kelley and Kimball 2004). The social and situational distribution of leadership practice suggests how we might consider *phronesis* as more than the possession of a particular individual.

#### *Phronesis, character and morality*

For Aristotle, *phronesis* is embodied in character. Aristotelian ethics emphasizes that virtuous action is more than merely an ability to act upon the appropriate rule – character determines our ability to recognize the situations for selecting the right rule. Our character represents the individual network of habits we acquire through training and through subsequent experience that determine our ability to act virtuously. In Aristotle's terms, the processes of deliberation, choice and action must be explicitly learned and practiced at first, then through experience become habits of character that are simply manifested in action. *Phronesis* represents the accumulated wisdom, embodied in character, which helps us to determine which action is worth taking in a given situation.

*Phronesis* comprises the moral compass of our character. As Gadamer (1989) describes, *phronesis* is not “at our disposal” in the same way that techniques are at the disposal of the craftsman (p. 316). We are our *phronesis* in a way that we cannot separate ourselves from our knowledge.

The values that guide action play a critical role in problem-setting and problem-solving. While prior research on leadership expertise has treated values as part of the context of practice (e.g. Leithwood and Stager 1989), a *phronesis*-based account emphasizes how the values of leaders constitute the kinds of problems recognized as worth solving, and how the value commitments of leaders can be studied as they are disclosed in practice. The problems leaders are able to identify depend in large part on the lived values that guide their professional knowledge. For example, some leaders choose to spend time supervising lunchrooms, reviewing bulletin boards or enforcing dress code policies, others tackle why, despite considerable efforts at curriculum and professional development, achievement gaps continue to plague student learning. Focusing attention on challenging or maintaining status quo conditions is itself a moral act, and the underlying moral commitments are disclosed through these actions. This is not to say that managing the day-to-day functions of schools is not a critical task for school leaders, but it does suggest that the moral commitments of leaders can be discerned through the ways they organize daily practice.

Aristotle’s concept of *phronesis* rests on a vision of moral clarity that allows him to discuss quality of character as virtuous or vicious. Our prevailing moral pluralism and our competing goals for schooling make contemporary agreement on the quality of leadership *phronesis* unlikely. Still, much of our disagreement on the moral

commitments of school leadership rests on our difficulties with untangling espoused morality from moral theories-in-use (Argyris and Schon 1978). The political conditions of schooling may actually encourage leaders to maintain a gap between what is said and what is done, for example, to create a “logic of confidence” that limits public inspection of instructional practices (Elmore 2000, Rowan and Meyer 1977). Discussions of morality and school leadership seem perpetually bogged down in the political trade-offs and concessions of the work.

A *phronesis*-based perspective on school leadership focuses on the patterns of values expressed in action. Since the perception and solutions of the problems of practice involve trade-offs and selective perception, the values that guide action seldom result in clear, unambiguous moral statements. Practical wisdom exists precisely in this space of fitting principles to particulars. Careful analysis of the patterns of routine, day-to-day actions can show how experienced school leaders display their commitment to student respect, care and personal integrity. (For an excellent example of how practice discloses everyday moral commitments, see Lee 1987). The cases of school leaders who are able to successfully challenge and change unjust conditions of student learning are worth investigating in detail to disclose the knowledge, skills and resources used by these school leaders to navigated the constraints and obstacles that thwart other well-intentioned leaders. Thus even through we may never come to agreement on the correct definition of justice, goodness or equity in schools, considering *phronesis* from the perspective of practice over time can tell us something concrete about the characteristic values that guide the expert practitioner. In other words, *phronetic* research can show

how expert leaders disclose morality through their everyday actions in ways that might otherwise remain obscured.

### Accessing *Phronesis*

Accessing and communicating *phronesis* has proven a difficult task for researchers and practitioners alike. Even though *phronesis* is expressed through action, it is difficult to infer the nature of *phronesis* through any given action. Taken out of context, the motives or values of any action are open to speculation. To researchers, the practices of school leaders can appear fragmented, disconnected and reactive to emergent situations (Lee 1987, Peterson 1977). Simply sampling the practices of school leader in order to reconstruct the wisdom of practice runs the risk of missing the *phronesis* altogether. Constructing methods to capture the sense of practice has been a dominant theme of ethnographic research for decades (see, for example, Geertz 1973; Lincoln and Guba 1985). Thick descriptions of context, for example, allow readers to situate complex practices in local contexts. Still, the ethnographic researcher must decide which practices to note when constructing a thick description.

Aristotle's discussion of the kinds of knowledge involved in practice points toward an organizing structure for accessing the *phronesis* of school leadership. Aristotle's contrast of *phronesis* on one side and *techne* and *episteme* on the other belies a necessary relation of the different kinds of knowledge in practice. Dunne's (1993) analysis suggests that there is a hierarchical dependence between *phronesis*, *episteme* and *techne* such that the selection and use of *techne* and *episteme* in practice requires the development of *phronesis*. "The crucial thing about *phronesis*, however, is its attunement of the universal (*epistemic*) knowledge and the techniques (*techne*) to the particular

occasion” (Dunne p. 368). *Phronesis* acts as an executive faculty that identifies which aspects of the environment are worthy of action, employs the appropriate means, and evaluates the results. Much instructional leadership involves the application of techniques in collaborative program design in developing formative evaluation systems, and school-wide planning practices to produce improvements in teaching and learning. The *phronesis* of leadership guides how and when these *technai* are used, how theories need to be adapted to practice, and is able to evaluate when these tools have done their work properly.

