

## The Display/Pickup Paradigm

### THE DISPLAY/PICKUP PARADIGM: A UNIFYING SYSTEMS APPROACH TO SCHOOL AND WORKPLACE RENEWAL

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#### ABSTRACT

Public education, a wonderful creation of human society, is currently troubled by a cycle of increasing decline. Ever-increasing demands leave educators less able to address their own student, school and district issues. So, school quality goes down, for a  $19 + 1 = 18$  effect. That is: if school quality is 19, add a new demand (+1), school quality goes down to 18. Then, desperate new policies are mandated every year — too quickly for schools to keep up. Over three years, the process looks like  $19 + 1 = 18 \dots 17 \dots 16$ . This paper explains this increasing decline as caused by flawed practice built on flawed and conflicting assumptions. A systems approach yields improved assumptions in a new unifying DISPLAY/PICKUP paradigm for education and management. Corresponding theory and practices are proposed, with the goal that  $19 + 1 = 20 \dots 21 \dots 22$ .

The path to the new paradigm begins with a dramatic shift in agency--from teacher as agent to learner as agent. This shift is as dramatic and far-reaching as the earth/sun rotation paradigm shift in astronomy. Whether behavioral laws and causes relate to gravity or human agency, both paradigm shifts here are proposed as hard science--a result of extensive empirical observation, rather than speculation. However, the shift in instruction/management theory is only a partial answer, typically resulting in two conflicting camps: those who propose that the leader is sole agent and must **control** the supervised vs. those who argue that the supervised are agents of their own learning/ performance and need total **flexibility**.

Boulding's Nine-Level Typology of System Complexity clarifies how both control and flexibility are needed. Levels 1- 3 systems—frameworks, clockworks, and control systems—are Things (T), which can be predicted and/or regulated to exterior criteria. Levels 4 – 7 are organisms, which are self-regulating and behave according to interiorly prescribed criteria, especially sophisticated in Level 7, people (P). Levels 8 – 9 are social and transcendent systems with transient boundaries. In contrast, Levels 4 -7 boundaries are fixed. Thus, Level 7 (individual human) needs are mandatory; Level 8 (organization) needs are optional. It follows that individual goals are primary; organization goals, secondary. Boulding's nine system levels group neatly into three domains with different behavioral laws, resulting in TPO Theory (Things/technical; People/personal; and Outcomes/organizational). This theory proposes that when Things (T) are designed/displayed to optimize pickup by People (P), the result is improved Outcomes (O). Further, the key to organization health becomes the system's adjustment capacities (cf. Boulding's Level 3: "Thermostat"). The Display/Pickup paradigm explains that leaders DISPLAY (T) subject matter, policy, procedures, and so forth. Learners/workers (P) acquire them by PICKUP, each at their own pace.

A corresponding new practice is the 30/30 RoundTable, an activity designed for 30 people to give and hear others' views in 30 minutes. The RoundTable adds no new demands because

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educators use it for their own purposes in their existing classrooms and meetings. RoundTables are thus seeds for systemic renewal, defined as enrichment and transformation from within, where the agency lies. Corresponding systems design/redesign is then achieved at users' own pace, by the users themselves, each within their own (sub)system. This allows for the almost infinite variability and complexity from system level to system level, and from system type to system type. The RoundTable planted and flourishing, two new prongs are gradually added for a three-pronged iterative activity at three entry/display points in the system: 1- 30/30 RoundTable (bottom-up); 2- TPO Thermostat (top-down); and 3- Triple-Bottom-Line or 3BL (in → out → in) or current goals/outcomes → 3BL holistic/comprehensive goals → revised goals/intended outcomes.

Keywords: social system design, paradigm shift, educational systems design

### BACKGROUND FOR THE DISPLAY/PICKUP PARADIGM

While technology and equity in education have made considerable progress in the last half-century, important dimensions of public education are in decline. Many school participants are experiencing increasing needs and goal deprivation and decline to survival level behavior (Rogers, 1989; Maeroff, 1986; Erickson, 1989). School intended outcomes are sometimes failing or narrowing in practice, and accompanied by increases in ill-conceived government-level remedial measures (Fullan, 1991; Sarason, 1991; Chitty, 1991; Espelage, 2009). Gardner (1991) explains that the deficiencies in our schools reflect deficiencies in our wider society. Bracey (1992), too, avers that the "true crisis of education in America is that it is trying to function not only in an era of disinformation but also in a time of social decline that looks like collapse." Although much of the educational literature refers to the urban or modern educational problems of the United States, the tensions and contradictions of modern school practices and educational change policy are international problems. These unintended and undesired outcomes are problems of modernity.

The declining outcomes in public education are well known. Sarason (1991) even entitles a book "The Predictable Failure of School Reform." Two images are presented to capture these undesired, paradoxical outcomes: They are: the  $19 + 1 = 18$  effect, and the Tower of Babel effect.

#### The $19 + 1 = 18$ Effect

A systems view of a cycle of increasing decline is illustrated in Figure 1 as the  *$19 + 1 = 18$  effect*. In other words, if school quality is 19, add a new demand (+1), school quality goes down to 18. Then, desperate new policies are mandated every year—too quickly for schools to keep up. Over three years, the process becomes  $19 + 1 = 18 \dots 17 \dots 16$ .

In Figure 1, the center circle begins with the never-ending pressures on educators. A bottom counterclockwise cycle illustrates classroom quality decline, the top clockwise cycle the ongoing increase in administrative positions, which both lead to and increase new federal and state efforts, such as the 2001 No Child Left Behind (NCLB), and the Common Core Standards (California Department of Education 2013).



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### Different Levels of System in the Organization: A Vertical View

Decision-makers on the public education Tower of Babel are at different levels of system -- in the school district (classroom, school, school district), its suprasystems (government agencies), and its affiliates, (universities, educational/textbook publishers). They all speak different languages. A compelling example is provided by Silverman in Fullan (1991). They discuss a major review of education in 1970 that explains that

the reason the reform movement failed was ‘the fact that it’s prime movers were distinguished university scholars’; what was assumed to be its greatest strength turned out to be its greatest weakness (p. 22) ... well-intentioned intelligent university authorities and ‘experts’ on education can be dead wrong. The reforms failed because of faulty and overly abstract theories not related or relatable to practice, [and] limited or no contact with an understanding of the school ...

