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From Mental Models to Monday Morning: Building infrastructures for school change from the bottom up
— Lewis Rhodes

*Can the educational establishment Ð the interwoven network of foundations,
associations, government agencies, and the schools they support Ð become a
learning organization? Lew Rhodes has devoted his career to finding affirmative
ways to answer that question. He was one of the first people to apply Dr. W.
Edwards Deming's approach to quality management in education, in part as an
Associate Executive Director (from 1987 to 1995) at the American Association of
School Administrators. Working with us, he framed this piece around his
professional preoccupation for the past three decades: Translating a theoretical
view of the nature of school dilemmas caused by mental models into direct,
workable tools for sustaining significant improvement on Monday morning.*

When I came into education in the 1950s, a new role was emerging, eventually
labeled "change agent." I played out that role through the 1970s, in projects funded
by the Ford Foundation and later by the federal government. My projects were
"successful." They "worked" — that is, they demonstrated new ideas, and produced
better results, but never for long, and never in a way that generalized from small
pilot projects to reaching all children.

My role, meanwhile, placed me in the middle — between theoreticians on one hand,
who enthusiastically saw the exciting potential of specific school reforms, and
classroom practitioners on the other, who demanded: ". . . but what do we do about
them on Monday morning?" I was attracted to the theoreticians whose minds (like
mine) liked to begin with a "big picture." But all the research on change, as well as
my own experience, suggested that the theories developed by those who had to act
on Monday were the most powerful. Mental models emerging from direct

experience last the longest.

This is frustrating for theoreticians, because the experiences that most people learn from simply reinforce their old mental models. It wasnÕt until the arrival of the telescope — allowing people to look at the heavens and see for themselves — that people began to accept the new cosmology of Copernicus and Galileo. Or as Galileo supposedly claimed, "Once something is seen, it cannot be unseen." Perhaps, then, our older education reform efforts were hampered because we lacked a "telescope-equivalent" for seeing into the human mind.

But in recent years, with computers and CT-scans, we can observe the physical nature of human learning. What we see seems to confirm many of the "theories" proposed in the past. It suggests that each child is not a passive receptacle for information, but is born with an innate biological capability for learning, that is fostered by some kinds of interactions and stifled by others. In other words, teachers are to children's mental capacities as pediatricians are to their physical capacities — the conveyors of knowledge, delivered through continual interaction, that is needed to help them develop into healthy adults.

Consider the structure of a healing process for a child. No one in the medical profession questions that the actual healing takes place within a bounded system called "the individual child." The doctor and the hospital take measures to set up an environment within which the patient's body (and mind) can best manage his or her own healing. This "system's processes" ensure that everyone's efforts stay aligned with "results" even though roles are played out in different places and time frames.

ACTOR	PATIENT	DOCTOR	HOSPITAL ADMINISTRATORS AND STAFF	MEDICAL COMMUNITY
ACTIVITY	Manages the *healing* over time	*Curing*: removing constraints on healing and opening opportunities for healing, thus helping the patient manage healing over time.	"*Hospitaling*": providing an environment and tools that help the doctor manage curing over time.	*Knowledge-developing*: Developing, testing, and sharing the knowledge that makes hospitaling and curing more effective over time.
TIMEFRAME	Moment by moment	Hour by hour	Year by year	Continuous

From this perspective, the more information that travels back and forth through the system, the more effective everyone can be. No one holds the pediatrician or hospital accountable for the patient's temperatures, pulse rates, and blood counts; only for doing something about them. Everyone in the system knows that those measurements are indicators of a child's health at any given moment, and that the essence of high-quality medical practice is interactive responsiveness among all the

parts of this system to that data. What might we see if we extended that way of understanding to children's learning?

