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## How leaders use artifacts to structure professional community in schools

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Why does professional community play an important role in school reform? The key to understanding how schools engage in and, more importantly, resist change is found in the organizational structure of schooling. During the 1970s and 1980s, organizational theorists applied the concept of *loose coupling* to understand schools' structures. Weick (1976; 1996) and Meyer and Rowan (1983) traced how schools' structures evolved to allow considerable autonomy for teachers and specialists. The result was that teachers were assigned responsibility for practices within the classroom and administrators (school leaders) worked on school maintenance, such as controlling the entrance and exit conditions for students and staff and buffering teachers from external interference (and inspection). School cultures evolved to cement the loose-coupling between administrative and instructional practice into place, both formally (through collective bargaining agreements that preserved teacher autonomy), and informally (through resistance to intrusions by leaders into classroom instructional practice).

In the 1990s, professional community emerged as a central topic for reforming the cultures of loosely coupled systems. Professional communities reflect a school's ability to develop and act upon a shared understanding of practice. Strong professional communities in schools that promote collective responsibility for student learning and norms of collegiality among teachers are associated with higher levels of student achievement (Little 1982; Newmann and Wehlage 1995; Lee and Smith 1996; Louis *et al.* 1996). Through developing a shared understanding of the benefits and constraints of existing instructional practices, a school's professional community provides the capacity for collective action. Most

important, however, professional communities reflect the levels of trust around instructional practices among the adults in schools (Bryk and Schneider 2002; Halverson 2003). Trust is a critical resource for change in loosely coupled systems. Leaders and teachers must establish considerable levels of trust to set aside traditional protective behaviors in order to work together to build toward alternatives. Establishing professional community helps build the kinds of relational trust in schools that helps teachers set aside structures that protect their autonomy and relax the cultural barriers for collaborative action.

Halverson (2003) suggests that leaders create professional community by employing structures to facilitate certain kinds of social interaction in schools. Coleman (1988) describes the stages of trust development: first, actors need to *interact* around common interests, second, these interactions lead to the development of *obligations* between actors; and third, actors have the opportunity to *fulfill* their obligations. Professional community is then a form of organizational trust that results from structuring interaction through which professionals incur and satisfy obligations to improve student learning. The role of school leaders in stimulating professional community is to create structures for building and fulfilling obligations around issues vital to instructional improvement. In this chapter I argue that leaders create the conditions for strong professional communities by sequencing structures to: initiate interaction; facilitate the development of obligations; and provide systemic feedback on the degree to which mutual obligations have been met. If professional community is the path for tightening the coupling between leadership and instruction in schools, then this research aims to provide leaders and teachers with a vocabulary for understanding the tools necessary for making the transition from our current schools to the next generation of schooling.

### Exploring how artifacts influence practice

A key function of school leadership is to influence the local practices of teaching and learning (Spillane *et al.* 2004). In part, leaders seek to influence the practice of others through the *artifacts*, or programs, policies and procedures they develop and deploy (Halverson 2002). The concept of an artifact as an intervention designed to shape the actions of others is rooted in human-computer interaction and activity theory research (cf. Norman 1991; Engeström 1993). In schools, artifacts include any entities designed to influence others' practice. Leaders build and adapt artifacts such as role positions, daily schedules, faculty meetings, and meeting agendas to shape instructional practices. The analysis of artifact features provides an occasion to examine how designers thought about the practices they intended to effect (Halverson 2003; 2004).

The argument developed here examines artifacts to trace how leaders think about how they spark and direct relational trust-building efforts in schools. The argument relies on several recent ethnographic research studies including: a three-year study of how leaders in an urban preK-8 school created the conditions to improve student learning; a two-year study of how an urban school leader created conditions to improve learning for students who traditionally struggled; and a year-long investigation of how school principals developed and adapted teacher evaluation tools to improve teaching and shape professional norms. Each study included extensive interviews, observation and document collection. All data were coded to identify the artifacts involved in school leaders' work, the degree to which leaders adapted existing artifacts to new and emergent purposes, and the degree to which artifacts interacted with each other and with social norms to create emergent forms of interaction.

The studies suggest that leaders sequence different kinds of artifacts to create and maintain professional community. To identify the different kinds of artifacts involved, I first provide a brief description of leadership practices at work in the three school cases. Then I offer a typology of different kinds of artifacts to describe three stages of tools leaders use to shape social interaction.