#### *Phronesis and artifacts*

The development and use of artifacts can play a crucial role in tracking the expression of *phronesis*. Artisans not only develop artifacts as a result of their work, they also use artifacts (designed by themselves and by others) to complete their work. Some artifacts are material things, such as shoes and can openers; others are more abstract creations such as time schedules and plans. School leaders work with abstract artifacts such as programs, policies and procedures the way painters work with brushes, canvasses and palettes. Artifacts are the tools leaders use to establish structures for shaping social interactions, work practices and learning in schools. Leaders use artifacts such as curriculum, assessments and professional development programs to improve student learning; spreadsheets and financial statements to balance budgets; and newsletters and public meetings to enhance school-community relations.

For Aristotle, an artifact incarnates the intention of its designer in the form given to raw material (Aristotle p. 236-238; 555-556). In material artifacts, intentions are built into formal qualities exhibited by the shape or the structure of the artifact; for more

abstract artifacts, such as policies or programs, features are designed into the provisions, structures and incentive systems of the artifact. Contemporary accounts of artifacts in cognitive psychology expand on Aristotle's insight of how artifacts provide externalized representations of intention. Wartofsky (1973) notes how artifacts are "already invested with cognitive and affective content" (p. 204). Simon (1996) describes how artifacts provide an interface between the inner life and the outer world. For Simon, our cognitive inner lives include plans, intentions, goals and strategies that we hope to fulfill in our interactions with the world. Artifacts are designed to help us to reduce the perceptual noise of the world by directing us to the aspects of our world we are to notice and name. Research in distributed cognition emphasizes that people not only use artifacts, but also that that it is impossible to understand complex practices without reference to artifacts (Salomon and Perkins 1993). Cognitive artifacts, such as computers, cameras, and paper are used to extend the range of thinking and action (Norman 1991). Hutchins (1995) highlights how cognitive artifacts, such as airplane instrumentation, off-load and refine information-processing tasks enabling practitioners to focus attention on discretionary and judgment tasks. Analyzing cognitive processes without the addressing the role of constituting artifacts is a fruitless path for investigating practical wisdom.

Designed artifacts are built to influence practice in certain ways. This connection between design and intention provides an interesting path for investigating practical wisdom. Archeologists have long relied on their ability to analyze the designed features of artifacts to reveal the intentions for use and the anticipated effects built in by the designer. Artifact features illustrate a remnant of how designers framed the problems users were likely to face and suggested possible solutions. Artifact analysis shows how

designers selected, valued and used technical and theoretical knowledge to guide the practice of others. Artifacts, however, have several limitations for analysis. For example, leaders often alter or selectively implement policy features in order to shape artifacts to the needs of local context. Adapting complex, abstract artifacts to local conditions is itself a kind of design process through which practitioners express their intentions for practice. Thus we can gain insight into the practical wisdom of school leaders by investigating artifact implementation as well as design.

In schools, the origin of an artifact influences how it is regarded by local actors (Halverson 2002, 2003). *Locally designed artifacts* address emergent acute and chronic concerns in the school. Local leaders design artifacts such as fire drill policies or appropriate use policies for Internet browsing to instantiate assumptions about proper conduct and provide incentives to shape appropriate behavior (Cole and Engeström 1993). Locally designed curricula and the daily school bell schedule institute procedures that routinize the practices of teaching and learning around intended goals. The idiosyncrasies of local circumstance often make it difficult to replicate the effects of locally designed artifacts in new contexts. *Received artifacts* are imported into the local context. Examples of received artifacts include textbooks, curricula, assessment policies, budgeting and planning tools. These artifacts are received from identifiable external sources, such as state and district authorities, teacher unions, textbook and curriculum publishers, or professional development providers. Even though local leaders are not responsible for the design of received artifacts, their responsibility for artifact implementation and maintenance often results in significant adaptation of artifact

functions. Using either kind of artifact as an occasion for *phronetic* analysis helps reveal the assumptions and values leaders make about their practice.

Emphasizing the critical role of artifacts in understanding *phronesis* should not lead us to overestimate the power of artifacts. Researchers have shown that the development and distribution of complex artifacts to promote structural changes alone does not of itself lead to instructional change (Cohen and Hill 2001, Elmore, Peterson and McCarthy 1996). Research from hermeneutics to policy implementation demonstrates how the meaning of an artifact depends on how it is interpreted as much as on how it is designed (c.f. Dennett 1990, Gadamer 1989, McLaughlin 1980). Just as the communication of an author's intent depends upon the interpretative frame of the reader, the adaptation and use of an artifact is guided by the *phronesis* of a practitioner. Artifact interpretation is guided by which artifact features are perceived by practitioners as *affordances* for action (Norman 1993, Reed and Jones 1982). Affordances reflect an actor's assumptions of how an artifact might be used in a local context. The actual use of a received artifact depends on which features are perceived as affordances by actors. For example, recent discussions of sensemaking in policy implementation illustrate how practitioners select affordances based on prior experience and knowledge (Spillane, Reiser & Reimer 2002, Starbuck & Milliken 1988, Weick 1996). Spillane's (2000) work shows how district leaders implemented mathematics policy artifacts according to their prior understanding. District leaders attended to artifact features that cut across subject matters, but largely ignored the discipline-specific features that might have led to real changes in teaching and learning. Few leaders constructed understandings consistent with the intended reform features of the artifact, instead focusing on the affordances

consistent with what their districts were already doing. A cognitive analysis of implementation shows how the prior knowledge and assumptions determines the range of affordances perceived by local actors and, in turn, the features of the artifacts implemented.

