Why Doers Do

by David Wile

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What are the elements of human performance (HP)? Why do people do what they do? Concomitantly, when people aren't performing, what is the gamut of solutions the human performance technologist should consider?

For as much agreement as there appears to be in human performance technology (HPT) circles on the philosophical answers to these questions, the semantics and taxonomies of HP models seem disparate. In this article I provide a synthesis by:

- identifying HP models of five prominent HPT authors;
- contrasting the models with one another;
- combining elements of the models into a new model; and
- discussing how this new model should be used.

Five HP Models

There are far more than five HP models, but I've chosen to synthesize five models of the more prolific HPT authors, including Thomas F. Gilbert, Allison Rossett, Joe Harless, Dean Spitzer, and Robert F. Mager.

It's likely that other HP models are similar to at least one of these five and as such are probably accounted for somewhere in my analysis. For the purposes of synthesis, I've had to modify the authors' models. Although some nuances may be lost in translation, I hope my modifications are deft enough to retain the authors' original intents.

I'll comment here on the first step of reconciling models: normalization. Normalization means converting each model into units that can be measured against one another. For example, to calculate the volume of a box with a width of two feet, a height of 22 inches, and a depth of 45 centimeters, the first step is to decide on a unit of measurement (say, inches), then convert all dimensions to that unit (24" x 22" x 18").

Some models use different language for essentially the same phenomena (e.g., *skills/knowledge* versus *training*). In these cases, I chose one consistent term. Also, others take the negative perspective (reasons humans don't perform, e.g., lack of skills and knowledge) versus the positive stance (solutions a human performance technologist must consider, e.g., training). For simplicity, I converted each model into positively-stated language.

Gilbert. Tom Gilbert offers a performance matrix. In the third of three dimensions ("Methods of Improvement"), he suggests that a human performance technologist is:

"...using the behavior engineering model to analyze the alternative ways we might make the pursuit of accomplishments more efficient, looking at:

- environmental methods;
- people programs; and
- management actions."

Gilbert says...	I'll call it...
Environmental methods	Environment
People programs	People
Management actions	Management

Figure 1. Gilbert's Model

Rossett says...	I'll call it...
Lack of skill and/or knowledge	Skills / knowledge
Flawed incentives	Incentives
Flawed environment	Environment
Lack of motivation	Motivation

Figure 2. Rossett's Model

A slight translation results in a model that attributes HP to three factors as shown in Figure 1.

Rossett. Allison Rossett proposes a model of "Causes of Performance Problems." She lists the kinds of causes as:

- lack of skill and/or knowledge;
- flawed incentives;
- flawed environment; and
- lack of motivation.

Paring down the language and converting from a negative to a positive focus, Rossett's model attributes performance to the four factors as shown in Figure 2.

Harless. Joe Harless, as part of his front-end analysis workshop titled, "Accomplishment-based Curriculum Development (ABCD)," offers an HP model that asks participants to:

"Think of the ABCD process as belonging to a larger field, performance technology:

- ABCD ('training');
- personnel selection;
- environmental engineering; and
- motivation-incentives."

By simply altering the language, this model becomes normalized to HP as the four factors shown in Figure 3.

Spitzer. Dean Spitzer writes, "It has been found that there are seven major factors that underlie human performance...." With my slight twist on his language, he presents the seven HP factors as described in Figure 4.

Mager. Robert Mager presents a checklist titled, "Why People Don't Do What They're Expected to Do." This checklist is meant less for a human performance technologist to use in solving HP problems than to explain HPT to clients, yet it forms a distinctly varied HP model.

As shown in Figure 5, the ninth ("They're punished...") and tenth ("They're rewarded...") items are essentially inverses of each other, so I've combined them, reducing the model to 10 factors. I've also converted the language from negative to positive.

Model Reconciliation

Our five authors are on different points along a continuum. One extreme of this continuum (Gilbert) implies that HP factors are best covered with a few categories broad enough to account for the entire domain. The other end (Mager) implies that domain is best accounted for by more categories.

For comparison, I've arranged these five models in one matrix, shown in Figure 6.

Despite an attempt to normalize the models, they clearly do not match perfectly. Some questions arise as follows:

- Would Gilbert place feedback systems in his environment, management, or people factors? A case can be made for each.
- What do Rossett and Harless really mean by environment: tools and resources, organizational structures, or both?
- How would Spitzer define job aids: as tools/resources or skills/knowledge?
- Where would Mager place inherent abilities? He doesn't seem to account for performers' natural abilities.