A definition of experts is key here. Experts are those who are authorized or credentialed in a specific field. They are also intimately involved with their subject matter, due to spending a long time with it, seeing it under many conditions. Thus, in the field of education, teachers are the key experts in classroom procedures, principals in school procedures, parents in their specific children’s needs and goals, educational researchers in educational theory, and educational lawyers and policy makers in educational law and mandates. Efforts to improve, design, or redesign schools must meet the standards of all these experts, (Gabriele, 2014, p. 56).

### Different Types/Disciplines of System in the Organization: A Horizontal View

There may be different meanings applied to words or terms from one discipline to another. Compelling examples of the Tower of Babel effect are the differing, conflicting meanings of top-down and bottom-up in management and reading theory. Figure 3 lays out their opposite meanings.

PARADIGM	INSTRUCTIONAL THEORY: READING	MANAGEMENT THEORY
<b>Old Paradigm</b> (out of favor) 	<b>Bottom up</b> Children ( <b>SS</b> ) learn letters and sounds ( <b>K</b> ) first, then words, sentences, and paragraphs.	<b>Top down</b> The CEO ( <b>T</b> ) makes key decisions.
<b>New Paradigm</b> ?? (in favor) 	<b>Top down</b> Children ( <b>SS</b> ) learn reading ( <b>K</b> ) by listening to and reading engaging stories first.	<b>Bottom up</b> The front line workers ( <b>SS</b> ) make key decisions.

**Figure 3. Meanings of Top-Down and Bottom-Up in Management and Reading Theory**

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### AIMS AND METHODS OF THIS PAPER

It is proposed that these negative outcomes in public education are due to flawed practice based on flawed and conflicting theory and assumptions. Solutions offered are updated theory, then updated practice with the goals of schools -- and perhaps other social systems -- that would flourish, evolve, and transcend, to result in a three year view of **19 + 1 = 20 ... 21 ... 22.**

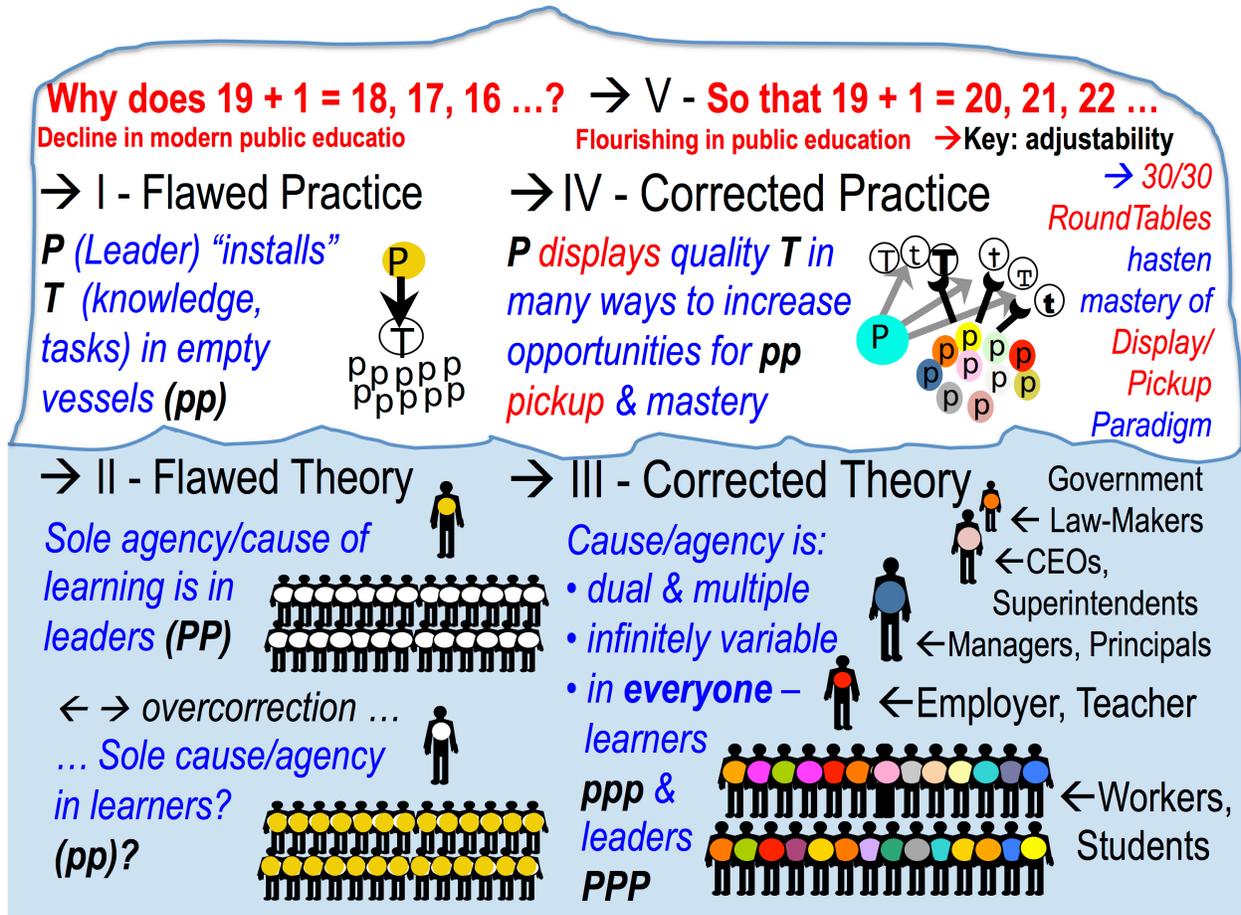
This theory-building paper builds on grounded theory or theory gleaned from cases, practitioner experience, research, and selected educational, organizational, and, especially the general systems literature. The aim is to identify some simple principles in human learning underlying social systems and clarify them for a diverse audience. Due to the resulting complexity and variability of the topic and audiences, metaphors and information-packed images are offered, to more easily discuss the parts and the whole at the same time, or specific details or examples along with the more grand-level principles.

A big picture overview of the development of this paper is packed into Figure 4 -- to be read in a U, from I to V. Top left (I), the flawed practice is that the leader “installs” input in learners/employees, who are empty vessels to fill. Bottom left (II), the old paradigm assumptions are that cause and agency of learning is in the leader (marked with a yellow circle at the leader’s core). Learners’ cores are empty. In overreaction to these flawed assumptions, an emerging new paradigm treats learners/employees as sole agents of their own learning; leaders’ roles become unclear. This results in conflicting paradigms and practices.