ACTOR	STUDENT	TEACHER	SCHOOL DISTRICT ADMINISTRATORS AND STAFF	EDUCATIONAL COMMUNITY
ACTIVITY	Manages the *learning* over time	*Teaching*: removing constraints on learning and opening opportunities for healing, thus helping the student manage learning over time.	*Schooling*: providing an environment and tools that help the doctor manage curing over time.	*Knowledge-developing*: Developing, testing, and sharing the knowledge that makes schooling andteaching more effective over time.
TIMEFRAME	Moment by moment	Hour by hour	Year by year	Continuous

Unfortunately, there is no established mental model, similar to that in the medical professions, from which to organize education's roles and relationships. Such a framework would start with unquestioned acceptance of the innate capacities of childrens' minds, and would define from that reference point all of the critical interactions necessary to educate them. With that framework missing, there is very little interactive responsiveness up and down the system. There is no way to see and understand the system's connections; roles are isolated; there is little trust. We hold individual principals and teachers accountable for student results. We set up rewards and punishments as "incentives," and when teachers and principals suggest that the results are beyond their control "in the system," we blame them for being defensive and pour millions of foundations, government, and industry dollars into efforts to "fix" them instead of fixing the system's interactive relationships.

I saw this problem when I worked with Dr. W. Edwards Deming in the late 1980s. I often talked with teachers and superintendents about applying Deming's ways of thinking to the continual improvement of their work. These two dissimilar groups were actually very much alike: they were committed, caring people, but their desire to make a difference was continually thwarted by factors and forces "in the system" they felt they couldn't control or make sense of. Like cosmologists in Copernicus' time or physicians before Harvey, they had trouble seeing the actual system that influenced their actions. Yet they continually felt it— and fought it. Without a grounded, day-by-day awareness of all the interactions among the parts of this system, then the system is an enigmatic enemy. Everyone perceives it as somehow resisting their "best efforts" (as Deming called them) to continually improve.

How, then, can we build the necessary awareness of the nature of the system we are already part of? Theorists and research can inform it, but that understanding has to

emerge from the inside out — from day-by-day practice as teachers and administrators. Hence these two exercises, aimed at helping people move from classroom and school "Monday morning" action to their "mental models" of the system as a whole, and back to action again.

Team Exercise: Connecting to "Purpose"

Purpose: To raise awareness of new techniques in context of the school district as the sustainable unit for supporting change.

Overview: Developing a perspective from which staff and community participants in a change effort can become aware, simultaneously, of both the forest (the district) and the trees (the classroom process) — and particularly how the fundamental nature of the trees determines the shape and nature of the forest.

Time: Several hours.

Participants: Members of a group working on a change plan for a school system.

Some of us may peek at a jigsaw puzzle's box cover to get the "big picture" before starting. In the same way, solving an equation can be easier if one sees whatÕs expected on the far side of the "=" sign. Often, however, people implementing new techniques or technologies in school start without connecting them to everything else already at work in the "big picture." In this exercise, you rethink your new approaches within a framework of "given" conditions that approximate the psychological, social, and economic realities of today's schools. In one school district using this exercise, the understanding of technology was shifted from a cost that must compete with other resource needs, to a value-adding system connector.

1. Divide the group into three sub-groups. Each has a common task: to imagine, envision or sketch the characteristics of a school district (not a school, but a whole district). But each is limited to addressing only one of these three purposes:

• You would want your child's elementary and secondary school years to take [or have taken] place there; or

• You would want to work there if you were an educator; or

• You would want to support it with your taxes if you were a local business person.

2. When the individual groups are ready to describe the major features of their "district design," bring them together to compare their visions. Where are they similar? Where are they different? Why? Use the differences and similarities as starting points to understand the "common sense" (or reasoning) that led each group to their key points. What did one group see that the others may not? Is any one perspective more valid than the others?

3. In the same large group, develop a vision of a new district. If the district must function as a sustained system that simultaneously addresses the needs of students, staff, parents, and community, how might its present components be connected differently?

