# *Phronesis*, Artifacts and Leadership Practice

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## *Abstract*

This paper develops Aristotle's idea of *phronesis*, or practical wisdom, as a framework to access, represent and communicate the complexity of successful instructional leadership practice in schools. The design and use of *artifacts*, the tools leaders develop and implement in their practice, provide a window into the patterns of problem-setting and problem-solving that guide the expression of *phronesis* in school leadership.

## *Introduction*

It has long been recognized that where you find good schools, you also often find the legacy of strong leadership. Prior research has defined many of the characteristics of schools with strong instructional programs, such as professional community grounded in instruction among teachers and leaders, a shared sense of instructional vision, group ownership of the instructional process and links between supervisory, assessment and instructional practices. [1] School leaders are responsible for the design and maintenance of these essential conditions in existing school systems.[2] However, while we know quite a bit about the characteristics of such school communities, we know quite a bit less about how these characteristics develop together to become distinctive features of the school community. A strong professional community among teachers, for example, can either presuppose or help create group ownership of instructional process, which in turn may

depend upon or generate the need for stronger internal linkages between assessment and instruction. The implementation and coordination of these conditions is an important aspect of improving student learning in schools.[3]

Accessing how school leaders understand and manage schools calls for a new approach to understanding the leadership practice. A similar call is being made for helping to share the knowledge of teaching practice. For example, Hiebert, Gallimore and Stigler remind us of the need for a practice-based knowledge base, grounded in documenting and communicating what teachers know, in order to effect instructional change in schools.[4] 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. The lack of a professional knowledge base is felt in educational leadership as well.[5] However, the methods and theoretical tools necessary to create a knowledge base of value to practitioners may be lacking. Traditional analytic research methods often forsake the stories of how practices fit together in order to develop causal accounts of the influences that certain practices have on others, While such an approach can help practitioners to determine which practices to pursue, it often sheds little light on the ways practices can fit together (or conflict) in existing contexts. In order to understand the relation of leadership to instructional improvement, for example, 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. Finally, we need to represent how knowledge and action are

intertwined in leadership practice that leads to the establishment and maintenance of conditions for instructional improvement.

This paper explores how the Aristotelian concept of *phronesis*, or practical wisdom, provides a framework for accessing and communicating what good leaders know. *Phronesis* has traditionally provided an alternative model to an epistemic, or scientific, conception that knowledge can be represented apart from the knower.[6] It describes a comprehensive faculty that includes not only judgment, understanding, and insight, but also results in appropriate and successful action. *Phronesis* begins with individual judgment, deliberation and action. As such, the *phronesis* of practitioners guides the problem-setting, or apperception, and problem-solving processes of practice as well as the processes of choice and evaluation. Because it is concerned with knowledge and activity, *phronesis* needs to take account of the particulars of the situation in order to determine the appropriate course of action.[7] *Phronesis*, however, cannot be reduced to a set of desired practices or techniques. Practical wisdom belongs to individuals, and, as a form of wisdom, is gradually developed over the course of long experience, and represented in patterns of action over time. Accessing the *phronesis* of successful school leaders will help us understand how practice can change and adapt over time to establish the conditions for instructional improvement in schools.

Practical wisdom has always proven difficult to represent in systematic ways. While the situational nature of the exercise of *phronesis* makes it irreducible to a set of rules for guiding action, the ties to individual character and action make the expression of *phronesis* difficult to generalize. Bourdieu claimed the logic which guides practice, because it is exhausted in action, is necessarily inarticulate, and cannot be represented

without transformation into theoretical knowledge.[8] The tacit and developmental nature of *phronesis* makes it difficult to isolate apart from the context in which it is exercised. This paper develops and applies a perspective to use the *artifacts* created by leaders as a window into their practical wisdom. Since *phronesis* is inherently linked to action over time, efforts to document *phronesis* must take place *in situ*, that is, in authentic contexts of action. Although *phronesis* itself may be exhausted in action, research designed to trace the residual traces of *phronesis* found in the artifacts developed over time can provide valuable insight into complex leadership practices.

## *Understanding Phronesis*

Aristotle's account of *phronesis* both provides a foothold for an investigation of practical wisdom and signals the constraints that any research project aimed at studying wisdom must respect. In the *Nicomachean Ethics*, Aristotle provides an account of the nature of morality and guidelines for how to live a moral life. Morality, for Aristotle, involves the growth of a virtuous character, developed through habitual action and training, that guides the choice of appropriate action in daily life.[9] Aristotle's account of moral knowledge depends upon an adaptable, experience-based character that can determine, in each unique situation, the appropriate course of conduct. While rules or guidelines are necessary for moral action, Aristotle's account focuses on the ability to virtuously select from rules for moral action. The ability to use rules must take into account the "particular" or the uniqueness of each given situation. Kessels and Korthagen note how Aristotle's comparison of law and equity captures contrast between the particular and the general.

