Phronesis and Design: How Practical Wisdom is Disclosed through Collaborative Design

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I. Introduction

It has long been recognized that where you find good schools, you also often find good leaders, or, at least the legacy of strong leadership. Prior research (e.g. Newman and Wehlage, 1993; Seashore-Louis, Kruse and Bryk, 1997; Purkey and Smith, 1983) has indicated many of the characteristics of schools with strong instructional programs, such as a professional community grounded in instruction among teachers and leaders and a shared sense of instructional vision and of ownership of the instructional process While we know quite a bit about the characteristics of such school communities, we know quite a bit less about how these characteristics emerged as features of the school. Because these conditions are absent in many schools, we might assume that the conditions were created, over time, by informal and formal leaders with an aim toward instructional improvement. How did the conditions for learning come to take root in school community, and what role did instructional leadership play in establishing these conditions?

This connection between leadership and good schools has led to an inverse assumption on the part of many educators – that if we can provide good leaders, we will create good schools. This connection between leadership and instructional improvement tends to rest upon a linear view of change, a direct path from learning to intention to result, that may give too much credit to training and planning, and may hide the emergent character of features such as the development of, for example, professional community or instructional vision. In order to understand the relation of leadership to instructional improvement, we need to develop the means to trace the connections of intention, planning, consequence and emergent characteristics as they unfold in the day-to-day practice of school. We need to examine in-depth how the efforts of instructional leaders toward instructional improvement accumulate over time, coming to a "tipping point" (Gladwell,

2000) beyond which their schools acquire coherent versions of professional community, or instructional vision.

Even though the characteristics of successful schools may be emergent and indirect, they may well not be accidental. The kind of knowing that guides instructional leadership may not know exactly how efforts to improve instruction will turn out, but may be flexible enough to adjust initial efforts to emergent circumstances, and adaptable enough to learn from successes as well as mistakes. This flexible, adaptive and creative kind of knowing is more like the classical conception of wisdom that it is like an established body of knowledge — it refers to a capacity to gain and use knowledge well than the knowledge it gains or uses. Wisdom, a capacity acquired through experience, helps practitioners to ask penetrating questions, provide insight into the implications of actions and events, and to advise appropriate courses of action. Wisdom involves the ability to understand how complex and messy situations hang together, and to discern the affordances whereby appropriate actions might be founded. This paper will present an argument that the Aristotelian idea of *phronesis*, or practical wisdom, offers an interesting framework to capture what instructional leaders know. *Phronesis* is a "reasoned and true state of capacity to act with regard to human goods." (*Nichomachean Ethics*, (hereafter *NE*) 1140b25) Practical wisdom, according to Aristotle differs from theoretical wisdom (*scientia*) by an insistence on action. Practical wisdom includes judgment, understanding, and insight, but must result in appropriate action. *Phronesis* is the ability to walk the talk. Aristotle points out the close connection between political wisdom and *phronesis*. While political wisdom and *phronesis* share the capacity in the soul to deliberate about the good, political wisdom acts for the good of the community, while *phronesis* acts for the good of the individual. Here I will consider Aristotle's political wisdom as a form of *phronesis* writ large — as the knowing that guides the leadership of communities. The *phronesis* of leadership is the ability to successfully influence to course of human events. (NE VI-8)

The practical wisdom of leadership has proven difficult to represent in principled ways. Collaborative design research (Shrader, et. al., 1999) provides an opportunity for researchers and practitioners alike to make their guiding assumptions of practice visible in the collaborative construction of artifacts relevant to current practices. Our research efforts to engage in collaborative design with members of a Chicago public elementary school

have brought to light some of the characteristics of the practical wisdom of leadership in the school. Here we argue that a significant residual result of collaborative design research is our ability to trace the outlines of how the *phronesis* of leadership in a school community develops and unfolds over time. In this paper, we begin by describing the features of the practical wisdom, then move to an account of our research methods and setting. We then offer an account of the features of practical wisdom we helped bring to light at Adams, and consider the promise of phronesis as a conceptual tool for representing the practice of school leadership.