A rich example of how leaders select, ignore or subvert artifact features in policy implementation is provided by recent efforts to reform local school practices through high-stakes accountability programs. Some school leaders have been accused of using existing artifacts, such as special education programs and expulsion policies, to improve test scores by restricting the number of students who take the test (Amrein and Berliner 2002). Analyzing how these leaders used existing artifacts reveals how the tests were interpreted in terms of compliance with state standards and shows the moral commitments made by these leaders toward the education of their students. Other school leaders have responded to the demand for increased accountability by constructing intermediate local assessment systems that allow teachers to understand state test score results in terms of the local formative and summative testing practices (Black and Wiliam 1998, Halverson 2002). Analysis of these intermediate assessment artifacts shows how leaders can understand the academic press of standardized test scores in terms of building local professional development, curriculum and planning artifacts that help teachers systematically rethink practice (Halverson 2002, 2003). Rather than complying or even evading the press to change teaching, these artifacts demonstrate the commitment of leaders to working with what they have to improve student learning (Capper, Halverson and Rah 2003). A *phronetic* perspective on artifact development and use emphasizes how leaders create and manipulate multiple artifacts to produce intended effects. Using

school artifacts as occasions for analysis can show how school leaders intentionally create systemic, amplifying effects on student learning, and can provide insight into how leaders demonstrate their professional commitments in action (Halverson 2003).

### Communicating *Phronesis*

Artifact-based narratives of *phronesis* open new possibilities for researchers and practitioners in communicating practical wisdom. In *Making Social Science Matter*, Flyvbjerg (2003) argues for rebuilding social science inquiry in order to access and communicate *phronesis*. Concentrating on *phronesis* allows us to attend to the contextual and value-laden knowledge that guides the work of experienced professionals. Flyvbjerg describes how a “*phronetic* social science” grounded in local, context-narratives, allows us to consider how practical knowledge both responds to and constructs the particulars of the situation (p. 129). Artifact-based narratives illustrate how *phronesis* is found in the details of the case itself, in the ways practitioners’ frame and solve specific problems, set goals and make value commitments in practice. In the following section I argue that such narratives provide the appropriate medium to capture *phronesis*, how these “*phronetic* narratives” might be constructed, and conclude by considering an example of what a narrative constructed to reveal *phronesis* might look like in practice.

### *Narrative and practical wisdom*

Acquiring *phronesis* has long meant prolonged social interaction with those recognized as possessing practice wisdom. The ancient learning arrangements of mentoring and apprenticeship have successfully passed on technical knowledge and practical wisdom to new generations. Recent interest in communities of practice, cognitive apprenticeship and teacher mentoring point to how participation in social

networks with accomplished practitioners can help novices learn the nuances of expertise (Collins, Brown and Newman 1989, Fieman-Nemser, Parker and Zeichner 1993, Lave and Wenger 1991, Wenger 1998). However, relying on these complex social networks to communicate *phronesis* is expensive, exclusive and uncertain. Participating in apprentice and mentoring relationships takes time and resources. Even peripheral participation in exclusive networks requires conditions of access, such as admission to prestigious schools or employment in successful enterprises, which are denied to many interested learners. Finally, since most practitioners learn from their social networks regardless of colleague quality, mentoring relationships with bitter or subversive colleagues can serve to teach all the wrong things to aspiring school leaders. Elmore (2000) notes that since most school leaders are products of the system they lead, relying on the social networks that perpetuate the current norms of schooling may work against change to recreate prior conditions of practice. Many schools teach aspiring leaders to learn the hard lessons of survival at the expense of the hope, the desire and the ability to make changes in the conditions of student learning. The conservative and potentially subversive nature of learning in practitioner-directed social networks has provided the prime motive for creating an objective, research-driven knowledge base for educational leadership.

Constructing *phronesis*-based narratives can point to how researchers might help direct and refine learning through participation in social networks. Narrative reasoning, which portrays the temporal and sequential nature of practice, is the form of thinking people use to make sense of their world (Bruner 1986). Narrative research attempts to enfold the crucial aspects of practice in the retelling of the story. A coherent narrative preserves temporal sequence and contextual priorities, providing intelligible cues for the

recollection of practical wisdom and situating resultant actions in authentic contexts accessible to similarly situated practitioners. Hearing well-constructed stories puts hearers in the flow of events, making complex chains of reasoning and action accessible through instantiation in a particular context.

In traditional social science research, case studies have long been used as the primary medium for using narratives to show how practices are embedded in local contexts (Ragin and Becker 1992, Stake 1995, Yin 2002). Yet case studies that focus on tracing a specific path through complex circumstances can risk objectifying exemplary practices. Objectified case narratives present the details of the case context after the problem has already been framed, obscuring viable, alternative problem-settings that may have been considered and passed over by practitioners. Concentrating on the particulars of exemplary practice, as with case studies or in portraiture (e.g. Lawrence-Lightfoot and Hoffman 1997), risks glorifying the practitioner without making wisdom accessible. Revealing the reasons for and against choosing alternative paths is critical for accessing how experts negotiate complex organizational systems.