> 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.[10]

Aristotle holds that while law takes the form of rules, the cases to which law is applied require the ability to understand distinctions among particular cases.[11] The creation of equity involves more than the mere application of law -- it "corrects" where the law is "deficient on account of its generality." The ability to create equity is not self-contained within the law, rather, it points to a capacity beyond knowledge of the law involving the experience, knowledge and judgment necessary to create equity in specific cases. Aristotle's account of *phronesis* is an effort to name and to understand this capacity in people who are able to perceive, judge and act well.

Aristotle's distinction between the knowledge of law and equity corresponds to differing capacities to know. This distinction between knowing rules and using rules underlies Aristotle's distinction between scientific and practical knowledge. Scientific knowledge, or *episteme*, transcends the particular situation and it is valid beyond a particular time and place. While Aristotle held that episteme was both eternal and necessary,[12] current views on the nature of scientific knowledge would likely qualify Aristotle's claims about *episteme,* instead emphasizing how scientific knowledge can be represented apart from the knower, codified into systems of thought, and lead to reproducible results under similar circumstances. In either case, the production of scientific knowledge aims to transcend particular circumstance to produce stable, enduring generalizations.

*Phronesis*, or practical wisdom, moves in the opposite direction. *Phronesis* concerns how individuals understand the particulars of a situation,[13] marshal the appropriate knowledge, and engage in relevant action.[14] Although *phronesis* is a kind of knowledge, it is also a form of understanding developed over time through experience, and is embodied in character. Dunne describes how "*phronesis* is characterized as much by a perceptiveness with regard to concrete particulars as by a knowledge of universal principals."[15] The ability to determine both the rule and the appropriate application and use arises from experience which helps people to ascertain which aspects of the situation require attention, and which can be ignored.

*Phronesis*, expertise and the practical syllogism

Aristotle describes how, in action, *phronesis* is exercised through an iterative interaction between intuition, deliberation, judgment and action. This cycle between cognition and action is repeated thousands of times in the course of daily life. The cognitive aspect of *phronesis* is suggested by the Aristotelian concept of the practical syllogism.[16] Aristotelian syllogisms, in their simplest sense, consist 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.[17] A classic example of a syllogism*:*

All men are mortal;

Socrates is a man;

Therefore Socrates is mortal.

Whereas a theoretical syllogism results in a propositional conclusion, the conclusion of a practical syllogism is an action. A practical syllogism thus describes the rationale for

action. While a syllogistic account of practical argument may suggest that action is primarily governed by the universal, rule-based major premise, Aristotle claims that in the practical syllogism the determination of the minor premise is the critical first step. In other words, in the course of action we perceive a certain characterization of events, then draw on the appropriate rule for action to complete the practical syllogism. *Phronesis* consists in the ability to perceive minor premises that lead to effective action. In other words, practical wisdom is the ability to discern from the noise of experience what is worth noticing in a given situation, together with the ability to enact this perception effectively.

The practical syllogism, however, may not be available during the course of action. There many be no such thing as a practical syllogism, as a separable entity, at all in the guiding practice. Ryle in claiming that "efficient practice precedes the theory of it" and that the "intellectualist legend" has developed the fiction that "whenever an agent does anything intelligently, his act is steered by another internal act of considering a regulative proposition appropriate to his practical problem."[18] He suggests that "what distinguishes sensible from silly operations is not their parentage but their procedure."[19] Ryle's analysis suggests that the role of the practical syllogism is best understood as a description of action rather than a separate, parallel cognitive process. Fenstermacher and Richardson follow this insight to point out the pedagogical, rather than analytic value, of the practical syllogism in formally reconstructing the course of successful reasoning to guide the possible course of action for learners.[20] However, claiming that there is no theoretical antecedent of practice is not to claim that practice has no reason. Rather the reason that guides practice is different from theoretical reason because it inheres in the

character of the actor and because it is inseparable from the particulars of action. A practical syllogism cannot be used to represent practical reasoning apart from its context. In other words, a practical syllogism cannot not convert *phronesis* to episteme.

What then, is the value of the practical syllogism? Aquinas describes how "reason directs human acts in accordance with a two-fold knowledge, the universal and the particular."[21] The practical syllogism demonstrates how *phronesis* helps to determine the relation of knowledge of the universal (rules) and knowledge of the particular (perception) in action. Since *phronesis* is a capacity that guides action, rather than a set of propositions, character and experience play a central role in understanding the appropriate role of the practical syllogism. Experience plays a key role in determining the relative primacy of rules or perception in the practical syllogism. In learning, novices begin with rules (major premises), abandon the rules in favor of case-based perceptions (minor premises), then to considering how rules can be used as resources for guiding their experience-based perceptions. Novices, according to Dreyfus and Dreyfus often begin with sets of rules they seek to apply to their actions, then recognize their inability to characterize the salient features of a given situation in terms of the rules.[22] Their inability to fit the rules to emergent, fluid nature of experience leads to an abandonment of rules in favor of particular, hard-won "lessons of experience." In other words, novices abandon the major premise in favor of experiential-based minor premises in constructing rationales for action. Dreyfus and Dreyfus (1986) suggest that expertise is developed, over time, not by a dismissal of rules but to a recasting of the place of rules as expressed intuitively through action.[23] Experts do not systematically reject major premises as much as select major premises on the basis of their perception of the minor premises. The

major premises that expert actors select and refer to in action thus serve to indicate their perceptions of the minor premise. The selection of rules results from the characteristics of perception.