2. Understanding Phronesis

Wisdom is a capacity difficult to study. This may be because, as a comprehensive human phenomenon, is bridges our conventional categories of cognition, affect or behavior, indicating a way of life difficult to discern in isolated exercises. It also may be because, as a hard-won reward for a life well-lived, it is simply not available, as a whole, to those who have not lived similar lives. Aristotle recognized the inaccessibility of practical wisdom as a codifiable body of knowledge with his distinction between *phronesis* and *episteme*. (NE VI-5) *Episteme* is a kind of knowledge that is both necessary and universal; it is not bound to a particular time and place. Epistemic knowledge can be represented apart from the knower, codified into systems of thought, and reproducible under similar circumstances. *Phronesis*, however, is more of a capacity to act than a body of knowledge. *Phronesis* must take account of the particular, that is, it must be concerned with how knowledge and experience are brought to bear in particular situations. Kessels and Korthagen (1996) note how Aristotle captures the distinction between *phronesis* and *episteme* in the contrast between law and justice. Aristotle holds that while law is universal, cases are particular. Since justice is the application of law to particular circumstance, sometimes the demands of justice go beyond the rules of law.

> The error is not in the law, nor in the legislator, but in the nature of the case, since the matter of the practical is essentially variable....The essential nature of equity is thus to correct the law in situations where it is defective on account of its generality (Kessels and Korthagen, 20)

Phronesis is required to ascertain which aspects of the situation call for consideration, and which can be ignored in capturing the essential nature of the case. This apperceptive, or "seeing-as" aspect of *phronesis* is similar to the idea of problem-setting from expertise research. Simon (1983) claimed that "much problem-solving effort is directed at structuring problems, and only a fraction of it in solving problems once they are structured." (187) Once the relevant features of the problem are highlighted, the problem-solution can flow naturally from the formulation. In their study of the problem-solving abilities of school principles, 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 good at situation-recognition, and are not as adept at bringing problem-solving procedures to bear on complex situations.

The connection between apperception and problem-setting suggests that we can begin our study of *phronesis* as a form of situated expertise in action, understood by uncovering the ways actors set and solve problems. However, before we reduce the search for *phronesis* to problem-solving, we need to consider several features of practical wisdom noted by Aristotle.

- First, Aristotle is clear that *phronesis* involves more than either understanding or judgment – that *phronesis* is the capacity to act as well as the capacity to discern, the ability to recognize features of a situation as a solvable problem is an important aspect of practical wisdom. (NE VI-7). Any consideration of problem-solving ability apart from how effectively the solutions unfold in action will miss the active nature of *phronesis*.
- Second, *phronesis* is fundamentally related to character in action, that is, how character displays its nature over time through action. Consequentially, finding *phronesis* involves understanding patterns of action over time, and the context in which those actions occur. Experience, or the degree to which practitioners learn from their prior actions, plays a key role in the development of both character and *phronesis*. (NE VI-8)

- Third, *phronesis* is a situated form of knowing. *Phronesis*, as the capacity to discern the relevant features of a situation, and act accordingly, requires an intimate familiarity with the characteristics of particular situations. Aristotelian *phronesis* is not a form of general problem-solving ability, rather it grows out of intensive interaction and familiarity with particular situations. (NE VI-7) Transfer of *phronesis* requires a practitioner to become acquainted with the details of a situation — a process that may be hastened by experience with similar situations, but which must nevertheless be conducted.
- Fourth, while *phronesis* has classically been considered as a property of individuals, it is also appropriate to consider the *phronesis* of an organization, as an account of how people together frame and solve problems using the features of their situation as constraints and enablers for practice. This implication of the Aristotelian 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 morality. The distributed leadership framework (Spillane, Halverson and Diamond, 2001) points toward ways in which leadership tasks can be studied as socially co-enacted and situationally enabled and/or constrained by the leadership context.
- Finally, the Aristotelian concept of *phronesis* depends upon insight into a higher good for the individual or the community. (NE VI-13) The transcendent moral vision which guides *phronesis* gives light to the ability to discern the good in a situation, and gives meaning to the consequent action agendas. Without adherence to a transcendent set of moral values, *phronesis* is mere cunning, and ability to devise appropriate means to achieve current ends. Aquinas thought this moral aspect to be the core of *phronesis*, and the Latin translation of *phronesis*, *prudentia*, became the organizer of all moral virtues in Thomistic moral theory.

Taken together, accessing and documenting *phronesis* poses a daunting challenge for educational research. *Phronesis* emerges as an overarching human capacity not easily retained as a whole it is analyzed into component parts. The core mechanism, the ability to discern and successfully address problems, cannot be understood as an aspect of *phronesis*

apart from the action which follows, the good served by the action, the place in the pattern that emerges through character, and the particular situation that gives the action meaning. Because *phronesis* issues in action, it often rests largely on implicit assumptions about the natures of problems and situations. Bourdieu (1990) distinguished the logic of theory from the logic of practice on these grounds, claiming that while the logic of theory results from a reflection on and reconstruction of practice, the logic of practice itself is articulated implicitly into action, and not ordinarily available for explicit articulation into theory. This may be why learning *phronesis* has traditionally taken place in apprenticeships or mentoring arrangements, during which the sense of practical wisdom can slowly come together as the student engages in the tasks of the master, and learns the nuances of practice as the tasks unfold. Schön's (1983) reflective practice theory suggest one way to make *phronesis* visible for both practitioners and learners. Here we argue that collaborative design research may open another window the *phronesis* as researchers and practitioners alike engage in the collaborative search for feasible solutions to pressing current problems.