Artifact-based *phronetic* cases can provide a special subset of case studies. Flyvbjerg (2001) suggests that *phronetic* cases focus on how values are lived and expressed in situations. He contrasts ethics with morality to highlight how *phronetic* cases show value commitments lived in daily practice rather than formalized into general moral rules. “Emphasizing the little things,” allow us to see how practitioners live their values in actual contexts that force compromise, trade-offs and the re-evaluation of priorities. Showing the practical trade-offs of situational ethics can prompt case readers to reflect on how their own values are reflected in their actions. Flyvbjerg describes how

*phronetic* cases “look at practice before discourse,” (p. 134) that is, to focus first on what people do, then on what they say they do. Capturing practice before discourse allows practitioners to reflect on possible differences between their espoused theories and their “theories-in-action,” and to include this reflective practice in the construction of a case (Argyris and Schon 1978, Schon 1983). Capturing the relation of espoused theories and theories in action shows how *phronetic* cases can provide powerful learning opportunities for practitioners whose practice is represented as well as for outside audiences.

Flyvbjerg also notes the historical importance of cases. Case-based accounts of *phronesis* rely on the historical reconstruction of action to show how practices unfolded over time. Historical narratives are essential to understand how complex systems appear to practitioners. Juarrero (1999) argues that it is impossible to understand the dynamism of a complex system from studying either the initial conditions or the system outputs. Because “each run of a complex system is unique,” (Juarrero 1999, p. 220) the best way to understand system organization is to trace multiple, individual paths through by showing how the same practitioners set and solve different problems and how different practitioners set and solve similar problems. Tracing multiple paths through local situations cannot hope to specify all possible aspects of system component interaction, but can help to highlight how practitioners size up and act upon the presenting characteristics of the system. *Phronetic* narratives can show how practitioners adjust what they know and want to the perceived constraints of the situation, and how their actions flow from their perception of the problem.

*Artifacts as the basis for phronetic narratives*

Building narratives to reconstruct *phronesis* presents certain difficulties. The artifact-based approach described here seems to suggest that we can “read” the intentions of actors through the artifacts. In literary criticism, Wimsatt and Beardsley (1998) warned against this “intentional fallacy” of seeking for the original intent of the author in the text. Discerning the intent of an action through the structure and use of an artifact presents similar difficulties. Just as with portraits or sculpture, the reconstruction of practitioner intent reflects the abilities and assumptions of the designer as much as the practitioner represented (Dennett 1990). Critics claim that such reconstructed representations can never hope to “capture” *phronesis* with integrity, and at best will form makeshift collages of researcher impressions of practitioner wisdom. Bourdieu (1990) goes so far to say that the logic that guides practice, because it is exhausted in action, is necessarily inarticulate, and cannot be brought to the light of day without significant transformation. Since our efforts to represent the logic of practice inevitably devolve into theory, the only way to learn about practical wisdom is turn to mentoring or apprenticeship and to participate in the life-world of the *phronimos*.

Drawing from the prior argument, I propose that researchers interested in documenting *phronesis* consider how artifacts can help to provide an accessible “ground” for the reconstruction of past practices. The implementation and design of artifacts provides a clear and identifiable occasion to identify the expression of *phronesis*. In practice, a leader’s problem-setting and problem-solving process usually results in either a decisions or an artifact. Uncovering the problem-setting processes involved in decision-making has proven notoriously difficult due to the challenges of reconstructing prior

rationales for completed actions (Garfinkel 1967, Starbuck and Milliken 1988). The remoteness of decision paths forces researchers to rely on practitioners' memories for reconstructing decision paths. Once decisions are made, the consequences can make the prior decision paths appear inevitable to practitioners, and the alternative paths once considered as live possibilities can fade in the face of decision results (Starbuck and Milliken 1988). While developing narratives around designed artifacts does not completely remove the problems of reconstructive memory, designed artifacts often provide a trail of documentary evidence that can serve as timely prompts for practitioners to check selective reconstruction of decision-paths. Artifact-based research practices that incorporate the actual memos, letters and records of practice provide prompts for practitioners to recollect more detailed accounts of prior events (Mogensen and Trigg 1992). Incorporating this documentary trail into the iterative narrative construction process provides a check to improve the fidelity of the resulting representation.

#### *Determining the quality of phronetic narratives*

Addressing these objections involves a closer look at the nature and construction of *phronetic* narratives. It is true that the situated nature of *phronesis* may make it impossible to represent or verify practice in the same ways as with theories or techniques. Narratives, however, carry a different kind of truth than theories. Bruner (1986) argues that narratives are essentially dialogic and aim to inspire a sense of fidelity and verisimilitude with an audience. The *fidelity* criterion is aimed to measure how well the narrative reproduces a sense of what happened in the situation described. The techniques deployed and values expressed in the representation must aim to reflect the actual assumptions and actions of practitioners. *Verisimilitude* is directed toward how the

account “rings true” for a similarly situated practitioner. Verisimilitude is measured by the “evocativity” of the narrative, that is, the degree to which the narrative makes sense in the context of the audience’s experience. Verisimilitude measures the plausibility of a narrative. In the case of phronetic narratives of leadership practice, practitioners may dismiss narratives that underestimate or underspecify the local obstacles for change, while narratives that specify the problem-setting practices of leaders in schools rich in social capital may become accessible even to leaders who lack similar resources. Together fidelity and verisimilitude provide criteria for narrative adequacy that guide researchers in developing *phronetic* narratives.