The function of *phronesis* to select the minor premise in the practical syllogism. *Phronesis* guides our perception by pointing our the relevant features in a given situation. The selection of relevant features, however, is a far from simple task. This aspect of *phronesis* as a capacity to bring a rich, experiential base of has received considerable attention in expertise research as the concept of *problem-setting*. Problem-setting refers to how the initial perception of a problem contributes to the design of the solution. Simon claimed that "much problem-solving effort is directed at structuring problems, and only a fraction of it in solving problems once they are structured."[24] 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 principals, Leithwood and Stager (1989) claim 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. In Aristotle's terms, expert actors are adepts at identifying actionable minor premises which reflect the existing major premises that define the context of action. Early gestalt psychologists used the term *apperception* to describe this ability to select certain features of a situation as essential from among the dizzying noise of sensation. Apperception, or "seeing-as," forms a bridge between sensation and cognition by reducing the input of sensation into cognitively manageable

forms.[25] While apperception does not exhaust *phronesis*, the ability to understanding the nature of the situation plays a key role in determining the range of possible actions available, selecting the appropriate action and carrying it out well to the anticipated end are the marks of *phronesis*. [26]

Aristotle describes the process of problem-setting and problem-solving in terms of deliberation and choice. The *phronimos,* or person with *phronesis*, is "able to deliberate well about what is good an expedient for himself.'[27] Deliberation involves the cognitive capacities of intuition, understanding and judgment. *Intuition* is our ability to grasp rational principles, *understanding* our ability to possible applications to experience, and *judgment* our ability to characterize a given set of particulars with the appropriate set of principles. Kessels and Korthagen describe how

> good deliberation accommodates itself to what it finds, responsively, and with a respect for complexity. It does not assume that the form of the rule governs the appearances; it allows the appearance to govern themselves and to be normative for the correctness of the rule.[28]

Deliberation and choice, taken together, constitute the application and exercise of practical wisdom. Aristotle remarks that the "origin of action is choice," and that choice is "desire and reasoning with a view to an end."[29] The resultant action is the end of the practical syllogism. *Phronesis* the ability to systematically deliberate well, which means the ability to appropriately select from among the features of the situation, and to fashion agendas that will successfully address the perceived challenge of the moment.

*Phronesis*, experience and character

Appropriate experience with particular situations abbreviates the deliberation process for experts. In the exercise of *phronesis*, actors rely on their experience to understand the outcomes of proposed processes rather than engaging in explicit planning. As Dreyfus and Dreyfus comment, the distance between apperception, deliberation, choice and action is diminished with increasing expertise, so much so that virtuoso performers action appears seamless both from the perspective of observers and the actors themselves.[30] Experience acts as a distilling process to habituate problem-setting practice, resulting in "second nature" reactions as experts quickly size up novel situations. 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 which are simply manifested in action. provides the grounds for *phronesis*, and Aristotle reminds us that "we ought to attend to the undemonstrated sayings and opinions of experienced and older people" because "experience has given them an eye they see aright."[31] The encounter with particulars, embodied by experience, takes time and cannot be approximated by learning rules. Experience gives a sense of constraints and affordances, and helps determine the uses for which a practice is and is not good.

For Aristotle, experience is embodied in the development of character. Our character represents the individual network of habits we acquire through training and through subsequent experience that determine our ability to act virtuously. Aristotelian ethics emphasizes that virtuous action is more than merely an ability to select and act upon the appropriate rule – character determines our ability to recognize the right rule as appropriate for a given situation. *Phronesis* represents the accumulated wisdom,

embodied in character, which helps us to determine which action is worth taking in a given situation. Accounts of *phronesis* recount developmental paths through which the ability to perceive minor premises in practical syllogisms is acquired and refined over time.

This is not to say, however, that experience is a sufficient condition for *phronesis*. Just as experience can lead to the development of vice as well as virtue, the road to *phronesis* can lead to stubbornness on the one hand, or cleverness on the other. Stubbornness allows past experience to determine future problem-setting in terms of what has already happened, leading to an inflexible sense of apperception, or tendency to see all experiences in terms of the same problems.[32] Organizations as well as individuals can get "set in their ways," and find it difficult to move beyond the constraints of experience to see their situation in new ways. While past experience conditions apperception in *phronesis*, the expert practitioner remains open to the novelty of the particular circumstance, and allows the unique situation to "break open" the technical knowledge of the practice.[33] Organizational research has developed several tools, such as Argyris and Schön's "double-loop" learning and Schön's reflective practice, to provide methods for organizations and individuals, respectively, to break out of the stubborn rigidity of experience.[34]

Cleverness provides another example where experience can lead beyond *phronesis*. Cleverness "is…(the ability) to do the things that tend toward the mark we have set for ourselves, then to hit it,"[35] that is, the ability to successfully devise means for any given ends. Aristotle's critique of cleverness reveals his concern with the range of action appropriate for the exercise of *phronesis*. While we "call even men of practical

wisdom clever,"[36] the wisdom of their action consists in the good toward which they aim as well as than their ability to hit the target. Without an abiding sense of moral vision, of why the work is worth doing, their *phronesis* degenerates into mere cleverness, the ability to devise the means to satisfy any ends.