### *Case 1: Adams School – instructional leadership in an urban school*

When Principal Therese Williams became principal in the late 1980s, Adams School (pseudonym) had one of the worst student achievement records in Chicago. Williams faced considerable challenges reshaping instructional practices at Adams over her 12 years as the school's principal. Adams was a K-8 school with over 1200 students (98 per cent free and reduced lunch; 99 per cent African-American) spread across two buildings. In the beginning, staff in the two buildings barely tolerated each other, and Williams saw her initial task as building a shared sense of purpose. She began by enforcing common student behavioral standards within the buildings and creating social opportunities for staff to interact across buildings.

Williams and her staff recognized that collegiality needed to pay off in terms of improved student learning. Their analysis of test scores from the early 1990s led to a general agreement that early literacy provided the critical instructional gateway that rippled across subsequent grade levels. Instead of mandating a curriculum that teachers could subvert or ignore, Williams and her literacy coordinator sought to help staff recognize the nature of the problem in literacy instruction and to take ownership of the design for a solution.

Their first initiative, Breakfast Club, was designed as a monthly

opportunity structured to allow teachers time to discuss recent research in early childhood literacy. Williams provided a hot breakfast for teachers, staying in the background as teachers struggled to understand research articles in terms of their own practice. The Breakfast Club was a poorly attended voluntary program in its first year, but attendance increased regularly after word got out that discussions included valuable organizational information. Breakfast Club blossomed into a key organizational resource. As one Adams teacher remarked: 'We found out that we enjoyed talking with one another, that it was a benefit. Because we don't have a chance to talk with one another – if you leave your class and start talking to one another, teachers don't have that luxury. So this gave them a chance to talk with one another.' In the second and third year, Breakfast Club discussions began to turn more toward teachers volunteering to try the research-based practices in their classrooms and report back to the group, providing a valuable form of real-world feedback on the research. The literacy coordinator and teachers ended up designing a balanced literacy approach for the school.

The most important outgrowth of Breakfast Club, however, was realization that the school needed structures to provide internal feedback for their program design. The standardized test scores provided neither sufficient nor timely information for program refinement. As the Adams Literacy Coordinator noted:

We realized that the tests themselves didn't give us much information about what we could do to improve our scores – mainly because we received the results well after we could do anything about it. We thought about a more frequent assessment program . . . that would help us tell where the children were.

Several teachers worked with the Literacy Coordinator to develop a series of Five-Week Assessments to provide performance benchmarks for teachers. Initially, teachers ignored the results of the Five-Week Assessments because the first benchmark tests did not obviously relate to their curriculum or the standardized test. Teachers then reverse engineered the standardized test to construct examinations that provided increasingly accurate predictions about how students would fare on the language arts aspects of the examination. After three years of development, the Five-Week Assessments were recognized by Adams teachers as important sources of feedback for instruction.

Principal Williams fought against developing too many programs or policies that would spread valuable resources across too many instructional goals. She was committed to letting the school's chosen artifacts mature. Her main tool against program bloat was her use of the district-mandated School Improvement Plan (SIP). The district required an SIP that linked

discretionary budgetary resources to explicit instructional goals. Williams used the planning process as a framing tool for reform within the school. Teachers were required to argue for the need for new initiatives or continuing support for existing activities, and these public discussions served to inform the school community about the instructional priorities. Williams designed the SIP to link artifacts to outcomes so that teachers, parents, the district and the local school board understood the school's rationale for instructional investments. The professional community developed at Adams supported efforts to build new artifacts at the point where the previous structures left off, and ended up improving language arts learning for students across the school (Halverson 2003).

### *Case 2: Franklin School – leadership for social justice*

Many obstacles for improving learning for all students are tacitly embedded in existing service delivery systems. Principal Deb Hoffman recognized that traditional service delivery models often served to perpetuate the very obstacles to learning they were originally designed to overcome. Her development of an Integrated Service Delivery model (Frattura and Capper in press) in Franklin Elementary School demonstrated how she used a variety of artifacts to challenge and reshape existing practices at multiple levels in her school. Integrated service delivery (ISD) presented an organizational approach to reshaping traditional 'pull-out' strategies for special education, English as a second language, and speech and language pathology students. The central strategy of ISD was to reduce class size by pairing special education and classroom teachers to provide mainstreamed services. Principal Hoffman commented: 'If somebody said "cite the three things that changed Franklin school," I would say reallocating resources to reduce class size, professional development and building the capacity of the staff.' In addition, Principal Hoffman acquired additional resources, redesigned hiring and student assignment, and managed the interface with an initially skeptical community.