3. Accessing Phronesis

In *Sensemaking in Organizations*, Karl Weick (1996) claims that "it takes a complex sensing device to register and regulate a complex object." (145) We argue here that collaborative design research provides the complex device that helps to establish a foothold upon which we can begin to get a sense of what the practical wisdom of school leadership looks like in action. In this section, we will offer a brief account of the promise of collaborative design, a description of our partner in several levels of collaborative design efforts, and a description of how we assembled and analyzed our data.

Collaborative design research

Collaborative design research is an emergent methodology intended to develop principled methods to design artifacts appropriate in their context of use. Grounded in design experiment research (Edelson, 2000), participatory design research (Schuler & Namioka 1993; Suchman 1998) and in collaborative curriculum design (Shrader, et.al 1999), collaborative design begins with researchers and practitioners working together to resolve issues relevant to practice. The process of collaborative design is captured in the

workcircle curriculum design process at the Center for Learning Technologies in Urban Schools. (Shrader, et.al, 1999), in which curriculum designers, teachers, administrators and researchers together develop challenging, technology-rich science curricula for urban middle schools. While collaborative design methods aim toward the development of better artifacts, an important residual consequence are the insights that designers can have into their work. When each community participates legitimately in design, each has its own reasons, its own felt needs to engage in the process which can end up being made visible in the design process. This "making visible" of the assumptions that go into the design process can help both researchers and practitioners become aware of what the other expects from the consequent product (Suchman 1995). Using a collaborative design approach to address problems currently of interest to practitioners has the potential to open up the implicit network of assumptions, expectations, legitimation and design taken for granted in everyday work. Engagement in a common design task can allow practitioners and researchers to "place practice under negotiation" (Shrader, et.al 2000) by evoking actual theories in use instead of espoused practices. (Argyris & Schön, 1983)

Site Selection

This paper represents an effort to cull aspects of *phronesis* from the data gathered through multi-leveled participation in several collaborative design efforts with an urban public elementary school. The site for this research is Adams School a K-8 school in Chicago.[1] Widely recognized as a school with a well-articulated vision and record of instructional change, Adams has developed a sense of professional community and instructional focus that has resulted in demonstrable gains in district and state test scores. Under the leadership of principal Dr. Beverly Williams and her administrative team, Adams has engaged in coordinated activities designed to integrate an evolving understanding of best practices into everyday instruction. To achieve this goal, Adams has focused on building a collaborative organizational structure that a) allocates adequate time and resources to individually-guided professional development, and b) provides leadership opportunities for teachers and staff to guide development activities.

[1] All names and places used in the following comments are pseudonyms.

The instructional vision at Adams maintains that professional growth will lead to improved instructional programs and student achievement levels by promoting ongoing professional learning. Over the past several years, the results have been impressive. First, our observations and interactions confirm the ability of the Adams teachers to lead and participate in vibrant curriculum-centered discussions across grade-levels, share and critique instructional strategies, and reflect the instructional priorities of the school in their practices and their conversations. School leaders practice what they preach, utilizing the instructional strategies in their practice that teachers are expected to use with students. Adams can claim well-documented instructional gains by students. Student performance on the citywide standardized test ITBS (Iowa Tests of Basic Skills) and the state assessment IGAP (Illinois Goal Assessment Program) have shown significant improvement over the past several years. Over the past six years, student scores (across grade levels) percentile in reading, on the ITBS, have increased from 13% to 31% of students reading at national norms; in math, student performance has increased from 21% to 39%. Furthermore, student performance on the IGAP indicates that over 70% of students meet or exceed state goals in math and literacy. This has occurred despite annual mobility rates of 30-40% and a student population of 97% low income.