## *Phronesis* and Leadership

Thus far *phronesis* has been described as a personal characteristic designed to produce a personal good. However, leaders, *qua* leaders, do not act to pursue their own good as much as to pursue the good for the those they lead. 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.[37]

Aristotle contends that personal practical wisdom and political practical wisdom share the same deliberative process, but differ in their domains of exercise. Political *phronesis*, then, is the ability to "deliberate well about what is good and expedient" (NE 6.5) and to act accordingly for the good of a community or state. The *phronesis* of leadership practice is the wisdom that guides how leaders construct and maintain structures that help them negotiate this context of completing, pre-existing goals and emergent situations.

Aristotle suggests that "one's own good cannot exist without household management, nor without a form of government."[38] The distinction between political and personal *phronesis* allows us to consider the community as a unit of analysis for leadership just as the individual is the unit of analysis for morality. 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*. However, the sense of agency changes in the transition from the personal to the political. It is somewhat of a simplification to suggest that there is a monolithic individual that guides action in political *phronesis*. Rather, the various aspirations, needs, desires and limitations of multiple leaders within the community compete for the ability to determine the course of individual action. Methods to access the patterns of multiple leadership practice, such as the distributed leadership framework take the multiplicity of perspectives into account in developing methods to trace how leaders both draw upon and contribute to organizational wisdom.[39]

*Phronesis*, leadership and *techne*

A key point in understanding the nature of leadership practice in relation to current issues in school change and reform is to determine whether leadership is fundamentally a matter of wisdom or of technique. A recurrent goal of recent research on school change attempts to reduce the wisdom of leadership practice to a matter of technique, that is, to bound the discretion and judgment involved in successful leadership practice with sufficiently described, results-proven techniques of effective school and instructional design. Recent research on school restructuring claim that empirically-tested whole school reform plans or research-based comprehensive school reform strategies[40] reduce the dependence of schools on the discretion and capacity of local school leaders. The argument implies that if a sufficient knowledge base of practices with a demonstrable record of achieving student success is developed, leadership might simply become a matter of implementing the appropriate techniques to produce the desired results.

Aristotle's analysis of practical wisdom as a distinct form of knowledge provides a window into the relation of wisdom and technique. His account begins with a contrast between *phronesis* and a closely related form of knowledge, *techne*. *Techne*, the root for our concepts of art, technique and technology, is described as a "reasoned capacity to make."[41] *Techne* consists of well-developed science-like bodies of knowledge, such as architecture, construction and cooking, that guide the use of reason in creation. For Aristotle, the organized bodies of knowledge and know-how that could produce desired and regular results that constituted *techne* represented the primary incursion of reason human will into the unpredictable world of nature. The artisan uses *techne* to impose form and purpose on matter (or on organizations) to achieve a desired end. *Techne* shares the virtue of *epistemic* knowledge in that it is able to be represented apart from any particular practitioner. *Techne*, in other words, is portable. Following this line of thought, the knowledge that guides leadership practice could be a form of *techne*, in which school leaders acquire and develop organized models of change in order to improve instruction in schools. If leadership is a form of *techne*, then learning to become a leader then involves developing the requisite technical knowledge of best practices and putting the knowledge to work in the organization of schools.

However, Aristotle's account thus far does not resolve the relationship of leadership and *techne*. To start, there are several different kinds of *techne*. While all *techne* are productive, some result in artifacts (e.g. carpentry or weaving), while others result desired states of affairs (e.g. military strategy or ship navigation). While the application of the former *techne* rely mainly on the quality of the materials of production,[42] Dunne notes how the successful application of the latter *techne* "contrive,

through strategy and a talent for improvisation, to bring about a desired outcome in a shifting field of forces."[43] Such *techne* depending on the practitioners' ability to take advantage of luck and opportunity as much as on the necessary materials of production. Such "improvisational" *techne* point beyond the "craft knowledge" involved in the *techne* of production, pointing to a wider range of personal, individual experience as a necessary condition for successful application. For improvisational *techne*, knowledge overlaps with experience such that representation of the knowledge alone is insufficient for communicating the *techne*. For example, Schön shows how the work of an architect involves allowing the characteristics of the particular situation to dictate the selection and use of the appropriate technical knowledge. The expert practitioner "listens" to the idiosyncrasies of the particular design setting, and the rich experiential base of case-knowledge that mark expertise is brought to bear in recognizing the similarities (and differences) between the present situation and past experiences.[44] Further, the successful exercise of such *techne* requires improvisation both within the *techne* as well as improvisation in selection among different *techne*. While the art of the architect is primarily concerned with design, a designer in practice may require knowledge of plumbing, landscape, demographics and zoning. Improvisation and judgment are required to understand when these alternative *techne* are called for in successful design.