The process of ensuring the fidelity of a *phronetic* narrative is grounded in the iterative design of artifact-based narratives. An iterative design process describes how the constructed representation of *phronesis* is regularly checked against the experience of the represented practitioner. *Phronetic* narratives must be shared with the *phronimos* to measure the accuracy and adequacy of the representation. Altheide and Johnson’s (2000) reflexive ethnography, for example, provides a methodological reality check on the development of narratives of practice. Altheide and Johnson claim that the goal of ethnographic narrative: “is not to capture the informant’s voice, but to elucidate the experience that is implicated by the subjects in the context of their activities as they perform them” (p. 491). Jordan and Henderson’s (1995) interaction analysis describes a process of using video-tapes to record and share practices with research subjects. These episodes form the basis for a reflective discussion in which practitioners can elaborate on the assumptions of their practices. Checking the narrative with different practitioners from the represented context can triangulate the original narrative, bringing to light

different issues involved in constructing and using an artifact, and disclosing the nuances of why certain tools were used and how values informed and guided practice (Suchman and Trigg 1991).

The criterion of verisimilitude assumes that narratives are essentially dialogic, that is, that the “truth” carried by the narrative is not complete until it is understood by an audience. The verisimilitude of a *phronetic* narrative is measured by the degree to which it provides fruitful opportunities for practitioners to engage in reflection on practice. Schön (1983) emphasizes the power of reflection in helping practitioners learn from their work. An occasion for reflection reminds the practitioner how a key aspect of practice unfolds or fits together, sparking reflection to remember forgotten aspects of how an event occurred or how practice might change in the future. Narratives that capture the critical aspects of context can aim to immerse us vicariously in the habitus of the expert practitioner in order to give access to the practitioner’s problem-setting and problem-solving practice.

Though we cannot hope to objectively display a theoretical, objective reconstruction of *phronesis* equally accessible to all practitioners, the dialogic nature of verisimilitude emphasizes the pedagogical and communicative, rather than theoretical, value of *phronetic* representations. The quality of the representation will vary according to the reception of the audience. Verisimilitude between narratives and personal experience relies on how practitioners are able to recognize deep, structural similarities in representations (Gentner 1983, Gentner and Markham 1997). Representations that recreate the structural connections and connect them to the everyday problems of practice can provide avenues both for reflection by experienced practitioners and for novices to

learn how to make such connections. However, due to the dependence of verisimilitude on the experience of the viewer, what may evoke valuable opportunities for reflection in some practitioners may leave others unmoved. The knowledge and expertise of the audience become essential aspects of measuring verisimilitude (Jennings 1997).

Constructing representations that evoke reflection for all practitioners requires building multiple structures, linked to the concerns of different audiences, for each kind of problem represented. The verisimilitude for *phronetic* narratives is mainly in how they prompt similarly-situated audiences to reflect on whether or how the represented practices may provide viable alternatives to their own paths.

Designing learning experiences for verisimilitude requires understanding how to make prompts for reflection on practice by building opportunities for practitioners to step back from on-going work and to consider experience from multiple perspectives (Hawkins, Mawby & Ghitman 1987). Materials in the learning environment can be used to evoke targeted reflection (Radinsky 2000, Radinsky, et. al. 1999). Narratives based on *phronesis* must be structured to allow for readers to wonder about how and why the practice unfolded. To reconstruct the active, problem-finding aspects of *phronesis*, cases must be built with some of the original uncertainty of the situation intact. However, different kinds of audiences are uncertain about different aspects of a situation. Novices, for example, may require a sequenced action plan to reduce their uncertainties about where to begin. More expert leaders, on the other hand, may be interested in how represented leaders addressed the systemic consequences of the intervention. To successfully communicate practical wisdom, *phronetic* narratives must include structures to anticipate how each type of audience might perceive the case.

To preserve the sense in which problem-setting is not a given for leaders, the case itself must be *problematized* to turn the moves made by practitioners into questions for which there may be multiple solutions. Researchers in mathematics education have used problematizing as a notion for transforming traditional mathematics content from a set of solutions to open questions (Hiebert et. al. 1996). Problematizing *phronetic* narratives means organizing cases as a series of answers to questions practitioners might ask about the case. For example, in analyzing a multimedia version of a *phronetic* narrative, Halverson, Linnekin Spillane and Gomez (2004) found that audience members wanted to know more about the background and community of the school, and wanted to know how the practices represented in the case might fit into other school contexts. Aiming at verisimilitude for diverse audiences requires different kinds of problematization. Problematization for novices requires organizing case content in a coherent representation that results in recommendations for suggested practice; problematization for experts might require opening up the esoteric, detailed aspects of practice for comparison with alternate approaches. Merseth (1997) describes how different kinds of cases can show exemplary practices, provide opportunities to analyze how situations go wrong, and facilitate reflection on practice. Problematized *phronetic* cases aim to achieve all three goals by showing how exemplary practical wisdom involves a series of difficult choices in complex situations, and invite readers to reflect on how they might act at each juncture of the narrative.

### *Building phronetic narratives*

Building *phronetic* narratives involves a multi-step, iterative process of data collection, analysis, and reconstruction. Constructing *phronetic* narratives begins by

conducting an in-depth, ethnographic investigation to identify the key artifacts of the local system of practice. Artifact identification occurs through an iterative research process of observing leadership practice and talking with school leaders, teachers and community members about the artifacts that have made the most impact on their work. Once a range of artifacts are identified, researchers gather examples of how (and whether) practice is organized around these artifacts; stories of how the artifacts were constructed, used or changed; and observations of how these artifacts are situated in a local organization.

The analysis of data for building *phronetic* narratives draws on Polkinghorne's (1995) description of two approaches to narrative research: the *analysis of narratives*, that is "studies whose data consists of narratives or stories, but whose analysis produces paradigmatic typologies or categories," and *narrative analysis*, or "studies whose data consists of actions, events and happenings, but whose analysis produces stories" (pp. 5-6). Creating phronetic narratives requires that these two approaches be linked in an iterative cycle. In the first stage, the analysis of narratives, stories culled from practitioners emphasizes relevant local details and lessons learned, but omit many "taken-for-granted" assumptions that make the practice itself possible. Accessing these assumptions is critical for reconstructing the situation of practitioner problem-setting and problem-solving. These data can be analyzed in terms of anticipated and emergent themes in order to draw out the central themes and events of the data.