Data Collection and Analysis

Our research efforts at Adams focused on participation, observation and documentation of six collaborative design projects. We were able to participate directly in the first two design efforts, we were able to observe the second two, and the processes which led to the final two were recounted in conversations and reflective interviews. These collaborative design opportunities included:

- *Documenting collaborative practice*. In 1998, the school principal and University researchers discussed a project which would capture and help to make sense of the widespread practices of collaborative design at Adams. The result of this design effort would be the development of cases that would help Adams practitioners to reflect upon their practice and to be able to communicate the main themes of practice to newcomers and interested visitors. The authors have documented a wide variety of practices in the school ranging from faculty meetings to student

assemblies, from classroom observations to artifact collection, and have participated in this process from its inception through current efforts to built multimedia representations of practice to be shared with the Adams school community.

- *Developing Cross-Disciplinary Middle School Curricula*. During the spring of 1999, Adams administrators and teachers and several university partners acquired funding from a major foundation to use the science curricula developed by the Center for Learning Technologies in Urban Schools as a seed for cross-disciplinary middle-school curriculum design. The newly-appointed science coordinator organized grade-level design meetings which resulted in domain-specific lesson supplements for grades 6-8. The authors have had the opportunity to participate in this design process from inception through the most recent grade-level design work.
- *School-Improvement Planning Process.* The school district requires the development of an annual School Improvement Plan (SIP) to guide funding initiatives within the school around district-mandated instructional goals in language-arts and math achievement as well as community involvement in instruction. The Adams community takes the SIP as an opportunity for collaborative design and refinement of the instructional program, with sub-committees meeting throughout the year and whole-faculty meetings in the spring to contribute to and refine the final plan. One of the authors has had extensive conversations with school leaders about the 1999-2000 SIP process, and had the opportunity to attend two of the three all-faculty meetings in Spring 2000.
- *First Grade Science Program Development*. The science education program at Adams has largely been focused around individual teacher initiatives to prepare students to participate in the district Science Fair program. Over the past ten years, the First Grade teachers have designed a science curriculum that has emphasized different aspect of Science Fair, from completion of Science Fair-like projects, to an investigation of the principles of scientific investigation that undergird Science Fair. One of the authors had the opportunity to observe a First Grade planning meeting, to observe First Grade several science classes, and to conduct a reflective interview with several of the First Grade teachers.

- *Five-week assessment*. The advent of high-stakes testing in Chicago holds schools accountable for student performance in language arts and math. However, the summative data resulting from the exams had not proven very helpful for the Adams community to guide instructional changes. Beginning in 1996, several administrators and teachers reverse-engineered the mandated district tests to discern the critical skills for students to develop during the course of the year. They then collaboratively developed a Five-week assessment program that would provide formative information for how well students were achieving their goals. The assessment program has been fine-tuned over the years in light of changes in the standardized testing needs, and is now an institutionalized part of the school culture. While not privy to the design process itself, one author has engaged in conversations with three administrators and teachers about the design process, and has had the opportunity to study how the tests have evolved and how the results have been shared with the faculty.
- *Breakfast Club.* Breakfast Club was designed in 1995 as an opportunity for teachers to discuss research relevant to current instructional initiatives and practices in the school. Each month a teacher leads a discussion before the school day begins about a piece of research, usually about reading or writing instruction, with group of K-3 teachers and administrators over a hot breakfast. While not privy to the design process itself, the authors have spoken with four administrators and three teachers about the Breakfast Club program, and have enjoyed the breakfast at six of the meetings.

We collected a variety of data during our participation and observation of these examples and artifacts of collaborative design. These data include: [2]

[2] Important contents of the data were gathered under the auspices of the Distributed Leadership Project, (P.I. James P. Spillane, Northwestern University) a multi-year National Science Foundation and Spencer Foundation funded effort designed to investigate the social and situational distribution of leadership in urban elementary schools.

- *Interviews and observations*: We conducted over a dozen interviews and observations of the kinds of practice identified as worth documenting by the school community.
- *Collection of artifacts*. We have built a collection of artifacts that both supported and resulted from these collaborative design efforts, including meeting agenda, assessment forms and results, Breakfast Club readings, and both draft and final copies of the 1998, 1999 and 2000 SIPs.
- *Video-taped documentation of selected examples of practice*: We video-taped two SIP meetings, three Breakfast Club meetings, a First Grade Department meeting, and other sanctioned gatherings; and
- *Video-taped reflective interviews* of practitioners observing and commenting upon their practice: We collected four video-taped reflective interviews with members of the school community.