Aristotle's distinction between the knowledge (*techne*) that guides making (*poeisis*) from the knowledge (*phronesis*) that guides practice (*praxis*) is blurred in the case of improvisational *techne*. For example, while there are aspect of architecture that qualify as *techne*, the knowledge of a master architect reaches beyond *techne* to include the individual blend of experience and disposition characteristic of expertise. The allure

and market-value of a master architect lies precisely in this individual blend of characteristics. The attempt to reduce this improvisational *techne* to technique loses the characteristics that make the architect's work valuable. Improvisational *techne* involve a cultivated sense of the appropriate selection and implementation of other *techne* to guide the discretion and judgment of the practitioner. Dunne claims that the improvisational *techne* provide an important bridge between Aristotle's "official" version of *techne* and his account of *phronesis*.[45] The establishment of improvisational *techne* as a form of *phronesis* rests on the insight that since making (*poeisis*) is itself a form of practice (*praxis*), the *techne* must themselves be at the service of *phronesis*. *Techne* always exist in the service of a practitioner whose capacities and character serve as conditions for the use (and abuse) of the *techne*. The *phronesis* of the individual, cultivated over time, underlies the successful development and use of *techne*. In other words, the appropriate use of *techne* depends upon the development of *phronesis* for discerning and organizing and evaluating the use of technique. Leadership, as a form of *phronesis*, cannot be reduced to *techne*, because the appropriate use of *techne* depends upon the *phronesis* of the leader.

Classifying school leadership as a form of *phronesis*, does not deny role that *techne* play in school leadership. Dunne's analysis suggests that there is a hierarchical dependence between *phronesis* and *techne* such that the selection and use of *techne* require 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…"[46] *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. (In this sense, the function of *phronesis* to guide the choice of appropriate *techne* parallels the earlier described function of *phronesis* to guide the choice of the appropriate major premise in the practical syllogism.) Much instructional leadership involves the application of techniques such as collaborative program design, the development of formative evaluation systems, and school-wide planning practices to produce improvements in teaching and learning. The *phronesis* of leadership guides how and when these *techne* are used, and is able to evaluate when *techne* have done their work.

*Phronesis* and Artifacts

Another aspect of the relation of technique to practical wisdom shows how *techne* is crucial to understanding how to access *phronesis*. As discussed above, *phronesis* has proven notoriously difficult to capture and represent in systematic ways. However, if *phronesis*, in part, consists of the ability to use the *techne* appropriate for the task, then the patterns discerned in the products of *techne* should shed light on the character of the *phronimos*. The product of *techne* often takes the form of *artifacts*.[47] For Aristotle, an artifact represents a compound entity of matter shared with natural object, but whose form derives from the intention of its creator. Artifacts provide an externalized representation of designer's intentions regarding the phenomena in question.[48] While many discussions of artifacts focus on material entities such as tools or works of art, the significant artifacts from the perspective of school leadership include the designed programs, procedures and policies intended to shape or reform existing practices in the institutional context.[49] The analysis and use of artifacts such as organizational structures, work-day schedules, or compensation incentive systems, reflect designer's assumptions

how a system works and how it might be changed.[50] While not all exercises of *phronesis* result in artifacts, in most cases artifacts are involved in its expression. For example, developing a "state of affairs" such as strong professional community among teachers, a key task of good leadership practice, involves the development and use of policies, schedules and meeting agenda, and tools to evaluate the progress of development.[51] The ways in which these artifacts are developed and fit together over time reveals much about the practical wisdom of leaders.

The *phronesis* of leadership involves *techne* concerning both the development and the use of locally designed and received artifacts.[52] *Locally designed artifacts* to address emergent acute and chronic concerns in the school. Locally designed artifacts aim to shape practice either through developing a repository of appropriate responses to emergent issues, such as artifacts as that act as precedents for anticipated situations (fire drill policies or appropriate use policies for Internet browsing) or by instituting procedures that routinize practice around intended goals (such as standardized, locally designed curriculum across grade levels, or the structure of the daily school schedule). Another aspect of leadership *phronesis* is the ability to constructively use *received artifacts*. These artifacts are received from identifiable external sources, such as state and district authorities, teacher unions, textbook and curriculum publishers, or professional development providers. Examples of received artifacts include policies regarding assessment, budgeting and planning artifacts, or textbooks or curricula. Local leaders are not responsible for the design of received artifacts, but are responsible for artifact implementation and maintenance.