However, if the analysis stops here, the researcher is left with pieces of stories and abstractions that tell *what* went on without telling *how* it happened. Polkinghorne's narrative analysis, which, for the purpose of contrast with the prior step, I will call

*narrative reconstruction*, points to how story reconstruction proceeds through the sequencing and selection of relevant situational detail so that the stories remind practitioners of where they have been and teach learners how they can get there. The analysis of narratives must be followed by a process of collecting targeted observations, interviews and artifacts to flesh out the gaps and details of the analyzed narratives. Narrative reconstruction uses these new data to rebuild the analyzed narratives into a coherent story that shows how practitioners set and solved problems in the context of practice.

Once developed, the reconstructed cases of practice need to be shared with practitioners to test the fidelity and verisimilitude of the representation. Hypertext, multimedia narratives provide unique affordances for sharing *phronetic* narratives (for a more detailed discussion of developing on-line *phronetic* cases, see Capper, Halverson and Rah 2003 and Halverson, Linnekin, Spillane and Gomez, 2004). Hypertext refers to a text-based document incorporating links that cause other documents, paths or media to be displayed. Hypertext narratives allow readers to navigate the narrative by selecting their questions of interest, constructing their own unique paths through the case (Kolodner et. al. 1998, Shrader 2000, Steinkuhler et. al. 2002). In a *phronetic* narrative, the questions used to problematize the narrative are also used to organize hypertext content, allowing readers to directly investigate questions of interest. Multimedia technologies allow narrative developers to embed video, audio, documents and graphics to make narratives more evocative of the local system of practice (Bransford, Brown, and Cocking 1996, Fitzgerald, Deasy, and Semrau 1997). The multimedia format of a *phronetic* narrative provides direct access to relevant documents of the case and to video interviews with the

key practitioners. Multimedia cases that include authentic documents can help to enhance narrative fidelity; while hypertext case construction can test verisimilitude by providing multiple paths through narrative content based on the relative level of reader expertise.

*Phronetic narrative, an example*

What does a *phronetic* narrative look like? I have developed several *phronetic* narratives to show how elementary school leadership teams established conditions to improve student learning (Capper, Halverson and Rah 2003, Halverson 2002, Halverson 2003, Halverson, Linnekin, Spillane & Gomez 2004, Halverson and Rah under review). These cases were organized as multimedia narratives to take advantage of the user-directed affordances of a hypertext system. One narrative showed how an team of urban elementary school leaders used several artifacts to reshape the community in order to meet the demands of a high-stakes accountability program, while another narrative focused on how a K-2 school principal worked with her staff to reshape the traditional pull-out service-delivery program for special needs students. Here I will offer a brief overview of the second case involving Deb Mercier and the development of Integrated Service Delivery at Franklin School.

In our interviews and observations of her school, we found that the practical wisdom of the principal was grounded in her perception that changing service delivery for special needs students would require a comprehensive school reform effort involving rescheduling, professional development, resource acquisition and allocation, assessment and community relations. The resultant initiative, Integrated Service Delivery (ISD), provides the central artifact through which we explored the practical wisdom of Principal Mercier. The analysis of ISD shows how the principal struggled to obtain a federal

Comprehensive School reform grant, contended with district leaders to reshape her special education and English and a Second Language programs, faced public community resistance to ISD, and ended up creating a multi-faceted learning environment to bring struggling students from the periphery to the center of the school learning environment.

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Insert Table 1 about here  
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The initial step of case design involved adapting the Franklin case content to answer organizing questions that resulted from previous efforts to construct *phronetic* narratives (Table 1) (Halverson 2002, Halverson, Linnekin, Spillane and Gomez 2004). Building the case involved weaving insights about the principal's values, problem-setting and problem-solving practices into and around the case questions. Eventually, the number and depth of questions expanded to form an elaborate web of interlinked questions that readers could use to investigate different aspects of the principal's leadership practice (Appendix 1). The iterative narrative development process involved sharing the reconstructed narrative with Principal Mercier and several Franklin teachers to test for fidelity, and with a number of similarly situated practitioners to test for verisimilitude (Capper, Halverson and Rah 2003). The fidelity testing resulted in providing significantly more detail on several technical aspects of ISD, such as budgeting and student scheduling details, which were subsequently built into the narrative. The verisimilitude testing pointed to how we might better design the case to be used for professional development in district special education departments (for more detail, see Capper, Halverson and Rah 2003).

Using ISD as a central artifact to investigate Principal Mercier's practical wisdom allowed us consider several aspects of her phronesis as a school leader. For example, using ISD as an occasion for discussing phronesis allowed Principal Mercier to ground her value commitments in the context of her problem-setting and problem-solving practices rather than in a general discussion of her moral beliefs. Principal Mercier's initial motivation for building ISD flowed from her commitment that the conventional organization of schooling focused resources on students who have traditionally needed the least help in school, while treating students who needed the most help with pull-out programs that interrupted the classroom learning context. Mercier believed that building strong, trusting relationships between students and teachers was the key for helping students who traditionally struggled in her schools, and that the pull-out programs that disrupted forming these relationships with classroom teachers eroded trust-building relationships between students and classroom teachers. Analysis of how she developed and deployed ISD demonstrated her commitment to these values of equity and to a just learning environment in action by showing the specific practices through which she tackled the school and district orthodoxy and worked to communicate the rationale of ISD to an initially skeptical community. However, as an effective school leader, Mercier had to recognize when to check her value commitments in facing political realities. Her initial efforts to reform the instructional program with ISD met with stiff community resistance, forcing her to regroup and spend time and resources to explain the program rationale to the community and district. The implementation of ISD documented how she balanced the need to move ahead with the need for community consensus. Using ISD to show Mercier's values in action provides a powerful argument for how artifact-based

*phronetic* cases can show how values inform the selection of techniques and theories in leadership practice.