Franklin was a K-2 school located in a small city with about 360 students (60 per cent white; 25 per cent free and reduced lunch) and 60 staff members. It also had a significant immigrant population requiring bilingual support. Shortly after Principal Hoffman arrived as a first year administrator in 1997, she realized that the very students with most trouble reading and writing were also being pulled out of the classroom for support services. These students, Hoffman reasoned, needed the regular classroom context experience more than children who remained in the classroom. Why not, then, reverse service delivery to bring specialist to students rather than students to the specialists?

Sparked by a district strategic planning report, Principal Hoffman

gathered a team of interested teachers in early 1998 to craft a successful Comprehensive School Reform (CSR) grant to restructure service delivery. Hoffman used the master schedule to reassign teachers, specialists and students to smaller class sizes, worked with her staff to build a professional development program focused on differentiated instruction, and focused new hiring practices on acquiring a bilingual resource specialist and dual-certified teachers to fill the expanded classroom sections. Many teachers, parents and specialists struggled initially. One teacher wrote: 'instead of a kinder, gentler and more open school, the situation here is more volatile than ever. Do you think this atmosphere is best for kids?' After initial resistance, however, most Franklin parents and teachers began to realize the value of ISD, and student achievement scores for all students improved.

Integrated service delivery represents a comprehensive school reform plan as a series of artifacts that reshaped how staff can engage children in reformed teaching and learning practices. Principal Hoffman's work illustrated how artifacts already in use could be repurposed to structure changes in the school's professional community. She realized that the changes in practice would go as far as the teachers allowed, and followed a strategy to help teachers learn new practices, hired new teachers who could work together in classroom teams, and used the student assignment process to create optimal matches of teachers, specialists and students (Halverson 2004).

### *Case 3: Structuring formative feedback to improve reading*

Rural and small-town school districts across the USA have been faced with a recent history of downsizing, diminishing resources and lower enrollments. Pearson Elementary School (pseudonym), in a rural Midwestern district, was opened as a K-6 school in a building formerly occupied by a junior high school. Principal Stein led the Pearson teachers and staff to assemble a powerful configuration of artifacts for generating and using achievement data to improve reading scores across her schools:

The thing I love about data is that it helps me be more of an instructional leader. If I do focus on it, it helps me be very intentional about what I expect in an observation, what my expectations are for my school. I can get data on just about anything we want to talk about, but then it becomes weeding through it, and what's the important data. What is it – some data we'll get and it doesn't give us a picture of anything and we kind of start to create a picture.

Principal Stein integrated the use of data across her work as a school leader, and worked with teachers to repurposing in-house expertise to develop their data-based literacy program.

Like Principal Hoffman at Franklin, Pearson's Principal Stein worked with her staff to acquire a CSR grant that led to staff capacity to collectively engage in instructional improvement. During the latter stages of the Pearson CSR grant, the staff targeted literacy skill development as the focus of their instructional design efforts. The Principal and the Title 1<sup>2</sup> teacher led the development of a sophisticated, locally designed process for measuring the effects of literacy program design on student learning. The Title I teacher, a veteran reading specialist with training in Reading Recovery, worked with teachers for six years to reconfigure the K-2 reading program. The effort's cornerstone was Guided Reading (GR), a program that develops student strategies for processing text at increasing levels of difficulty (Fountas and Pinnell 1996). The Pearson program relied on running records – individualized, ongoing formative student assessments – to help teachers organize groups for reading activities. The Title I teacher organized her schedule to spend time working with groups of students and teachers in each classroom in order to get a sense of teachers' practice and student performance. She assembled binders of running records information to track student progress over time, and she worked with teachers to supplement the GR assessments with formative feedback tools from Reading Recovery and other district assessments.

Taken together, these data provided a powerful resource for measuring program quality. Still, the data would have little effect until teachers used it to inform instruction. Pearson's leaders realized the value of structured opportunities for reflection in making formative data useful. The Title I teacher met weekly with every teacher and monthly with the K-4 and special education teachers to discuss and disaggregate the data. When teachers began to realize that GR was not addressing the needs of several students, one teacher shared her experience at an Orton-Gillingham phonics-based program workshop. After several other teachers attended the workshop, the Pearson team began to integrate Orton-Gillingham activities and assessments into the literacy program for selected students. The formative assessment program helped staff anticipate the results of the state examination. The Title I teacher described how she was 'rarely surprised, because the running records help to determine where the children should be on the [district assessments], which predict the [state exams] well.'