A key aspect of the leaders practical wisdom is to recognize how received artifacts may afford, rather than constrain, local instructional initiatives.[53] For example, some leaders may see received artifacts such as state mandated testing requirements as burdensome compliance measures external to the core practices of their school, while other leaders could see the same policies as opportunities to achieve existing instructional goals. Seeing opportunities where others see constraints is an important characteristics of leadership *phronesis*. The patterns in the problems recognized as worth solving and the methods developed to address problems, both key characteristics of *phronesis*, can be uncovered through understanding the ways in which leaders develop and implement artifacts to effect local instructional practices.[54]

The path from artifact to *phronesis*, however, is not easy to trace. First, not all artifacts provide a clear path to the problem-setting practices of designers. Many artifacts received into school contexts are significantly redesigned by local practitioners through implementation and subsequent use; others are deliberately filtered through a long design collaborative or committee design process that effaces the mark of individual designers. For example, district-mandated school improvement planning processes can be used in many ways by local practitioners – some of which actuate the intentions of the original designers, and others of which subvert or complement the intended design to meet the demands of the local culture. Much of the literature in the field of policy implementation is dedicated to understanding both the local sense made of received artifacts and the ways in which the original intention designed into artifacts is transformed through the implementation process.[55] However, using artifacts as conceptual tool to trace the path of redesign and sense-making through the layers of the organization may disclose the

practical wisdom of local actors.[56] Instead of tracing artifact through different levels of the organization to trace deviation from the original intention of the designers,[57] a focus on understanding *phronesis* uses the artifacts employed by successful practitioners to disclose the patterns of intention and design that characterize local practical wisdom. For example, Halverson discusses how local leaders in an urban elementary school interleave artifacts designed to promote faculty discussion, local formative evaluation practices, and school-wide planning to achieve externally imposed high-stakes accountability goals in student achievement.[58] In this case, the artifacts profiled in the study were identified by both researchers and practitioners as critical to helping the school meet accountability goals. The story of how leaders used locally designed and received artifacts to construct a local "system of practice" that helped teachers and students meet accountability goals provides a powerful opportunity to represent the *phronesis* of school leaders.

Second, the use of the term "artifact" to describe abstract entities such as programs, policies and procedures can blur the boundaries between design, use and practice. A district reading policy in schools provides a powerful example of the how an artifact can shape local practices. If the policy specifies the expected outcomes of reading programs in schools without specifying particular processes to be implemented by teachers, to what degree is the artifact received and to what degree locally designed? Complex assignations and evaluation of the characteristics of such abstract artifact could result in the empirical swamp of distributing appropriate credit for design features. If we keep in mind the connection between artifacts and *phronesis*, however, it should be apparent that the artifact provides an occasion to understand the *phronesis* of practitioners rather than the characteristics of the artifact. Thus the study of artifacts should not be

understood as an end in itself. Many researchers have shown that the development and distribution of complex artifacts to promote structural changes do not of themselves create instructional change.[59] Linking artifacts to *phronesis*, through *techne*, gives a way to study artifact development and implementation as a window into how leaders frame and solve problems. Opening a window onto leadership *phronesis* provides important pedagogical opportunities both for experienced and novice leaders. Showing how complex artifacts arise and are coordinated with competing priorities can problematize the application of technique in complex situations. Designing problem-based learning opportunities around artifacts can both disclose the *phronesis* involved in artifact design and use and allow leaders to select local artifacts as opportunities to reflect on their own practice.[60] Uncovering the stories of how successful leaders develop and artifacts to set and solve problems can offer a glimpse into practical wisdom so often lost in analyses of leadership practice.

## *Conclusion*

Researchers have developed a considerable knowledge base of the characteristics of successful schools and of successful innovations that produce instructional improvement. Yet documenting how these characteristics fit together in successful leadership practice remains a daunting challenge for educational researchers. The Aristotelian concept of *phronesis,* or practical wisdom, provides a complex framework to understand what successful leaders know in their practice. *Phronesis* is a complex cognitive ability, developed over time through character, which helps us apply and evaluate rules appropriately in the midst of experience. *Phronesis* is expressed through patterns of problem-setting and problem-solving that characterize the individual blend of

values, experiences and goals of practitioners. These patterns are built up through the habits of character, which in turn are established and deepened as a result of experience. The flexibility of knowing when to push and when to back off, of changing means, and of shifting goals is a characteristic of *phronesis*.