Bottom right in Figure 4 (III), corrected theory illustrates that agency is: in both leaders and learners and infinitely variable (cores marked with all colors). Above that (IV), updated practice and new tasks of leaders and learners are laid out. The leader’s task is *display* of input; the learner’s task is *pickup*. Display and pickup may differ horizontally and vertically, in other words, from system type to system type (e.g., reading classes to management classes), and from level to level (e.g., classroom-, school-, district-, to university-level). However, a small new general supplementary activity, a 30/30 RoundTable, is suggested as useful at all or multiple system levels and types. These RoundTables are to hasten acquisition and mastery of these new roles and assumptions, to serve as a seed for systemic renewal, to lead to and accompany school decision makers’ more informed change efforts, and to slowly but surely result in flourishing, positive evolution and transcendence, and in a three year view illustrated as  $19 + 1 = 20, 21, 22.$

Notice also in Figure 4 that outcomes and practices (labeled I, IV, and V) are illustrated as measurable and observable (visible – transparent background), like the tip of an iceberg. The assumptions and theories (labeled II and III) underling the practices are less measurable and observable (less visible – blue background as if under water), like the remaining iceberg hidden beneath the water’s surface.

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**Figure 4. Nutshell View of this Paper: Flawed and Corrected Theory and Practice**

### FLAWED PRACTICE AND ITS UNDERLYING THEORY

It is clear that the old traditional thinking, represented crudely as  $19 + 1 = 20$ , does not apply to social systems. A new paradigm is needed. However, efforts at detailing a new paradigm fall short, and the result is often muddled, resulting typically in two conflicting paradigms and practices – one is often known as the old paradigm, the other as the not-yet-fully-specified new paradigm.

#### **Old Paradigm: Teachers/Leaders “Install” Knowledge In Their Students/Staff**

The most well-known and wide-spread flawed practice is the old paradigm “install” model. Leaders mandate new reforms without fully understanding their impact on the site of implementation. This is especially true when the decisions are made miles from the site (e.g., in Washington D.C. to be implemented in a Los Angeles classroom), by people not really familiar or experienced with the complexities of classroom instruction and management, and most importantly, not connected with the learners in the classroom. The flawed assumptions

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underlying ill-conceived mandates are that all leaders have to do is make a decision, and the decision will be implemented as prescribed. The assumption is that leaders are agents of learning and behavior in their students or staff. These are the assumptions of bureaucracy, a wonderful idea and design and in its time, in response to the limitations of patriarchy, but which we have outgrown today. These are assumptions of linear thinking, when systems thinking is needed.

### The Trudge and Vacillation Toward a New Paradigm

It is uncontested and that the idea of leaders as sole agents is flawed. Plutarch in the first century (2014) is noted for saying that “The mind is not a vessel to be filled, but a fire to be kindled.” Attempts to install learning make experienced leaders and teachers sometimes feel that their staff or students are not vessels (a cup or glass) to fill, but rather sieves, and all the learning goes right through the vessel. Perhaps they conclude that learners are uncooperative. So, they might become more forceful, and increase the demands.

On the other hand, many leaders see the flaws of the “install” paradigm. They realize that students or staff do not simply follow any new mandate as ordered not because they are uncooperative, but because causes and agency of learning is within each learner. New paradigm theory and methods that result include cooperative learning, discovery learning, participatory management, the use of whole language methods and treating the whole learner/employee. The new paradigm is not fully specified, so the role of the leader is not clear. The pendulum might swing too far to another extreme. For example: Do leaders stop evaluating their students and staff? In treating those they supervise with equality, do leaders stop differentiating between excellent and mediocre work? The result is muddled thinking.

Teachers and managers with long experience on the front lines in classrooms and workplaces know that neither approach is correct and that both control and flexibility are needed. But they are so busy with their work that they have no time to work out the details of a new theory. Furthermore, the relationship between theory and practice is complex and mysterious. Silberman in Fullan (1991) earlier findings of failed school reforms suggest that expertise is level and/or field specific, and not easily transferred.

### Reflection and Discussion

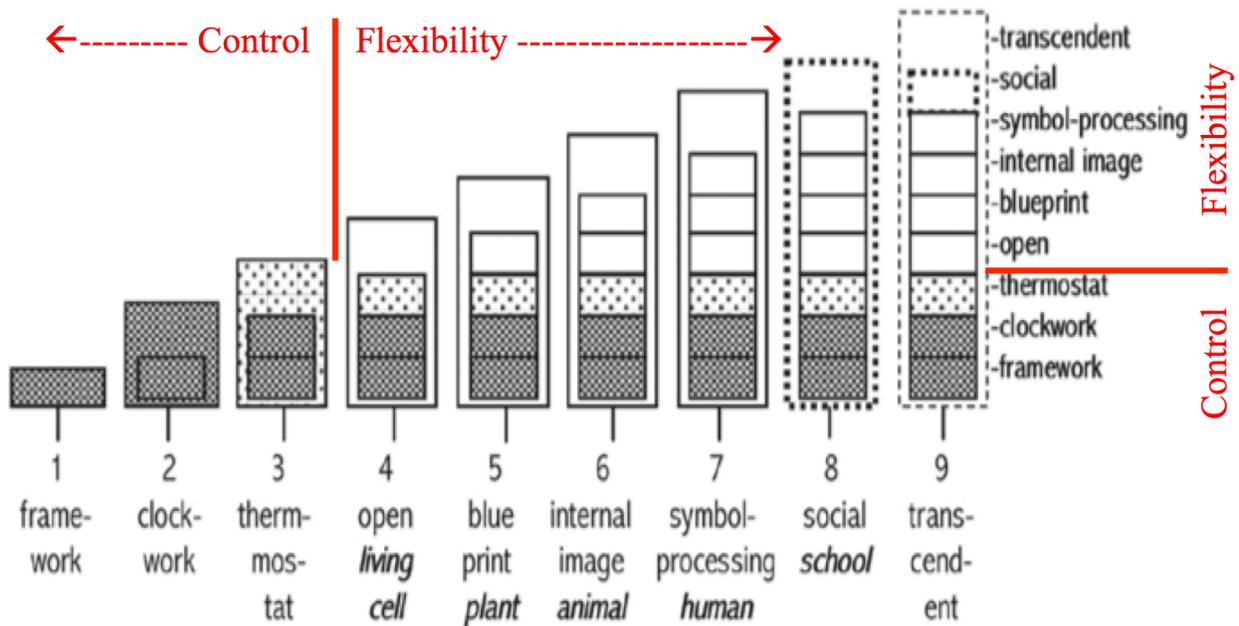
The first step in the path to the new paradigm is the shift in agency--from teacher as agent to learner as agent. This shift underlies learning and performance in all human social systems. So it is as dramatic and far-reaching as the earth/sun rotation paradigm shift in astronomy. Whether behavioral laws and causes relate to gravity or human agency, both paradigm shifts here are proposed as hard science—evidenced in extensive empirical observation, rather than speculation. However, the shift in instruction/management theory is only a partial answer, typically resulting in two conflicting camps: those who propose that the leader is sole agent and must **control** the supervised vs. those who argue that the supervised are agents of their own learning/performance and need total **flexibility**.