4. Representing Phronesis

The opportunities to participate in and observe collaborative design processes at Adams have provided some insight into the *phronesis* of leadership practice at Adams. In other work, we have used these data to reconstruct narratives of practice that capture the relevant aspects of the situation of leadership practice (Halverson & Zoltners, 2001), considered how the artifacts generated from the design help us to access collaborative design processes at Adams (Halverson & Gomez, in preparation), and reconstructed narratives to show how the practice of instructional leadership in science evolves over time (Spillane, Diamond, Walker, Halverson & Jita, 2001). Here we would like to discuss several broader themes that have emerged from our experience at Adams. Using the characteristics of *phronesis* described above (p. 4-5), we reviewed the data collected at Adams to highlight the two central themes of the practical wisdom of leadership: 1) apperception, and 2) the patterns that emerge in the problem-framing and solving process.

Apperception

Considering our focus on collaborative design as a lens for understanding *phronesis*, it might not be a surprise to report that the Adams school leaders see many emergent problems as opportunities for collaboration among the staff. However, this focus on collaboration as a path to school improvement was rooted in Principal Williams' first challenges at Adams. The two buildings at Adams had resulted in the development of two distinct communities of teachers:

> The perception in the primary building was they used to call it the country club, because the teachers in this building did not feel that the teachers in that building worked over there, because it was so difficult in this building because kids were older, and you had different issues. …One of the things that we did initially was a program called Bridging The Gap, which was more like a team building…. I asked for volunteers who wanted to serve on the leadership team for this purpose. (032299)

The initial Bridge-the-Gap effort provided a prototype for subsequent problem apperceptions at Adams. The school administrators play a large role in the problem-recognition process, and faculty collaboration played a large role in the solution-design process. For the Breakfast Club, the Documenting Practice project, and the Middle School Science Curriculum Development efforts, as in Bridging the Gap., Williams would recognize that a problem existed, and would invite faculty and staff members to become of the problem-solving process. In Breakfast Club, for example, Williams noted that, in language arts instruction, "we were working very hard, but not working very smart." (110399) Working smarter would mean "not reinventing the wheel" by experimenting with methods that had already been already been tested by researchers. (110399) Together with the Language Arts coordinator, Williams intended Breakfast Club to provide a forum for teachers to review and use research in their practice. The subsequent informal design process involved discussions with interested teachers about when, where and how the Breakfast Club meetings would take place.

Collaborative design was thus rooted in the initial Adams school-wide leadership efforts. However, in recent years, Adams school leaders began to see a strong link between collaborative design and student test performance. This link between professional development and student test score improvement was developed during the advent of

Breakfast Club. Williams noted that participating in courses helped to improve student scores in math, but was not as helpful in language arts. She remarked that:

> We began to believe in the importance of professional community when we realized that, it wasn't taking classes, but that it was when teachers started talking about their teaching that the scores started improving. (031500)

This led to increasing opportunities for teachers to engage in collaborative curricular design as an opportunity for teachers to talk with one another about their practice, which in turn helped the school leaders to reframe their apperception of how to organize professional development opportunities. Instead of looking to bring external partners in from outside, the collaborative design efforts and discussion forums such as Breakfast Club helped to create a group of teachers who felt they could step forward to lead professional development sessions. As one teacher remarked:

> The whole thing was fascinating – we found that a lot of new teachers that were there were not exposed to the whole idea of teachers teaching teachers. They were amazed, they were surprised to see that this happens all the time. We no longer have to bring in, pay exorbitant fees to bring in, when we have people on our staff that have researched it, and present what they know …(090601)

Seeing professional development as an occasion and an outcome of collaboration also extends, on some grades, to grade-level lesson planning among teachers.[3] This emergent reliance of teachers upon one another is also shown in the on-going First Grade Curriculum design effort. Three members of the First Grade team have been teaching together for over ten years, and have come to take on advisory roles in different subject areas. One teacher commented that:

> When we are thinking about what to do in science, we go to our science person here (gesturing towards Ms. J) and we ask for help. See, that's her strength. When we need some ideas on science, we go to Ms. J's room; when they need ideas for art, they come to me. We know each others

[3] Our experience at Adams shows led us to believe that the level of collaboration among teachers varied considerably among the grade-levels.

> strengths and weaknesses. When we go to her (Ms. J) and ask for ideas, that's fine, she helps us set it up. (031500)

The apperception of turning to colleagues for professional expertise was bolstered by Williams' commitment to respect the ongoing instructional priorities of the school when considering external partnerships. Determined to avoid partnerships that would distract teachers from current instructional priorities, Williams would only entertain external partnerships that would contribute to on-going instructional programs. For example, when approached to for teachers to participate in the Middle School Science Curriculum Design process, for example, Williams insisted on talking with her faculty members before committing the school to the project. This agenda-setting power used to focus instructional efforts on several key initiatives rather than developing a model of accepting resources regardless of where they lead the instructional program is a key feature of the how apperception helps to frame the problems faced in the school, and is a key feature of the *phronesis* of Adams school leadership.