While recent educational research may be characterized by an attempt to reduce the practical wisdom of leadership to technique, Aristotle's account suggests that *phronesis* consists of the ability, in part, to choose from among and evaluate appropriate techniques. Flipping Aristotle's account on its head points to how the products of the techniques used by leaders, such as artifacts, may be used to trace how the *phronesis* of leadership practice is exercised over time. In other work, I have developed and used an analytic framework based on this analysis of Aristotle's ideas to consider the practical wisdom of exemplary leadership practice in an urban elementary school , and considered how multimedia representations of leadership practice in context might make such *phronesis* accessible to interested learners.[61] (Halverson 2002a). This local, context-bound nature of *phronesis* upon which this research is based anticipated some of the difficulties inherent in communicating *phronesis* to other schools through artifact exportation. The collaboratively developed artifacts so successful in shaping the instructional practices of the school can be received into other schools as foreign impositions; the ways in which local school leaders adapt received articles to their ends can be regarded by other school leaders as compliance measures to be completed and shelved. The inability of artifacts to create relevant practices along reinforces the need for context-rich representations of practice that reflect the complexity and situated nature of

leadership and teaching. In other words, the call for a knowledge-base to guide instructional change efforts needs to acknowledge and represent the value of *phronesis*.

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1 See for example Richard F. Elmore, Penelope L. Peterson, and Susan J. McCarthey *Restructuring in the Classroom: Teaching, Learning, and School Organization*. (San Francisco: Jossey-Bass, 1996); Karen Seashore-Louis and Sharon Kruse, *Professionalism and Community Perspectives on Reforming Urban Schools* (Thousand Oaks, CA.: Corwin, 1995); Fred M. Newmann, and Gary G. Wehlage, "Successful School Restructuring: A Report to the Public and Educators by Center on Organization and Restructuring of Schools," (Madison, WI.: Center on Organization and Restructuring of Schools, 1995); and Stewart C. Purkey and Marshall S. Smith, "Effective Schools: A Review." *Elementary School Journal* 83 no. 4 (1983) 52-78.

2 See Richard F. Elmore, *Building a New Structure for School Leadership* (Washington D.C.: Albert Shanker Institute, 2000) and James P. Spillane, Richard Halverson and John B. Diamond, "Investigating School Leadership Practice: A Distributed Perspective." *Educational Researcher* 30, no.3 (2002): 23-27.

3 Richard R. Halverson, "Building Professional Community: An Artifact-Based Perspective On School Leadership Practice." (Paper presented at the Annual Conference of the University Council of Educational Administration, Pittsburgh, PA. October 2002.)

4 James Hiebert, Ronald Gallimore, and James Stigler, "A Knowledge Base for the Teaching Profession: What Would It Look Like and How Can We Get One?" *Educational Researcher* **31** no. 5 (2002): 3-15

5 Jack A. Culbertson, "A Century's Quest for a Knowledge Base," in Handbook of Research on Educational Administration ed. N. J. Boyan (New York, Longman: 1988), 3-26.

6 See, for example, Joseph P. Dunne, *Back to the Rough Ground : Phronesis and Techne in Modern Philosophy and in Aristotle*. (Notre Dame: University of Notre Dame Press, 1993); Hans-Georg Gadamer, *Truth and Method* (New York, Crossroad, 1989) and Joseph P.A.M. Kessels and Fred A. J. Korthagen, "The Relationship between Theory and Practice: Back to the Classics," *Educational Researcher* 25 no. 3 (1996): 17-22.

7 Fred A. J. Korthagen and Joseph P.A.M. Kessels, "Linking Theory and Practice: Changing the Pedagogy of Teacher Education," *Educational Researcher*, 28 no. 4 (1999): 4-17.

8 Pierre Bourdieu, *The Logic of Practice* (Palo Alto, CA.: Stanford University Press, 1990)

9 Aristotle, "Nicomachean Ethics" in Basic Works of Aristotle ed. Richard McKeon (New York: Random House, 1941), 6.1

10 Kessels and Korthagen, "The Relationship between Theory and Practice," 20.

11 *Nichomachean Ethics* 5.10

12 *Nichomachean Ethics* 6.3

13 *Nichomachean Ethics* 6.11

14 *Nichomachean Ethics* 6.7, 6.8, 6.10

15 Dunne, *Back to the Rough Ground*, 272

16 Although Aristotle never explicitly uses the terms "practical syllogism" in the Nicomachean Ethics, (c.f. Alisdair MacIntyre Whose Justice? Which Rationality? (Notre Dame: University of Notre Dame Press, 1988 ) he does describe the process of a course of thinking that results in action in *On the Motions of Animals* 7, and provides an example of reasoning that results in action in *Nichomachean Ethics* 6.7. The practical syllogism has developed as a cornerstone of subsequent Aristotelianism,, c.f. Aquinas' account of the practical syllogism as a core aspect of Aristotle's moral theory that illustrates the core process of practical reasoning (c.f. St. Thomas Aquinas *Summa Theologica* (Prima Secundae Pars) q13 a1& a3; q76 a1)

17 c.f. Jana Noel, "Aristotle's Account of Practical Reasoning as a Theoretical Base for Research on Teaching," in *Philosophy of Education 1990*, ed. David P. Ericson (Normal, Ill.: The Philosophy of Education Society, 1991), 270-80.