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### UPDATED THEORY FOR SCHOOL/SOCIAL SYSTEM LEARNING/BEHAVIOR

An elaboration of Boulding’s nine-level social system is the foundation for unifying theory and useful umbrella to overarch the two competing camps—the old paradigm directive model, and the not-fully-specified new paradigm participatory model (Boulding, 1956; Gabriele, 1997).

Boulding’s Nine-Level Typology of System Complexity clarifies how and where both control and flexibility are needed (Figure 5). Levels 1- 3 systems—frameworks, clockworks, and control systems—are Things (T), which can be regulated, controlled, and/or predicted, (shaded cells in Figure 5). Levels 4 – 7 (clear cells in Figure 5) are organisms, which are self-regulating, self-controlling and behave according to interiorly prescribed criteria, especially sophisticated in Level 7, people (P). Levels 8 – 9 are social and transcendent systems with transient boundaries (dashed line boundaries in Figure 5).



**Figure 5. Boulding’s Nine-Level Typology of System Complexity**

Boulding’s nine system levels group neatly into three domains with different behavioral laws, resulting in TPO Theory (Things/technical; People/personal; and Outcomes/organizational). TPO theory proposes that when Things (T) are designed/displayed to optimize pickup by People (P), the result is improved Outcomes (O). Further, the key to organization health becomes the system’s adjustment capacities (cf. Boulding’s Level 3: “Thermostat”). The Display/Pickup paradigm explains that leaders DISPLAY (T) subject matter, policy, procedures, and so forth. Learners/workers (P) acquire them by PICKUP, each at their own pace.

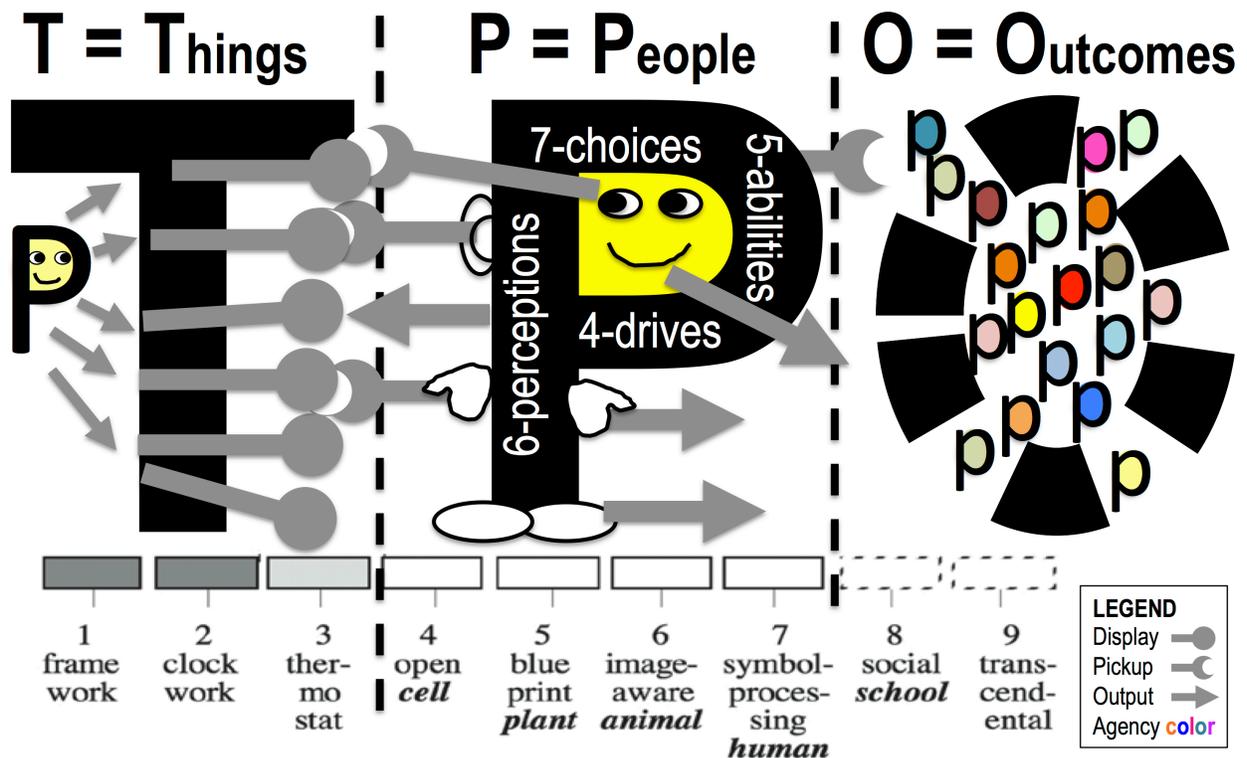
Figure 6 aligns Boulding’s nine system types with TPO theory to illuminate the three different behavioral laws in social systems such as schools, captured in TPO Theory. Natural breaks

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between Boulding's Levels 3 and 4 and Levels 7 and 8 are indicated with dashed lines. The three parts are:

**T = THINGS, which are controllable, predictable:** Frameworks (resources, agenda), clockworks (schedules), and control systems (thermostat), are predictable -- regulated to *exteriorly* prescribed criteria. Effective leaders design/distribute/display their information, policy, or lesson (T) so that it is attractive and easily accessible to their system members (P). Thus, in Figure 6, to illustrate input that is attractive and accessible, reconceptualized as display mechanisms, arrows are rounded, instead of having sharp points.

**P = PEOPLE, who are unpredictable:** People (P, p) are self-regulating -- goal-seeking to *interiorly* prescribed criteria (4), which is infinitely variable depending on each person's abilities (5), perceptions (6), and choices (7). Living things with mandatory boundaries have a primary drive to survive (4). Thus, people learn and increase skills through pickup as illustrated in the legend in figure 6. Note there are four pickup mechanisms in Figure 6. They illustrate that pickup occurs at four key places, the eyes, ears, hands (representing also the whole body), and outcomes. The pickup mechanism at outcomes means that people can observe and learn from their outcomes -- including mistakes and successes.