Tracing Deb Mercier's path through the complex circumstances of Franklin School provides a model for how *phronesis* is situated in the real life context of schools. Organizing the Franklin case around the questions that might occur to practitioners showed how Principal Mercier's actions formed responses to typical constraints of practice. Breaking down the financial resources gathered by Principal Mercier, for example, shows how she used ISD to acquire and allocate the resources for rebuilding Franklin's instructional program. The amount Principal Mercier allocated for professional development shows how seriously she took the process of helping teachers' changes their practices to accommodate ISD, and raises significant questions about the ease with which ISD-like artifacts might be implemented in new contexts. The development of ISD highlights how technical skills (such as grant-writing, program design, constructing a master schedule, community relations, and personnel management) and theoretical knowledge (such as school financing models, comprehensive school reform, and special education reform) can be marshaled in the service of artifact construction and implementation. In other words, the case clearly shows how *phronesis* organizes and deploys both *techne* and *episteme* in action. While it might be objected that the complexity and systemic interlinkage of practice involved in Mercier's efforts to create ISD might discourage similar efforts, I would argue that a *phronetic* case organized around basic questions of practice invites similarly situated practitioners to consider how they have responded to local challenges, and provides a structure for how novices might think about complex school reform efforts "from the inside."

## Conclusion

School leaders need a knowledge base to guide the complex work of instructional leadership. While leaders require research-proven theories and time-tested techniques, they also need specific examples of how these techniques and theories are used in the schools which already have rich traditions of instructional practice. I have argued that Aristotle's concept of phronesis helps us recognize the missing kind of knowledge, and that constructing and sharing *phronetic* narratives can help to fill this critical gap in our knowledge base for instructional leaders. *Phronetic* narratives rely on the development and use of artifacts as occasions to show how leaders marshal technical and theoretical resources in the context of practice. *Phronetic* narratives build on case study research to provide accounts of how practitioners negotiate complex situations in achieving their ends. Unlike traditional case studies, however, *phronetic* narratives seek to problematize the conditions of problem-setting and solving by using practitioner questions to organize narratives and by showing how differently situated practitioners might set and solve similar problems. Finally, *phronetic* narratives attend to the values expressed through action as a way to open reflective conversations on practice about how situations force leaders to make hard ethical choices, and about how leaders can make these choices in ways that preserve core values in complex situations.

What would a knowledge base built on *phronetic* cases look like? The research presented here has just scratched the surface of how *phronetic* narratives can capture and communicate practical wisdom. The following steps constitute possible design principles for building a knowledge base of *phronetic* narratives in education:

- Determining which artifacts are critical for representing *phronetic* practice is the first step to building a viable knowledge base. The analysis of artifacts such as school improvement planning, inclusion programs, and programs to integrate achievement data into guiding instructional practices can show how skilled practitioners work to achieve these widely-sought policy goals. Problematizing leadership practice in terms of the concerns likely to arise for practitioners engaged in similar practices would allow leaders to investigate how their expert peers had set and solved some of the chronic issues of contemporary practice.
- Second, the construction of hypertext multimedia *phronetic* narratives (as opposed to traditional case studies) would allow for a greater degree of interaction and would allow users to follow divergent paths based on interest. Hypertext systems allow users to pursue the questions they find most challenging or most interesting in the context of practice. Multimedia allows for the integration of actual supporting artifacts, such as memos, grant proposals, letters and program descriptions into the case, and also allows the users to “meet” the principal actors in the case (Halverson, Linnekin, Spillane and Gomez, 2004).
- Third, *phronetic* cases should involve multiple artifacts within schools to explore how artifact use is influenced by the local context. Rich systems of artifact-based cases from the same schools would allow practitioners to understand how leaders intentionally create linkages between artifact in systemic efforts to reform schools. Indexing artifacts according to the interconnections between artifacts would allow practitioners to investigate the issues involved in re-designing local situations of practice.

- Fourth, multiple narrative pathways should be constructed through each case, and multiple cases should be constructed around each kind of practice. Problematizing cases for novices and for experts requires exploring research approaches to understand how people learn new practices and how they compare exemplary practices with their current work. Developing multiple cases for each kind of practice might help people to better access the representation in terms of their local contexts. Our initial efforts to test *phronetic* narratives emphasize how often practitioners question whether the represented practices would fit in their schools (Capper, Halverson and Rah 2003). These pathways should be chosen to illustrate how similar artifacts can be constructed and implemented in widely divergent situations.
- Finally, the evaluation of *phronetic* narratives should expand the analytic concepts of fidelity and verisimilitude. Measuring the fidelity of artifacts would allow for the creation of *phronetic* narratives that better represent the context of practice and allow for the creation of better indexing questions. Verisimilitude measures both the evocativeness of the case but can also lead to measuring what practitioners learn from the cases. While it is difficult to measure what users learn from cases, Derry's work on case-based instruction (for example Derry and DuRussel 1999, Derry et. al. 2000) shows how user navigation of case structures can reveal learning paths through complex cases. Integrating *phronetic* narratives in learning contexts can provide more structured contexts for measuring what learners' gain from cases.