18 Gilbert Ryle, *The Concept of Mind*. (London: Hutchinson & Company, 1949), 31.

19 Ibid., 32

20 Gary D. Fenstermacher, and Virginia Richardson, "The Elicitation and Reconstruction of Practical Arguments in Teaching," *Curriculum Studies* 25, no. 2 (1993): 101-114

21 Aquinas *Summa Theologica,* Part 1: sec2 q76 a1

22 Hubert Dreyfus and Stuart Dreyfus, *Mind Over Machine: The Power of Human Intuition and Expertise in the Era of the Computer* (Oxford: Basil Blackwell Ltd, 1986), 28.

23 Dreyfus and Dreyfus, *Mind over Machine*, 38-39

24 Herbert A. Simon, *The Sciences of the Artificial,* (Cambridge: MIT Press, 1987), 187.

25 See, for example, Ludwig Wittgenstein, *Philosophical Investigations* (New York: MacMillan, 1953) #74; William James, *Talks to Teachers on Psychology and to Students on Some of Life's Ideals*, (New York W.W. Norton, 1958), ch. 14; Donald A. Schön*, The Reflective Practitioner: How Professionals Think in Action*, (New York: Basic Books, 1983) 137-140.

26 *Nichomachean Ethics* 6.11.

27 *Nichomachean Ethics* 6.5.

28 Kessels and Korthagen "Linking Theory and Practice," 19.

29 *Nichomachean Ethics* 6.2.

30 Dreyfus and Dreyfus, *Minds over Machines,* 38ff

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31 *Nichomachean Ethics* 6.11.

32 See, for example, Paul Feltovich, Rand Spiro & Richard Coulson, "Issues of Expert Flexibility in Context Characterized by Complexity and Change. In. Paul Feltovich et al. (Eds.), *Expertise in Context: Human and Machine* (Menlo Park, CA: AAAI Press, 1997), 125-146; Philip N. Johnson-Laird, "Mental Models of Meaning," In A. K. Joshi et. al. (Eds.) *Elements of Discourse Understanding*. (Cambridge: Cambridge Press, 1981) 237-256.

33 Schön, *Reflective Practitioner*, 85, 128ff.

34 Chris Argyris and Donald Schön *Organizational Learning : A Theory of Action Perspective*. (Reading, MA.: Addison-Wesley, 1978); Schön, *Reflective Practitioner*.

35 *Nichomachean Ethics* 6.12.

36 *Nichomachean Ethics* 6.12.

37 *Nichomachean Ethics* 6.8.

38 *Nichomachean Ethics* 6.8.

39 Spillane, Halverson and Diamond, "Distributed Leadership."

40 See, for example, Robert E. Slavin, "Evidence-Based Education Policies: Transforming Educational Practice and Research," Educational Researcher 31, no. 7 (2002), 15-21; and Elmore, *Building a New Structure for School Leadership*.

41 *Nichomachean Ethics,* 6.4.

42 Aristotle's *Physics,* 199a33ff.

43 Dunne, *Back to the Rough Ground*, 256.

44 Schön, *Reflective Practitioner*, pp. 76ff

45 Dunne, *Back to the Rough Ground*, 355.

46 Ibid., 368

47 See, for example, Aristotle's *Physics* 2.1; *De Anima* 2.1.

48 See, for example, Donald Norman, Things That Make Us Smart, (New York: Addison-Wesley, 1993), 21; Simon, *The Sciences of the Artificial*, 36; Marx Wartofsky, *Models: Representation and Scientific Understanding* (Boston: Reidel. 1979), 204ff.

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50 Richard Halverson, "Representing Phronesis: Supporting Instructional Leadership Practice in Schools." (Ph.D. diss., Northwestern University. Evanston, IL., 2002)

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52 Halverson, “Systems of Practice.”

53 Halverson, “Representing Phronesis.”

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55 See, for example, James P. Spillane "State Policy and the Non-Monolithic Nature of the Local School District: Organizational and Professional Considerations." *American Educational Research Journal* 35 (1998):33-63; James P. Spillane and Charles Thompson "Reconstructing Conceptions of Local Capacity: The Local Education Agency's Capacity for Ambitious Instructional Reform." *Educational Evaluation & Policy Analysis* 19 no. 2 (1997): 185-203; David K. Cohen and Deborah Ball, “Instruction, Capacity, and Improvement,” (Washington, DC.: Consortium for Policy Research in Education, 1998); and Michael Lipsky, *Street-Level Bureaucracy: Dilemmas of Individuals in Public Services*, (New York: Russell Sage, 1980).

56 Karl Weick, Sensemaking in Organizations (London: Sage Publications, 1996)

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58 Halverson, “Systems of Practice.”

59 See, for example, Elmore, Peterson and McCarthey, *Restructuring the Classroom*; and Cohen and Ball, “Instruction, Capacity and Improvement”.

60 Schön, *Reflective Practitioner*; Viviane M. J. Robinson, "Problem-Based Methodology and Administrative Practice." Educational Administration Quarterly 32, no. 3 (1987): 427-451.

61 Halverson and Zoltners, “Distribution Across Artifacts;” Halverson, “Representing Phronesis” and “Systems of Practice.”