### **How leaders sequence instructional improvement**

These abbreviated case histories show the wide-ranging ways that school leaders spark instructional changes. In prior work (Halverson 2003) I proposed a typology for categorizing these efforts according to their origins. *Locally designed artifacts* are created by leaders and teachers to shape

local practices; *received artifacts* come into the school community already developed by identifiable sources (e.g. through districts or curriculum developers) and are adapted by leaders and teachers to local uses; and *inherited artifacts*, such as the academic calendar and the disciplinary organization of the curriculum, predate the work of teachers and leaders and provide the context for the local system of practice. Building professional community requires leaders to both develop new artifacts and use received artifacts against the inherited context to create legitimate occasions for staff interaction.

However, analysing how leaders build on the emergent trust and capacity for collective problem-solving and knit instructional improvement programs into a whole cloth requires another set of distinctions between artifacts. Here I propose the sequence of *Stage 1*, *Stage 2* and *Stage 3* artifacts to capture how leaders sequence instructional improvement activities that, in the end, develop professional community.

### *Stage 1 artifacts*

Stage 1 artifacts are used to spark the initial conversations in school communities reluctant to engage in professional community and catalyse opportunities that overcome the isolating effects of loose coupling in schools. At Adams, developing the capacity for collective change first required that teachers could stand to be in the same room together. Breakfast Club legitimated time for teachers to discuss instructional issues and collectively reflect upon the changes necessary to improve teaching and learning. This need to establish basic social norms for interaction was not as pressing at either Franklin or Pearson. Still, both Principals Hoffman and Stein used trust-building activities to launch their CSR development and implementation in their schools by relying on existing cultures of teacher interaction to establish the capacity for collective action in new areas.

Received artifacts can also act as catalysts for sparking professional community. High-stakes accountability policies sparked Adams School, and to a lesser extent both Franklin and Pearson schools, to constructive action. Similarly, CSR grants acted as a Stage 1 artifact that provided a focus for instructional improvement at Franklin and Pearson. The grant development process created opportunities for teachers to come to a common understanding of the change process; assembling the different pieces of the grants gave design team members chances to fulfill obligations to participate successfully in a common endeavor. Once awarded, the trust developed through the grant writing process and structures provided by the CSR extended this initial capacity development into the ability to make real changes in student learning.

Received artifacts differ from locally designed artifacts as catalysing

agents. While the features of locally designed artifacts are built by the people who will use them to catalyse change, received artifacts are built by others to spark change from a distance. The use of a received artifact depends upon how local users make sense of artifact features in terms of local priorities. The ability of local leaders to allow received artifacts to have local effects shows why implementation can also be considered as a form of design.

The reception of high-stakes accountability policies presents an instructive case. Principal Williams emphasized accountability to show her staff that the need for change was coming from outside the school, and not solely from the school administration. As the Adams Literacy Coach explained: 'I think with the onset of (State test), it did something very interesting that almost forced us to work as a team.' This shift stemmed from Williams' ability to appropriate accountability policies to bolster existing instructional initiatives while at the same time allowing her to establish an organizational rhetoric that the leadership team were on the same side as her staff – both groups could be united in a common effort to improve teaching and learning for students.

### *Stage 2 artifacts*

Leaders used Stage 2 artifacts to focus newly formed professional communities on making problems tractable and solvable. Data reflection retreats and collaborative curriculum design efforts built on the prior efforts of Stage 1 artifacts, converting emergent professional trust into authentic professional interaction. Breakfast Club discussions at Adams encouraged teachers to experiment with new literacy practices in their classrooms, but they were uncertain about how to proceed. Teachers and leaders began talking about developing an assessment, based in the teaching standards, to test the degree to which new practices were helping teachers reach their instructional goals. The Five-Week Assessment built on and focused the insights of the Breakfast Club into a process that helped refine the scope of the Adams professional community into the ability to make instructional problems tractable.

Leaders use Stage 2 artifacts to focus in on certain aspects of a domain in order to allow the details of specific problems to stand out and become more manageable. Pearson's leaders, for example, assembled a series of Stage 2 artifacts to focus attention on what the school perceived as the key instructional problem in the school: early childhood reading. Pearson leaders constructed Stage 2 artifacts that transformed the problem space from the vague challenge of 'teaching children to read better,' to 'using what we already know about reading to build a more effective learning environment for K-2 children.' The formative student achievement information also

allowed the staff to tweak the instruction program as it unfolded in order to improve learning opportunities. The Pearson staff used the process of developing a collaborative approach to reading instruction as an occasion to assemble a locally designed (the teaching schedule and assessment binders) and received artifacts (formative assessments, redefining the responsibilities for Title 1 and Special Education positions) into a complex system of practice that focused their existing instructional expertise.