**Figure 6. Condensing Boulding's Nine Levels to the Three Parts of TPO Theory**

**O = OUTCOMES** Depend on people: P, p behave according to intentional or automatic

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behavior, and the degree to which input (T) aligns with each P's goals, abilities, perceptions and choices. Levels 8 – 9 are social and transcendent systems with transient boundaries (dashed line boundaries in Figure 6), while Levels 4 -7 boundaries are fixed. Thus, Level 7 (individual human) needs are mandatory; Level 8 (organization) needs are optional. It follows that people must meet their personal needs before their organization needs. As illustrated in Figure 6, people can leave Level 8 systems (change school, jobs, or get a divorce). They cannot leave their Level 7 system (their physical body).

Note in figure 6 other representations. The small P at the left of the larger TPO illustrates the role of the leader/teacher/manager. The output arrows at the large P pointing to outcomes refer the performance, behavior, and creativity of P. These output arrows come from inside each individual learner. This illustrates that the teacher can create lessons and projects that encourage and support creativity, but the teacher cannot cause it.

### Reducing Infinitely Variable PICKUP to Two or Three Manageable Principles

Boulding's typology illuminates the infinite variability and complexity of learning and behavior due to individual agency. Table 1 aims to organize several expert views to elaborate and simplify how and why people learn and behave in social systems. The rows at the top of Table 1 begin with a very simple proposition: people (e.g., students) asked to complete a task by a supervisor (e.g., teacher) will do what they want to do and what they are able to do. Thus, when a student is not on task, a teacher might ask him/herself a simple question, "Is it a matter of motivation, ability, or both?" (Patterson et al, 2005, p. 114). Table 1 proceeds from top to bottom to provide the explanation, underpinnings, and evidence for this simple proposition and question.

In Table 1, column A, from the top, the rows are the principles and are named by their authors. They are: Patterson et al., Bott, Robbins, Byham, Maslow, and Boulding. Patterson and associates, row 1, gives the clearest, simplest, and most complete explanation. That is, "People will do what their supervisor or teacher asks them to do if they want to and are able to." Below the simple explanation in row 1 are the biological and hard-science underpinnings.

In Table 1, column B, row 1, Patterson and associates clarify that there are degrees as well as dimensions to whether people want to, or do not want to, complete a task. If a person doesn't want to do something, it may be a strong, moderate, or weak opposition. On one end of a continuum, a person may be very opposed to what is asked. On the other end, perhaps he or she just doesn't see why it is important and has other tasks that seem more pressing or important. The person might feel neutral about the task. He or she might feel it is unimportant and set it aside to do something he or she feels is more important or urgent. On the other hand, a person might feel strongly about the task—that it is valuable and needed, or perhaps that it is wasteful, illegal, demeaning, or harmful.

Patterson and associates argue that, when people are not working on, or completing, assigned tasks, the teacher or supervisor needs to determine why. Do the students dislike the task? Or do the students not see its importance? Do they just keep putting it off for other tasks that they think are more important? In this case, the students are lacking in willingness. They don't want to. Or they don't want to enough to get it done (row 1, column B).

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**Table 1. Agency/Causes of Learning and Behavior in People**

	A	B	C	
1	Patterson et al.	<i>Want to...</i>	<i>Are able to ....</i>	
			<i>... physically</i>	<i>... mentally</i>
2	Bott	affective	psychomotor	cognitive
3	Robbins	... seek pleasure/avoid pain		
4	Byham	ZAPP, -SAPP		
5	Maslow	... survive, be safe, belong, achieve, self-actualize, transcend		
6	Boulding Level 7 Human described in the 9 Level Typology	Level 7 – Symbol processing, fine motor skills (choices)		
		Level 6 – Internal image, 5 senses (perceptions)		
		Level 5 – Blueprinted growth (abilities)		
		Level 4 – Interior agency (needs, goals, drives)		
		Level 3 – Control systems (i.e., adjustability)		
		Level 2 – Clockworks (e.g., circulation, respiration)		
		Level 1 – Frameworks (e.g., skeleton, organs)		

On the other hand, perhaps a student is not able to complete the task, which leads to row 1, column C, in Table 1. In column C, row 1, ability refers to both physical and mental ability. If a person doesn't have the physical skill or dexterity, he or she is not able to achieve it due to psychomotor inability. Similarly, if he or she doesn't understand how to accomplish a task, he or she is not able mentally or cognitively to achieve it.

Table 1, row 2, the three learning domains— affective, psychomotor, and cognitive (Bott, 1995)— correspond very well to, and support, Patterson's explanation. That is, whether people actually do what is asked depends on if, and to what degree, they want, or are willing, to do it (column B). Assuming that people are willing, people's ability to do what is asked depends on two kinds of ability: their physical or psychomotor ability, and their mental or cognitive ability (column C).

The models of Robbins, Byham, and Maslow (Table 1, rows 3, 4, and 5, respectively) further elaborate details in column B: Patterson and associates' "want to" and Bott's affective domain. In row 3, Robbins argues that people behave to seek pleasure or avoid pain (1998). This pleasure-pain principle contributes important information to why people want to, or do not want to, complete a given task. Byham provides useful, clarifying terms that explain the affective domain when he contrasts zapping (which energizes and empowers people) and sapping (draining or depleting people's energy).

Seeking pleasure and avoiding pain, or feeling pleasure (zapped) or pain (sapped), in the school or workplace relates to each person's self-perceived needs, goals, and behaviors, from most basic to more advanced sophisticated: to survive, feel safe, belong, achieve, self-actualize, and transcend—as explained by Maslow, row 5.

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Finally, the very underpinnings of Table 1 are informed by Boulding's identification of the properties of a level 7 system (human) in his nine-level social system (Boulding, 1956; Gabriele, 1997) in row 6. The bottom half of row 6 covers Boulding's levels 1, 2, and 3 properties in humans: level 1 frameworks (e.g., skeleton, organs, etc.), level 2 clockworks (e.g., circulation, respiration, etc.), and level 3 control systems (automatic adjustments and adjustment capacities). Some of the complexity and multiplicity of these processes in humans can be realized when we list just some of the systems: skeletal, digestive, muscular, lymphatic, endocrine, nervous, cardiovascular, reproductive, and urinary systems. These are the boundaries of human learning and behavior. For example, a student who needs to go to the restroom, who is hungry, or whose heart is pounding with fear cannot give attention to the lesson.

The top half of row 6 links Boulding's system-level properties to people's wants and abilities as they relate to individual learning and performance. In column B, Boulding's level 4 properties explain that individual learning and behavior are determined by internally prescribed criteria (the student's own needs, abilities, perceptions, and choices), rather than by externally prescribed criteria, for example, the teacher's motives.