Another aspect of apperception in the Adams school community was the characteristic of seeing externally-imposed constraints, such as district testing policies, as an opportunity for collaborative design. In the case of the Five-Week assessment program, school leaders saw the summative data provided by the district reports as a significant constraint on their ability to customize an instructional program to help children succeed. (100400). In 1996, Williams called a meeting of school leaders, including administrators and lead teachers, to figure out how to help resolve this issue.

> We discussed how we need to find out, school-wide, where children needed help in preparation for the upcoming tests. The Language Arts coordinator suggested a more frequent, school-designed assessment program to provide formative information to guide teachers efforts. Then the faculty and administrators designed the Five-Week assessment program (021400)

To align the Five-Week exams with the standardized tests, several teachers, an Assistant Principal, and the :Language Arts coordinator reverse engineered examples of the standardized tests to determine the appropriate skills. (021400) Teachers, led by the Language Arts Coordinator, then used instructional resources (including workbooks, texts and other instructional materials) to pull together tests appropriate for the tasks. As the assessment plan began to take shape, several members of the leadership team began to link

the school literacy program with the assessment program as a way for teachers to find out how well they were teaching the literacy methods. Recently, school leaders began to modify the assessment program to address the expectations of new state-wide accountability measure. (021400) The Five-Week assessment program provides an excellent example of how externally imposed mandates can be seen as opportunities for collaborative design. In struggling to mediate the short-comings of district policy, such collaborative design efforts serve to create ownership of the mandate as a legitimate constraint on the school community, while at the same time developing platforms for conversation about the advantages and disadvantages of the policy for the school community.

Patterns in problem-setting and –solving

The relation of *phronesis* to individual and institutional character requires us to look for practical wisdom in the patterns of problem-solving as the unfold over time. The school leaders at Adams have established a pattern of taking instructional leadership issues seriously by building the organizational infrastructure so that instruction can become a prime focus of the formal leaders of the school. Principal Williams tells the story how her own educational focus changed during her doctoral studies:

> because initially the thing (for me) was to be a good administrator, to be organized, to make your school run well, to run a tight ship. The focus now is the biggest story, before I became a principal I started a Doctoral Program … in administration, and my goal then was to be move into administration. … I ended up finishing my degree not in administration but in curriculum and instruction. My philosophy had changed, … I now feel that a principal now has to be an instructional leader first (031501)

This shift from administration to instructional leadership was subsequently reflected in how the school became staffed. Principal Williams created several auxiliary staff positions, including a disciplinarian, two assistant principals, and a part-time business manager, to help take care of the disciplinary and managerial aspects of administration. She then sought out good teachers on the staff and offered them leadership opportunities to step up as instructional leaders in the school. With the advent of high-stakes accountability in the mid-1990s, Williams named one teacher (who has since moved on to a principalship in another school) to the position of Math and Science Coordinator, and brought in a former

colleague to act as the Language Arts Coordinator in the school. Recently, Adams was named as a Math and Science Academy, which made it possible for Williams to appoint a former 6th grade science teacher to the role of Science Coordinator within the school. This configuration of administrative and instructional leadership positions enables Williams to devote a significant part of her time in the school to instructional leadership efforts.

A striking consequence that emerges from this attention to instructional leadership practices at Adams in the degree to which patterns of problem-setting and –solving are situated in prior design artifacts and processes. We conjecture that the continued attention to instructional improvement on the part of school leaders tends to keep instructional initiatives in the foreground as live resources for the framing of subsequent problems. Making visible this "implementing system" (McLaughlin, 198x) of how prior artifacts condition subsequent practice is a key aspect in clarifying the connection between *phronesis* and emergent instructional system characteristics. Initial collaborative efforts, such as Bridging the Gap, designed to help teachers from different grade levels talk together have evolved into in design processes which helped teachers talk with one another about instruction and research (Breakfast Club), and helped community members design curriculum and assessment programs (Middle School Science, Five-Week Assessment).