Stage 2 artifacts can also redirect instructional capacity to new uses. Franklin's veteran teaching staff had wide experience in posing and solving a variety of instructional problems, but these had led to divisions between classroom teachers and specialists. Principal Hoffman used integrated service delivery as an opportunity to help teachers 'bridge' their expertise into the new domains of differentiated instruction and collaborative teaching. Hoffman used the redesigned professional development program and dual certification of new faculty positions to build collaborative expertise that enabled the school to engage in a deeper understanding of integrated service delivery.

### *Stage 3 artifacts*

Finally, leaders use Stage 3 artifacts to link disparate initiatives and reinforce instructional program coherence (Newmann *et al.* 2001). Developing Stage 3 artifacts, such as school improvement plans, CSRs and annual budgets, requires leaders and teachers to commit to a common instructional framework and to use this framework to guide innovation and professional development. This, in turn, reinforces professional community, symbolically demonstrating the importance of core innovations to the wider school community.

Leaders use Stage 3 artifacts to rein in the divergent initiatives at work in most schools. Stage 3 artifacts produce (and reflect) a publicly available plan of action that shows how individual artifacts are sequenced to produce intended effects. For example, after developing and sequencing a series of Stage 1 and Stage 2 artifacts to enhance her school's capacity for integrated service delivery, Principal Hoffman used Franklin's master schedule as a core process to match teachers and students together in effective instructional combinations. The master schedule reflected her commitment to integrating the principles of ISD into the core instructional practices, as well as to limit special needs population of any classroom to 30. Once constructed, the master schedule serves as a public enactment of how the Franklin priorities play out in everyday practice.

School improvement planning provides a Key Stage 3 artifact in many schools. However, loose coupling often insulates classrooms from group discussions of change. These school leaders recognized the role of

improvement plans in moving talk into practice. The Adams School, for example, used a year-long process of agenda-setting, gathering data on effectiveness, review and new plan development that asked teachers to consider what was worth supporting in the school, and teachers were called on to become advocates:

People need to stand up for themselves at the meetings, I can't stand for them. After many of the meetings people would come up to (the Literacy Coordinator) and let her know things they wanted but didn't bring up, and (she) would say how they needed to step up and speak their minds at the meetings . . . Everything is tied into the SIP somehow, that's what gives it credibility in the school. The budget, and the initiatives are all tied in, if you want to participate, you have to come early and stay late.

The Adams SIP development process provided an umbrella for organizing the array of instructional programs while at the same time acting as a symbolic representation for what the school felt to be their working instructional vision.

### **Conclusion**

Over the course of their reform efforts, we observed how each school demonstrated strong professional communities in action. The principals did not begin with the intention of developing professional community, but communities resulted from their efforts to address the key problems of instruction. Each leader recognized the importance of collaborative action in creating systemic change in their schools. Their goal was to improve student learning, and their means were varied. The lesson is that professional community is a valuable by-product of efforts designed to engage staff in resolving the chronic problems of teaching and learning. As Adams' Principal Williams explained: '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.' Their goal was to improve student learning, and their means were varied. The lesson is that professional community is a valuable by-product of efforts designed to engage staff in resolving the chronic problems of teaching and learning. The artifacts themselves prove to have little power other than their potential to communicate intent. Actualizing the potential of artifacts requires leaders to work with teachers to create a receptive culture for implementation, and artifacts that served to catalyze professional development in one school could be dismissed as irrelevant or resisted in another. The idea of staging artifacts is important. If successful

systemic change depends on tighter coupling of administrative and instructional practice, and if professional community is key to linking leadership and teaching, then leaders need to sequence activities to help teachers toward more collaborative forms of work. Artifacts provide a window on how leaders think and act about this dual process of developing structures and cultures. They are not ends in themselves: the tools of a master craftsman can simply be doorstops in the hands of a dolt.

In *Learning Policy*, David Cohen and Heather Hill (2001) argue the obvious point that policies intended to influence complex instructional practices stand a better chance of implementation when they allow opportunities for practitioners to learn the requirements of the new policies. Understanding how good school leaders use artifacts to develop and marshal the capacity for systemic change by increasing collective understanding could help on both ends of the policy spectrum: policy makers could use this knowledge to build better tools for local use, and leaders and teachers interested in improving their practice could use this research to guide their own development efforts.

## Notes

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- 2 Title 1 is a US Federal Education program designed to provide supplemental instructional services for disadvantaged students.

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## Dedication

To friends and colleagues in our own national and international professional learning communities, and with special memories of Ray