4. Now add three additional requirements to your envisioned system, representing three new realities that schools have had to deal with:

Condition A. You have a staff which needs (whether they can articulate it or not) to understand how they personally "fit" or relate to the organization's purposes, to continually learn more about the effects of their own (and each others') actions so they can improve each day, and to realize their potential capacities to make a difference for children.

Condition B. Due to changes in local and state economic conditions, you cannot predict the types of students who will attend your schools within the next three years: their socio-economic levels, ethnicity, previous scholastic performance, or family structures. All you know is that each will need (psychologically) to understand how they personally "fit" or relate to the world around them, to continually learn from the consequences of their own actions as they continually expand their learning capacity, and to experience the satisfaction of realizing their potential capacities.

Condition C. In your community and its schools, you have people who use information technologies in dramatically new ways. They use them for collaborative work, for electronic commerce, for access to information on demand, for analysis of continuing information about results (so they can better understand how to produce them again), and for simulation and experimentation with new ideas. As participants talk about these conditions, they will tell stories describing their experiences with them [usually outside of school settings]. Build on this collection of experience to explore possibilities for using information to support interactions and relationships necessary to operate the school system they envisioned (in step 3) that meets the needs of its students, staff, parents, and community.

5. Now, as a total group, sketch an initial design for "what to do Monday morning." What resources are already accessible in the district or community? What new kinds of connections would be required to begin operating in the way you have imagined it?

Tool kit: The Growth Record

Purpose: To move beyond the hopelessness and helplessness that comes from confronting a complex system.

Overview: A learning-as-you-go tool for evaluation and reporting. It is designed, first, to meet the learning needs of individuals gathering information, and second, to embody the tangible relationships between them and others in the system who share a responsibility for common outcomes.

This tool for documenting the continual learnings of daily classroom, building, district or project management has served as the core of several information reporting systems implemented in federal, state, and local education programs, starting with the US Office of Education's National Drug Education Program in 1972. Two generally available reports on this include: "The Communication of Experience — A Guidebook for the Management of Information by U.S.O.E. Arts

Education Project Directors," [USOE contract # 300-78-0580, Applied Management Sciences, 1978] and available through ERIC; and The Growth Record: A Navigational Tool for Leaders (1997); American Association of School Administrators & FamilyEducation Network)."

We developed The Growth Record specifically to cut through the culture of traditional reporting and evaluation systems. In schools, as in most organizations, required information flow is the most visible evidence of the nature of relationships between the system's parts. Most conventional reporting systems unwittingly communicate the idea that "We donÕt trust you;" or, at a minimum: "We trust you, but prove it." Fear permeates such a culture. People know that if they put something down on paper that shows "problems" — or discrepancies between the planned-for gain and the actual accomplishments — their work may be judged negatively. So they only report the good stuff, and everyone loses the opportunity to learn from each others' daily trial and error experiences.

I think of the Growth Record as a navigational tool like a ship captain's log. It is valuable as a template for a management team exercise — or for solo reflection. It captures snapshots of action over time, enabling people to reflect and continually re-plot their course, as they encounter conditions they could not anticipate. It can also be used as a "report" that enables the next-more-central level of the system [e.g., central office, state education agency, national project officer] to understand needs and better target assistance. In one case, a program used this tool to feed a "Shared Experience Bank" including the most valuable learnings that are typically ignored Ð from the efforts that didn't work.

Initiating the Growth Record

This experience "log" consists of two sets of linked questions, all to be asked at the beginning of a change initiative:

1) Vision (Why we proceed):

• When you first heard about the possibilities of this change project, what was your original vision (or sense) of what the outcomes could be: for your school district, community, and self? Describe whatever came up for you at the time Ð for example: "I saw it as a way to give our teachers (or parents) access to resources that they didnÕt have." Put down all the facets that might have been in your thoughts. DonÕt worry that someone will hold you accountable if the vision isnÕt fulfilled. Its importance lies in its influence on the nature and scope of possible future activities.