An interesting aspect of the *phronesis* of problem solving is how the problem-space for design is progressively narrowed as a consequence of greater reliance upon prior design efforts. In *Darwin's Dangerous Idea* (1995), Daniel Dennet quotes Piet Hein to illustrate the relation between wisdom and learning from experience:

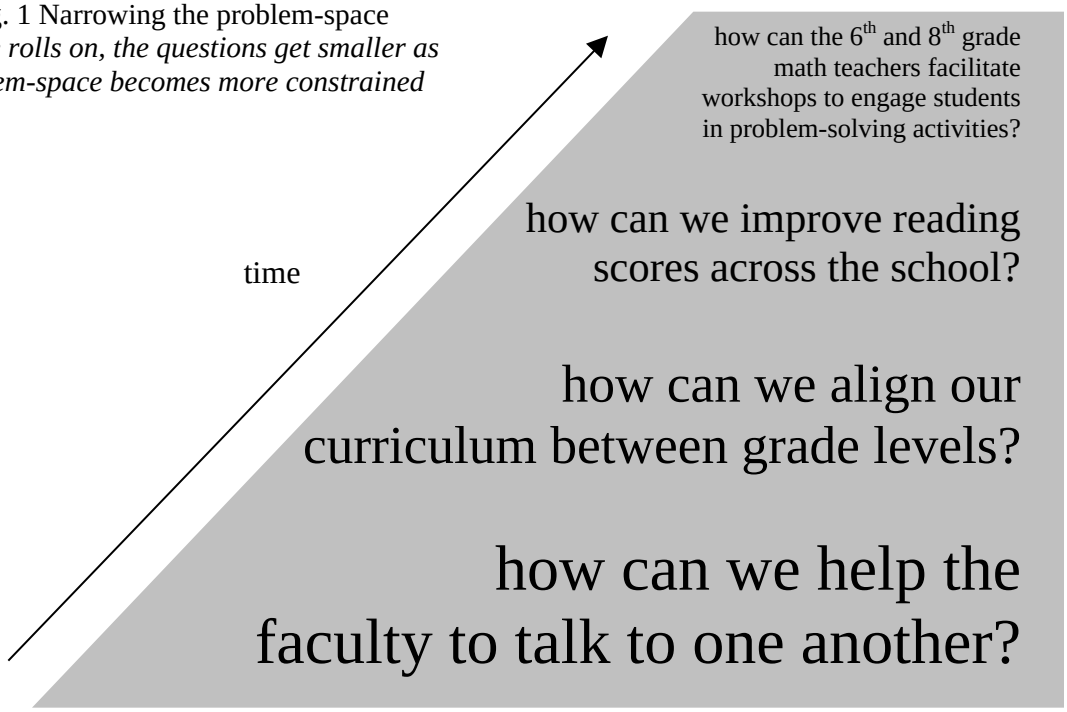
> The road to wisdom?
> Well, it's plain and simple to express:
> Err and err and err again
> But less and less and less. (200)

The results of prior design efforts give birth to possibilities for action that had not previously been recognized. In particular, these possibilities seemed at Adams as opportunities to refine the collaborative design process to achieve ever more specific goals. Once a general template of problem-solving practice has become institutionalized, subsequent efforts do not have to reinvent the entire wheel. Instead, subsequent problem-framing and solving efforts can focus on refinement rather than redesign, allowing

practitioners to expend less cognitive processing on the aspects of the process they can assume, and more on the thorny issues involved in the particular implementation issue.

This narrowing of the question can be seen in efforts to develop professional community at Adams, where initial questions of "getting teacher to talk together" has resulted in artifacts that are used as resources to ask current questions such as "how can we

Fig. 1 Narrowing the problem-space
As time rolls on, the questions get smaller as problem-space becomes more constrained



get the 6th and 8th grade math teachers to lead discussions on the differences between the ISAT and IGAP math problem-solving assessment patterns." (050800) (see Fig 1) One example of how artifacts are used to constrain subsequent problem-setting practices is the contrast between the emergence and use of Breakfast Club. Initially, Breakfast Club was designed to create an opportunity for teachers to talk with each other about research relevant to their practice (121500). However, when teachers began to grow comfortable with the Breakfast Club format, the Language Arts coordinator began to use the Breakfast Club agenda as a forum first to explore alternative language arts programs that would effectively integrate reading and writing into the Adams program, then to familiarize

teachers with a popular program that seemed to fit the needs of the Adams community[4]. (031699) Thus Breakfast Club, which originated as an end itself, came to act as a mediating artifact for subsequent conversations about instructional improvement.

The *phronesis* connected with tracing the problem-solving and setting is related to experience. Aristotle claims that experience, the accumulation of encounters with particular situations, is a key aspect of practical wisdom. (NE 1142a27; 1143b8) Experience enables a person to recognize how principles play out in the course of life, and to anticipate and endure the obstacles that emerge. Experience is different from mere endurance, however, and an wisdom depends upon the ability to learn from experience. The attention paid by Adams school leaders to instructional issues helps to keep alive the lessons of prior design experience, constraining the subsequent problem-spaces and making each emergent set of problems more accessible than the last. Seeing how experience constrains the problem-space is a key manifestation of practical wisdom.