In Table 1, column C, people's abilities are elaborated (level 5). Level 5, or the blueprint level, properties result in genetic diversity, complexity, and divisions of labor (e.g., the digestive, respiratory, ambulatory systems, etc.), or in human beings, the ability to walk upright, which frees the hands, which with the opposing thumbs, allows for fine motor skills needed to hold and manipulate tools.

Level 6 adds the internal image and the five senses, which increase the organism's ability to perceive, especially with the eyes, ears, and hands for sight, hearing, and touch. Level 6 sensory perception might be included as a psychomotor factor—people may be so overloaded with sensory input that they cannot pick up any new input. For example, when the class is noisy, the teacher cannot teach (i.e., facilitate learning). When a child is hungry, he or she cannot learn.

Level 7 systems are named symbol-processing by Boulding. People's mental or cognitive abilities include the ability to process symbols: the alphabet and numbers, for reading and calculating. In level 7 systems, their subsystems are more evolved or specific to humans. Level 4 systems, amoebas, behave perhaps only for survival and safety. Higher-level needs and goals—to achieve, self-actualize, and transcend—are observed in humans. Level 5 systems, plants, are not typically mobile. Level 6 systems, animals, do not typically walk upright with free hands and the opposing thumb.

### **Nutshell Discussion of Agency/Cause in People's Learning and Behavior**

In a nutshell, people—students, teachers, CEOs and others—learn and behave according to interiorly prescribed criteria. Individuals behave each according to his or her own needs, abilities, perceptions, and choices. They learn and grow each at his or her own pace, for his or her own—long-term or in-the-moment—purposes. When an individual's basic needs—survival, safety, and belonging—are easily met, he or she has more energy for higher-level needs. This includes level 7 goals of achievement, self-actualization, and transcendence, and level 8 organization goals. People are the independent variable in social systems. Of course, since people learn and act according to their own goals, perceptions, and choices, new (or old) questions arise: What is the

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role of the teacher, principal, manager, or CEO? Instead of “How can a teacher or supervisor better teach?” Better questions are: “How can a teacher or supervisor better facilitate, unconstrain, or nurture learning and skill building? How can a teacher or supervisor better provide opportunities for learning and skill building?”

### Resulting Six Principles of the More Complete New Paradigm

The shifts and more complete principles, from old paradigm, to more fully specified new paradigm, include:

1. Shift from leader as agent to learner as agent;
2. Infinite variability and complexity due to: [1] interior agency in individuals; [2] different system types (e.g., class or meeting) and [3] different system levels (e.g., school or office) where individuals participate.
3. General predictability: People will do what they want to do (affective) – urgent and basic needs first (Maslow), and what they are able to do (cognitive, psychomotor).
4. Clarification of the roles of leader and learner, perhaps also of manager and worker, parent and child from **install** or **laissez-faire** to **Display** and **Pickup**
5. Everyone as a learner, both leaders and learners;
6. Given the unpredictable, infinitely variable, and complex causes of learning and behavior, it is better for the leader to simply **display** the T (knowledge, tasks, etc.) to allow best **pickup**. and then monitor to see if and where there is a mismatch and **adjust** (or redesign) the display.

These six principles are proposed as the necessary sufficient conditions needed to predict learning and behavior, and for the design and management of social systems such as classrooms, schools, school districts, and other social systems.

### From Three Factors to One: From TPO to Adjustment Capacities

In the six principles above, a single principle (#6) emerges as a key sole indicator of the healthy social system: its adjustment capacities, located in its Level 3 control systems (the dotted cells in Figure 5, a side view of the nine system types in Boulding’s Typology).

Level 3 is the site where new information is picked up by the learner from the leader’s display or the environment. With this infinite variability and complexity, from individual to individual, and from system type (e.g., science class, math class) and system level (e.g., classroom, school district office), the teacher/leader roles is to act like a control system. A useful image is a **TPO Thermostat**. As he, she, or the leadership team system members manage the work and students/staff, he/she is guided by three “thermostat” modes for optimal adjustment capacities:

1. **OFF: Planning** – Class/school not in session. Windows/doors are open for fresh ideas. In contrast, in ON mode, windows and doors are closed to manage resources (cf. keep heat from going out the doors/windows and avoid cold entering);
2. **ON: Manual: Delivering resources** -- Class/school in session. Leader is delivering resources and information. (Most typically, auditory display).
3. **ON: Auto: Monitoring** -- Keeping the environment and resource flow optimal as people work independently. (Resources easily accessible, perhaps permanent visual displays)

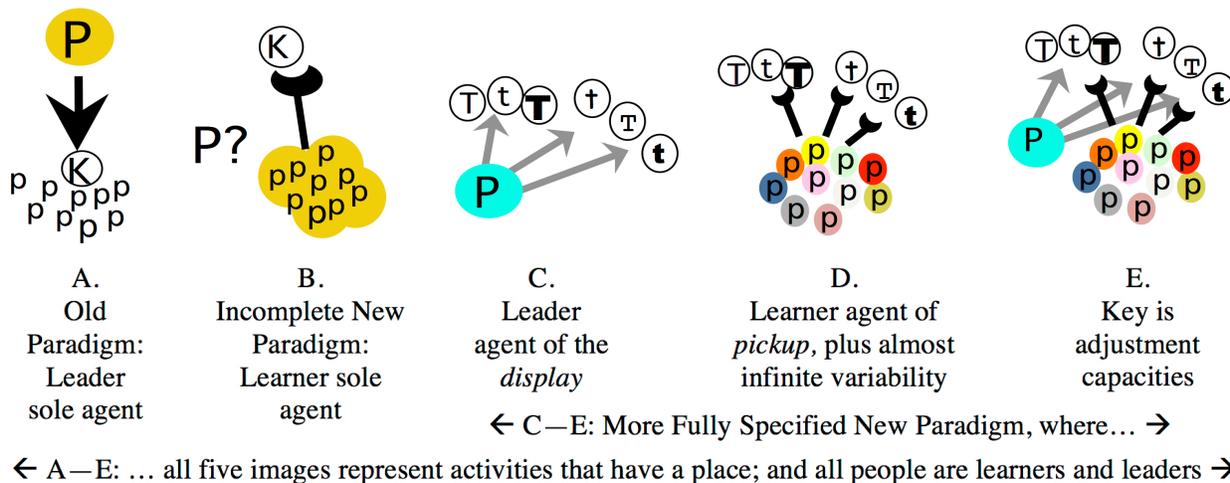
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This elaboration clarifies a more specified new paradigm that is useful to explain learning as well as behavior and performance. The two processes are display and pickup. The teacher/leader is agent of the display. The learner/employee is agent of the pickup. The teacher or leader (P) “displays” quality subject matter, resources, tasks, policies, and so forth (T) in many ways to increase opportunities for learner (pp) “pickup,” mastery, and performance.