Harless says...	I'll call it...
ABCD ("Training")	Training
Personnel selection	Personnel selection
Environmental engineering	Environment
Motivation-incentives	Motivation / incentives

Figure 3. Harless' Model

Spitzer says...	I'll call it...
Expectations	Expectations
Capacity	Capacity
Knowledge and skills	Skills / knowledge
Job / task design	Job design
Incentives	Incentives
Feedback	Feedback
Tools and resources	Tools / resources

Figure 4. Spitzer's Model

Mager says...	I'll call it...
They don't know how to do it.	Skills / knowledge
They don't know what's expected of them.	Expectations
They don't have the authority to do it.	Authority
They don't get timely information about how well they're doing. (In other words, they don't get feedback.)	Feedback
Their information sources (documentation) are poorly designed, inaccessible, or nonexistent.	Documentation
They don't have job aids to cure correct performance.	Job aids
Their work stations provide obstacles to desired performance.	Work space
The organizational structure makes performing difficult.	Organizational systems
They're punished or ignored for doing things right.	Incentives
They're rewarded for doing things wrong.	
Nobody ever notices whether they perform correctly.	Attention

Figure 5. Mager's Model

Gilbert	Rossett	Harless	Spitzer	Mager
Environment	Environment	Environment	Tools / resources	
			Job design	Authority
				Org systems
				Work space
People	Skills/knowledge	Training	Skills/knowledge	Skills/knowledge
				Documentation
				Job aids
		Personnel Selection	Capacity	
Management	Motivation	Motivation/ incentives	Expectations	Expectations
			Feedback	Feedback
				Attention
	Incentives		Incentives	Incentives

Table 6. Comparing All Five Models

In fairness to all authors, HP factors are accounted for somewhere in each model, sometimes as examples within larger categories. But an inconsistency with language and unclear boundaries are problematic. For example, the human performance technologist is faced with a large task merely explaining to clients why training isn't the answer to everything. The elements in all of these models have been proven over the years; however, I've identified a hierarchy that's been easier for my clients to understand.

A New Model

Figure 7 is my model of HPT, a synthesis of the models I've discussed so far. This is a model that has helped to assess performance problems and explain those assessments to my clients.

Starting at the top of the model, I first divide the entire domain of elements required for HP into those that are either external or internal to the performer. For the sake of organization, think of **external elements** as those that occur outside the performer's body (e.g., tools, work spaces, managers) and **internal elements** as those inside the performer's body (e.g., the brain, nervous system, musculature).

I've further divided those external elements into a performer's **environment** (intangible elements you can't see or touch) and a performer's **resources** (tangibles you can see, touch, or otherwise sense).

Finally, those divisions shake out into seven more or less discrete HP elements (in Figure 7, the boxes numbered one through seven). Under each box, I list several examples of each element.

1. Organizational systems include elements such as:
- policies, procedures, rules, laws;
- job/task design;
- logical reporting systems within an organization;
- departments or divisions that depend on others being clearly aligned;
- clearly communicated performance goals;
- authority to perform;
- matching a person to the right job;
- appropriate workloads; and
- secretarial and support staffing.

2. Incentives include:
- financial or material compensation;
- feedback (positive reinforcement); and
- interesting, meaningful work.

3. Cognitive support includes:
- job aids and
- documentation.

4. Tools include any physical items (other than cognitive support) that a performer needs to perform. The list is endless, including such varying examples as:
- computers;
- software;
- pencils;
- fork-lifts;
- shovels;
- hair-nets; or
- chain saws.

5. Physical environment includes such tangibles as:
- temperature;
- light;
- noise; and
- logical physical layout (e.g., a warehouse bay door being the right height for incoming trucks, a fax machine closest to the person who does the most faxing).

6. Skills/knowledge includes:
- stand-up training;
- education;
- self-study programs;
- on-the-job training; and
- mentoring and/or coaching.

7. Inherent abilities includes abilities a person is born with. These are performance factors a human performance technologist has little, if any, ability to change. They include:
- physical ability to perform (e.g., being strong enough for the job);
- intelligence;
- emotional ability to perform; and
- internal motivation (e.g., the satisfaction a person feels with doing a job well or the rush a rock climber gets just conquering the summit of a mountain).

Some features of this new model are highlighted below.