Conclusion

We can learn much from leaders able to develop robust professional communities around instruction. Many urban schools are under considerable pressure to raise student performance scores on high-stakes standardized tests. While often rich in social and human resources, in many cases these resources are not configured to create the kinds of academic press needed to fuel school-wide test-score improvement. Urban school leaders are challenged to be creative in the ways they acquire and allocate resources in order to create a sense of academic press among faculty and students. Over the past ten years, the success that Adams School has had in improving student test scores suggests that we can learn much about how school leaders understand and undertake their work to promote

[4] The Adams teachers and administrators decided to implement Pat Cunningham's Four Blocks of Literacy, a comprehensive literacy program focusing on guided reading, working with words, self-selected reading, and writing. Since 1991, the framework has been used in numerous first and second grade classrooms and in third grade classrooms where many children still struggle with reading and writing (c.f. Cunningham, P. M., Hall, D. P. & Defee, M., Nonability grouped, multilevel instruction: Eight Years Later. *Reading Teacher, 51*,May, 1998).

professional community and to maintain an instructional vision as viable means to student achievement. There remains much work to be done in analyzing the nature of the practical wisdom of school leadership at Adams. The school provides a rich example of how practical wisdom has evolved over time to meet emergent needs, and how intended and unintended consequences of rich systems of practice can form the basis for desired school characteristics such as professional community. Hopefully, research into the nature of the *phronesis* of school leadership can contextualize the story of practical wisdom adequately, making it accessible to people who want to do as well as to know.

Bibliography

Aristotle. (1941) *The basic works of Aristotle*. Richard McKeon, ed. Random House: New York

Argyris, C. & Schon, D. (1974) *Theory in practice : Increasing professional effectiveness*. San Francisco: Jossey-Bass.

Bourdieu, P. (1990) *The logic of practice*. Stanford Univesity Press: Palo Alto, CA.

Cunningham, P. M., Hall, D. P. & Defee, M., (1998) "Nonability grouped, multilevel instruction: Eight Years Later." *Reading Teacher, 51*,May

Dennet, D. (1995) *Darwin's Dangerous Idea*. Touchstone Books: New York.

Edelson, D. (2000)

Gladwell, M (2000) The tipping point: how little things can make a big difference. Boston: Little Brown.`

Halverson, R. & Gomez, L. (in preparation) "Documenting practice: Accessing the how of collaborative practice in schools."

Halverson, R. & Zoltners, J. (2001) "Distribution across artifacts: How designed artifacts illustrate school leadership practice." Paper presented at 2001 meeiting of the American Educational Research Association, Seattle, WA

Kessels, J.P.A.M & Korthagen, F.A.J (1996) "The relationship between theory and practice." *Educational Researcher* 4

Leithwood, K. & Stager, M. (1989) "Expertise in principal's problem-solving" *Educational Administration Quarterly* 25 (2)

McLaughlin, 198x

Newman, F. & Wehlage, G. (1995). *Successful School Restructuring*. Alexandria, VA: ASCD.

Purkey, C. S. & Smith, M. S. (1983). "Effective Schools: A Review." Elementary School Journal, 83 (4)

Seashore-Louis, Kruse and Bryk (199x

Schon, D. A. (1983) *The reflective practitioner.* San Francisco: Jossey-Bass.

Schuler, D. & Namioka, A. (1993) *Participatory design: Principles and Practice*. Lawrence Erlbaum: Pahwah, New Jersey

Shrader, G., Williams, K., Walker, L., and Gomez L. (1999) "Work in the 'work-circle': A description of collaborative design to improve teaching practice." Paper presented at 1999 meeting of the American Educational Research Association, San Diego, CA.

Simon, H. (1996) *The sciences of the artificial*. 3rd ed. MIT Press: Cambridge, MA.

Spillane, J.P.; Diamond, J. Walker, L.; Halverson, R. & Jita, L.(2001)

Spillane, J. P.; Halverson, R and Diamond, J.B. (2001) "Towards a Theory of Leadership Practice: A Distributed Perspective." Institute for Policy Research Working Paper WP-99-3, Northwestern University.

Suchman, L. (1995) “Making work visible.” *Communication of the ACM* v. 38, n.9

Suchman, L. (1998) “Constituting shared workspaces.” In *Cognition and communication at work.* Eds. Y. Engestrom & D. Middleton. Cambridge University Press.

Weick, K. (1996) *Sensemaking in organizations*. Sage Publications: London