The two processes, display and pickup, were observed and conceptualized in earlier research in the exotic classrooms of communities of practice (Gabriele, 1996). They are now proposed as suitable at all levels of educational system, for all learners—including principals, superintendents, policy-makers, presidents.

Figure 7 presents five images to summarize many of the assumptions presented here. Left [A] is the old paradigm **install** or teacher as sole agent. Next [b] is the emerging new paradigm, **laissez-faire**, or learner as sole agent. Center [C] is the more fully specified new paradigm role of the teacher: **display**. Next [D] is the more fully specified new paradigm role of the learner: **pickup**. Far right [E] is the key quality of healthy social systems, their adjustment capacities. The leader displays, adjusts, displays. The learner picks up, adjusts, picks up. The output arrows from the learner (behavior, performance) are not illustrated here, as the teacher can observe and respond, but can only provide new and revised displays. The teacher cannot control student outputs and system outcomes. A relevant proverb comes to mind, “You can lead a horse to water, but you can’t make it drink.”



**Figure 7. Five Assumptions/Activities of Learning, Behavior and Performance in Schools**

## UPDATED PRACTICE AND THE 30/30 ROUNDTABLE

The ill-conceived top-down practices in public education, for example --from policy makers in Washington DC to a Los Angeles’ classroom – are proven diversionary at best, but more

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frequently harmful, as discussed in Silberman's review of school reforms mentioned earlier. Certainly there needs to be top-down policy. However, effective policy plays out differently at each level and in each system type, and it must be applied in ways that do not contradict the principles in play on the front lines.

A good high-level example of an important new policy is a United States Supreme Court decision in the 1950s. The judge's ruling of *Brown v. Board of Education* mandated the desegregation of schools across America. There were still negative side effects that were unfortunate. For example, the practice of busing children long distances to balance numbers of white and black students resulted in many undesired outcomes. The great distance between the child's school and home resulted in reduced opportunities for building school/neighborhood community spirit. Also, if a bused student fell sick— not sick enough to be an emergency, but sick enough to be removed from class to go to the nurse—the child had to wait a long time for treatment. The parent had a long drive, or bus ride, to pick the child up in order to take the child home or to the doctor.

Recent reform efforts have goals of whole school improvement and systemic change. However, one more factor is proposed to better match the display/pickup assumptions and goals of systemic renewal, or from the inside out. Namely, general policy needs to be specified by the users level by level, and system type by system type, so that one level or type does not impose on another level or type mandates that are flawed, not relevant or helpful. Boulding's words are illuminating: "Somewhere however between the specific that has no meaning and the general that has no content there must be, for each purpose and at each level of abstraction, an optimum degree of generality" (1956, p. 197).

It is a long and slow process for users to specify and redesign for their own purposes, at their own levels, in their own systems, in alignment with new general policy. In this paper, I propose a user-friendly practice in a small regular activity -- the GEMS RoundTable (Gabriele Educational Materials and Systems), which is immediately suitable for all levels of system. Banathy observed that the RoundTable "could be used either as a component of a whole system design (WSD) program. Or, in case a system is not ready to engage in WSD, the model is appropriate to help an organization to 'get ready' to design." (Banathy, personal communication, December, 1997).

### The 30/30 RoundTable as a Tool and Seed for Systemic School Renewal

In a 30/30 RoundTable, 30 ( $\pm n$ ) people give their viewpoints in 30 minutes. Cued by a one-page leader's guide or script, the format devotes five minutes to a SUGGESTED TOPIC, and a half dozen guidelines or organizing principles – BASIC READINGS, which are read aloud by a half dozen members in attendance. This leaves 25 minutes for participant learning reports or comments, time divided equally among all present. The scripts -- guide and basic readings -- allow users and peers to take turns as RoundTable facilitator, and to modify the scripts' words over time to their own emerging purposes.

The RoundTable was introduced in 1997 in the International Systems Institute (ISI), and the International Society for the System Sciences (ISSS) as a practicum for a dissertation, and in 2000 as a dissertation study in four 4<sup>th</sup> Grade classrooms (Gabriele, 2002). Since then it has been

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a regular activity in several classrooms for 15 years. A sixty-minute version has been implemented in the ISSS for 15 years, and also in two societies for workplace improvements for three years. Benefits, multiple and interacting synergistically, include increases in learning subject matter, communication awareness and skills, self- and mutual understanding and respect, and community spirit.

The RoundTable treats the two grand paradoxical challenges. Regarding the  $19 + 1 = 18$  Effect, the RoundTable adds no new demand because educators use it, weekly or monthly, for their **own** purposes in their existing classrooms and meetings. It reduces the Tower of Babel effect by increasing communication. RoundTables are thus proposed as seeds for systemic renewal, or enrichment and transformation from within, where the agency lies. Corresponding systems design/redesign is then achieved at users' own pace, by the users themselves, each within their own system. This allows for the almost infinite variability and complexity from system level to system level, and from system type to system type.

### **PROPOSED NEXT STEPS: 3BL, TPO THERMOSTAT GUIDE**

The 30/30 RoundTable planted and flourishing, two new prongs/displays are to be gradually added for a three-pronged iterative activity at three display or entry points in the system. It is expected that three prongs will make the RoundTable program three times as effective, or even more effective to the third power. In order of their introduction into the system, the resulting three prongs are: 1- 30/30 RoundTable (a bottom-up approach); 2- Triple-Bottom-Line or 3BL (an in-out-in approach); 3- TPO Thermostat (a top-down approach).

#### **Prong 1: 30/30 Monthly RoundTables in School, District, Government, and Other Meetings.**

A class/meeting-level tool (T), practice and bottom-up treatment to provide everyone, all school decision makers, a new, user-ready way to cover lessons/agenda, which also provides participants ongoing experiences of participatory learning and leadership while fostering democratic, caring community. Benefits are increases in the three learning domains. That is, people learn more about the subject matter, issues and viewpoints from each other (cognitive), they learn to appreciate and care about their work and each other more (affective), and the quality, responsiveness, and response-ability of their actions and action plans increase (psychomotor/physical).