2) Action Plan (What we do and expect to see):

• What activities do you intend to undertake in this period of time? For example, "during the next month, meet with principals," "find out what technology coordinator thinks," "hold community meeting," etc.

• What do you expect to see or hear that will satisfy you that each of the activities was successful? These do not all have to be "hard" measures such as "The board agrees we should proceed." They can, for example,

include: "No one leaves the meeting early."

Navigating with the Growth Record:

Repeat the next four questions at regular intervals: at the end of each "phase" of progress, every couple of months or on some other reasonable time frame. Each time, these questions will codify the value of your experience so far, and help you "re-plot" actions in the direction of your goals.

3) Experience Report (What we saw):

• Using your previous Action Plan as reference, describe the major tasks, activities, and events that took place during this cycle. But do not limit yourself to "planned" activities. Include everything relevant to the goal that happened, whether or not it was planned or anticipated.

• What indications do you have of the effects (positive and negative) of each activity? On what observations or information do you base your judgments about the effects that took place?

4) Retrospective Reflections (What we learned):

• In hindsight, what actions planned for this period did not turn out as expected? What caused the difference? Because this information won't be used to blame anyone, it's better to have too many possible reasons than too few.

• What unexpected, serendipitous, favorable developments occurred that influenced your outcomes? Since effective leadership requires discovering and taking advantage of unanticipated opportunities, this can be a rich area for identifying new possibilities.

• What does this experience mean to you? If you were to do it again, what would you do differently? How does this influence what you intend to do next?

5) Possible needs: (What we face next; this is a critical element when the report regularly goes to others in potentially helping roles.)

• What special obstacles or opportunities do you anticipate encountering during the next phase of the project?

• What resources do you have access to for dealing with them?

• What do you wish you knew more about before planning the next step?

6) A new Action Plan (what we do next to act on our learnings):

• How long do you expect the time period before the next "navigation sounding" to last?

• What major tasks or activities do you intend to pursue during this

time period?

• What indications would you expect to see if the task or activity were successful?

Using the "Navigation sounding" as a report to others

The Growth Record process supports the seldom-operationalized interdependence that is already built into the organization. It provides ways to regularly ask the questions that W. Edwards Deming put most succinctly — "Who do I need, and who needs me?" I first saw this take place at a memorable meeting about a new federal grant program in the 1970s. New National Drug Education Program (NDEP) grants had been awarded to some schools of education to help prepare teachers for educating children about drugs. To initiate the grants, the NDEP officials met with the deans of education to talk about the kinds of "required" assessment reports they would need.

The federal officials felt ambivalent. They knew that a new program required better and more timely information than usually provided by evaluations and reports. They also knew that no one really likes the busywork of making reports, and that normally grants only require final reports. How, they wondered, could they get the Deans to consider reporting possibly twice a year?

So, at one point, I asked "the feds" to move to the front of the room and recall episodes over the past year where they had used "information" during a typical workday of decision-making and follow-through. As they described each incident, I wrote it on a pad and coded it as "H," "L," or "P." Soon the Deans interrupted and asked what was going on. I explained: "H" is where they needed information to help someone. "L" is where they needed to learn (being at a "higher level" doesn't mean that you know more than people closer to the problem). "P" was the usually quantitative information that helped them protect their own skins (and, not coincidentally, protect the people in the field) from contrary authority.

We then asked the Deans to consider that — to the extent they considered "Feds" as human beings committed to the same program goals as they were — which categories of information would be most valuable in support of natural human roles as helpers and learners? And then, which category of information was the only one they have been willing to provide in the past? From that discussion, the Deans recognized that in the past, they had only provided the "P" information, that the feds needed to maintain their grants. If other schools were to learn what the Deans knew, a different approach would be necessary.

At that point we introduced to the Growth Record. Hoping that the Deans would accept this format for a twice-a-year report, you can imagine our surprise when they asked for a monthly cycle. They genuinely saw how they could use the information to make their projects work more effectively. And if they werenÕt learning that, then the rest of the system couldn't learn.

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