Recent discussions in educational research have focused on establishing a knowledge base of “what works” as a way to make educational research useful to

practitioners (see, for example, Shavelson, Phillips, Towne and Feuer 2003, Slavin 2004). This call is most often framed in terms of scientifically determining the effects of educational interventions on student learning. The suggested randomized trials of educational programs may well result in a set of research-proven practices that result in predictable student learning gains. Such research will provide educators with clearer access to powerful tools for improving student learning. However, Aristotle's concept of *phronesis* suggests that even with increased access to research-tested tools and theories, leaders and teachers will still need to be able to select from among these theories to determine how they should be best used. School leaders will continue to need access to faithful and evocative representations of how school leaders set and solve problems in the context of local practice. In other words, the construction of a knowledge-base for school leadership will not be complete unless it includes access to the practical wisdom of successful school leaders.

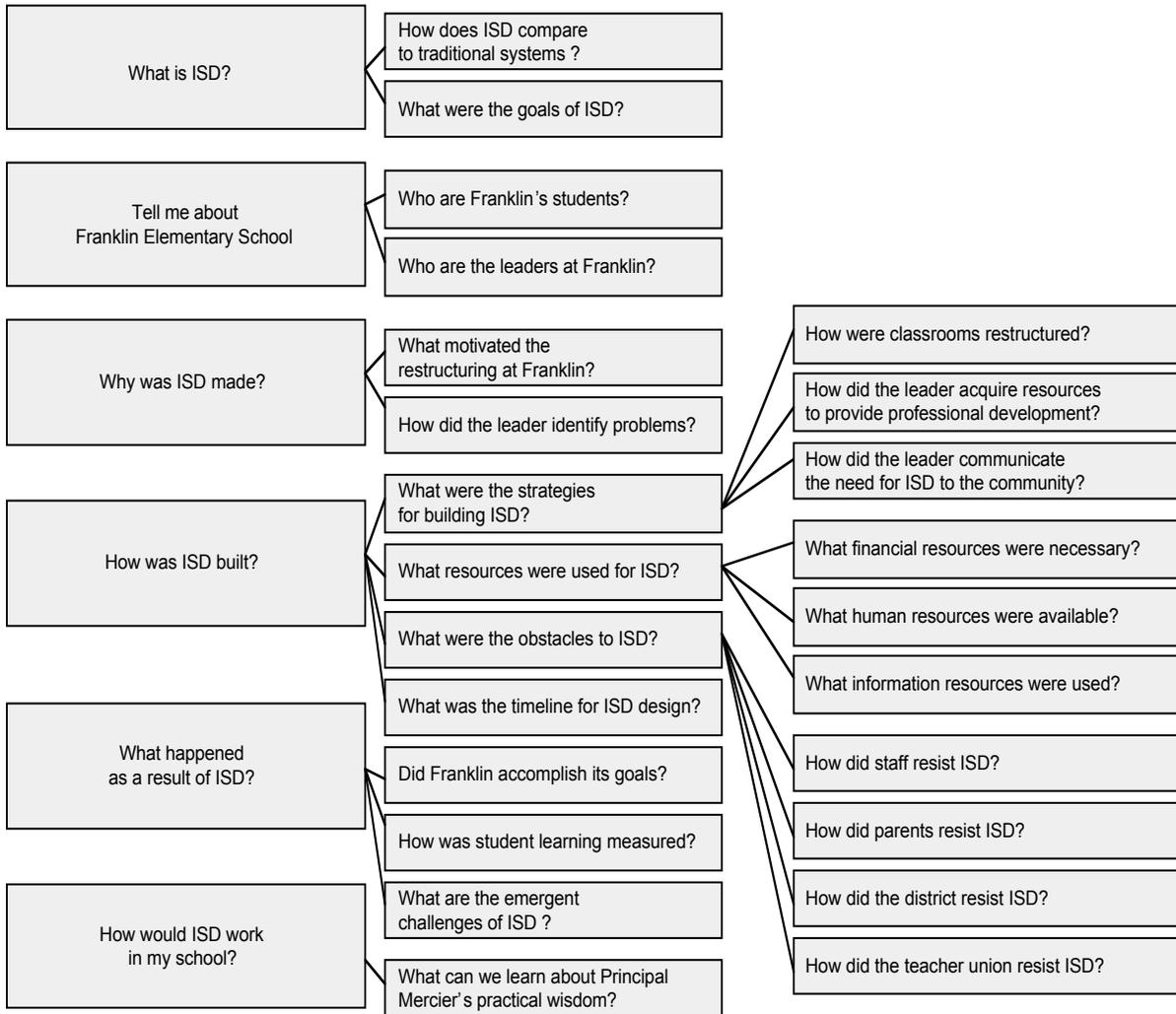
## Tables

*Table 1: Case-Organizing Questions*

What is ISD?	Articulates the purpose, goals, context and history of ISD
What is Franklin School?	Provides background of the school and the community, leaders and faculty
Why was ISD made?	Explores the problem-setting process for ISD
How was ISD built?	Explores the problem-solving process of ISD
What happened as a result of ISD?	Considers the effect of ISD on Franklin School and whether the artifact achieved the intended goals
How would it work in my school?	Describes how the principles of ISD might apply in other school contexts

## Appendix

Appendix 1: Nested question structure to organize the Franklin case content.



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