#### **Prong 2: The Triple Bottom Line (3BL).**

When users deems themselves ready, the Triple Bottom Line (3BL) is added to the RoundTable session (T) to make a small, regularly occurring space for leaders and learners to continually reflect on, widen and advance their goals. It consists of one or two paragraphs added to the BASIC READINGS, and a line added to the TOPICS FOR TODAY. Prong 2 is inspired by the 3BL for corporations— financial, social, and environmental accountability. 3BL accountability asks that corporation leaders, decision makers, and evaluators design appropriate measures for outcomes regarding the three Ps—the system's impact on profit, their people, and the planet. 3BL is to be used by all leaders at their level of management. In schools, the 3BL prong proposed here is to inspire leaders to, first, recognize real and observed bottom lines (their own and those of people they supervise or report to), as well as their ideal and intended bottom lines.

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Second, leaders and learners are to expand their ideals and perspectives—from one to three bottom lines: their key goals and measures for future sustainability. Three general bottom lines for teachers in classrooms might be students' CAP – their cognitive, affective, and psychomotor development (Bott). Corresponding terms for students might be [1] learning subject matter/skills, [2] enjoyment of learning, [3] improved performance. Specific bottom lines depend on the class subject matter and course description.

### **Prong 3: The TPO Thermostat Guide for Design, Delivery, and Management.**

When users are ready, they add an additional topic to the RoundTable session – the TPO Thermostat frame -- to make a small regular space for system members to develop and master a three mode understanding of their physical learning system or environment (classroom, meeting, school, school district, etc). [1] OFF, [2] ON: Manual; and [3] ON: Auto. This is a top-down treatment to provide all leaders a tool for observation, design, enrichment, intervention, or fine-tuning, to apply to their level of school system.

### **THINKING AHEAD: TOWARD IMPROVING ADJUSTMENT CAPACITIES IN LARGE, MULTISITE SOCIAL SYSTEMS**

The following paragraphs think ahead to the possible value of what I will call *user-designed automated social control systems*. These are gleaned out of the Display/Pickup Paradigm, TPO Theory and the TPO Thermostat Frame. Further, they build on the concepts of common pool resources (CPRs) and the difficulties that surround CPRs.

Zooming out a la Banathy to a grand-level systems-environment view (Banathy 1992), for example, a large, multisite school district view and its state-level governance, the Three-Prong RoundTable is conceptualized as a bottom-up treatment or innovation, as a gentle seed and 30-minute regular practice for systemic renewal from the inside. It is to be experienced by all school participants, and school policy makers, at each level of system.

At this grander perspective, a set of top-down innovations are conceptualized as valuable for further exploration. They are inspired by the seminal work of Garrett Hardin and Elinor Ostrum. Hardin's *Tragedy of the Commons* (1976) explains that individuals will overuse common pool resources because they can easily see or experience the advantages to their own personal needs, but they are too distant from the big picture to take into account the toll its takes on all the others in the system. Hardin further argued that there was no technical solution to such grand problems. Ostrum found evidence that institutions can successfully govern common pool resources (CPRs), especially when “individuals face a public good or CPR problem and are able to communicate, sanction one another, or make new rules” (Ostrum et al.1998, p. 279).

Transferring these principles to large school districts, it is proposed here that in public education systems common pool resources are money (how the budget is distributed) and time (i.e., daily, teachers have five hours with 30 students, and one hour without students for preparation, non-teachers have six hours with no students. A new look should be taken at how to distribute time and money for more effectiveness and adjustability. Teachers should be making classroom and subject matter decisions, as it is they who experience their students every day. Principals should be making school level decisions, paying careful attention to the needs of their teachers.

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Superintendents should be making school district level decisions, paying careful attention to the needs of their principals who are paying attention to their teachers. The 30/30 RoundTable facilitates leaders greater understanding of the issues of their peers and of those they supervise. It is suggested here that leaders and members at each system level would benefit by reconceptualizing their systems through the TPO thermostat frame. They could then better understand how to design their system or system level's frameworks, clockworks, and control systems for optimal resource delivery and adjustability.

Moreover, it is my argument that system members can indeed create technical solutions to greatly help them maintain optimal adjustability. After all, it is almost fifty years since Hardin and his colleagues opined that there were no technical solutions to the tragedy of the commons. Since that time there has been an explosive advances in technology. Today, it is it possible to create technical soltuions, especially, as Ostrum points out, if the system level participants and decision-makers communicate and agree with the need.

An example of a technical solution that would solve some grand-level problems in public education is the following: The California Code of Education states:

41400. It is the intent and purpose of the Legislature to improve public education in California by maximizing the allocation of existing resources, to discourage the growth of bureaucracy in the public schools, and to emphasize the importance and significance of the classroom teacher.

It further state in Section 41402. "The maximum ratios of administrative employees to each 100 teachers in the various types of school districts shall be as follows .... In unified school districts—8."

In Rogers' study of New York school districts, there were 700 teachers assigned to the district office, a non-school site (1989). In an article in the *United Teacher*, Roger Segure of UTLA disclosed evidence that instead of the 8:100 ratio, there was a 25:100 ratio in a local school district (Segure, 1980, p. 8). Segure's calculations, if correct, would mean that 17% of educator salares are illegitimate. Thrity years later, the hyperbureaucracy has increased.

The formal policy of 8 non-teaching teachers to 100 teaching teachers needs to be revisited by experienced and retired superintendents, listening to experienced and retired principals, listening to experienced and retired teachers. If the 8:100 is still the correct ratio for an effective TPO Thermostat system, then information on employee paychecks could be used to control the ratio automatically by computer. Salaries out of compliance would not be permitted.

Again, I am calling the above example of computer assisted control systems *User-Designed Automated Control Systems*. At each level of system, users design the control systems to make their system function most effectively (through the TPO Thermostat Frame.) In the example, the grand level policy, 8:100, is controlled by computer and paychecks. It is important that the users at the appropriate system level determine the policies and control systems. Since the impact on the users would be automatic and financial, their paycheck, users would not have the moral dilemma of doing the wrong thing. No effort would have to be made for leaders to consider the distant needs of others before their own.

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Finally, the lens of the display/pickup paradigm provides another perspective, along with the *want to/able to* lenses. If control systems are designed by people outside the system and system members feel they are ill-conceived, they will find loopholes or other ways to avoid the policy. They will not want to comply. If the control systems are fair, but there are no automated control systems, leaders will have a difficult time, *may not be able*, to keep their eye on the big picture, especially when their position is unpopular among their peers. It is unrealistic to expect individual's pickup of policies regarding CPRs when there are too many competing stimuli, and the rewards are too distant. It is more realistic to expect pickup when one's paycheck is affected.

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