Categories and Subcategories. The model provides important relationships between the various performance elements of the five models. What one model deems a performance element, another model uses a mere example of a performance element that is part of a larger group. For example, Spitzer cites job design as a discrete element, while

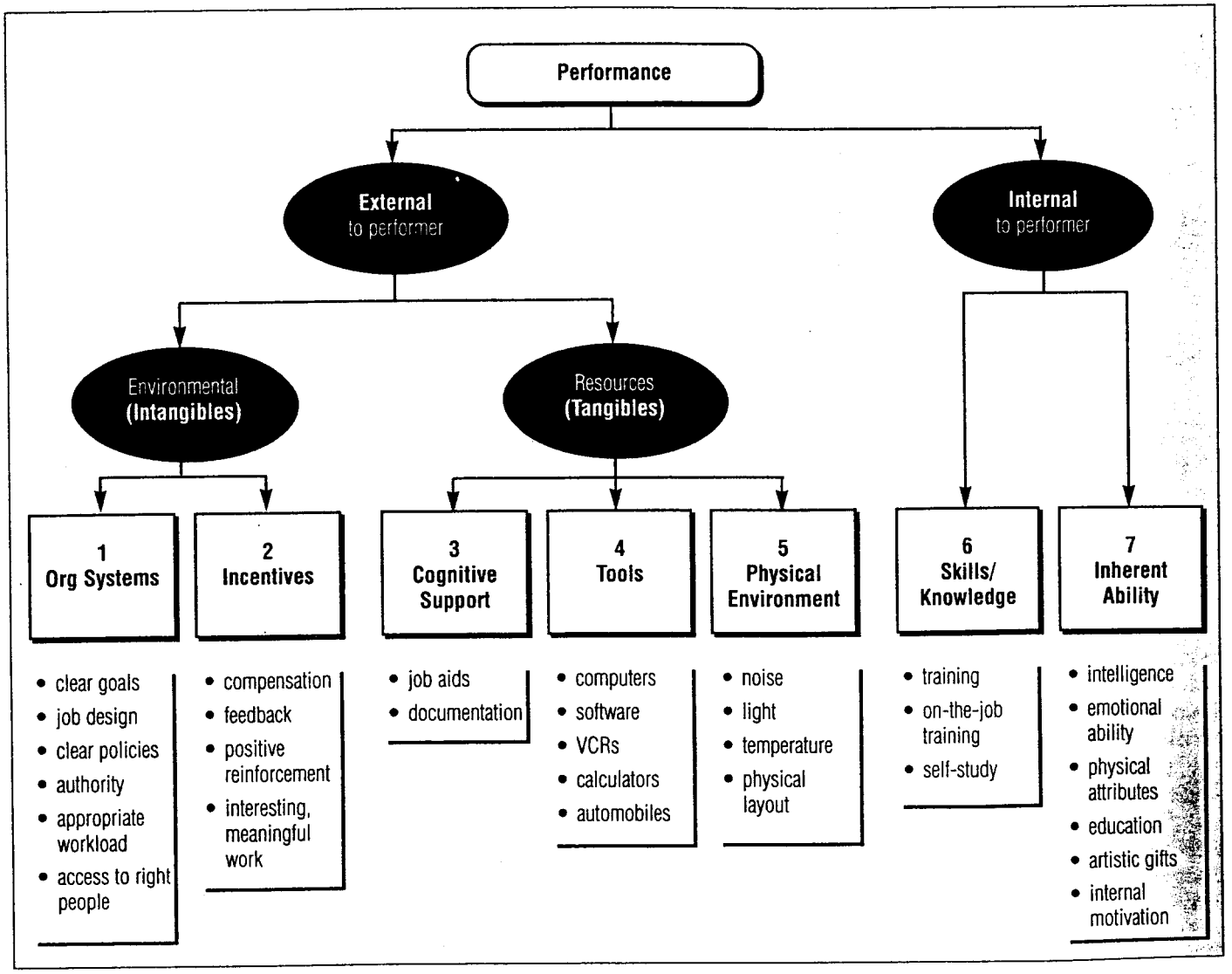

Figure 7. A new HPT Model

Mager says job design is part of organizational systems. This model clearly shows what is a category and what is merely an example within a category.

Performance Problem Priorities. If you were to rank the seven elements in this new model according to how often they are part of the performance problem, how would the prioritized list look? I wonder whether it might not resemble the numbers as they appear in the model. Are organizational systems most often part of the problem, and are incentives next, and are inherent abilities least likely to be a problem? My guess is it's close.

A ranking like this stands to reason. Problems are frequent partly because they are hardest to solve. It's reasonable that intangible problems are harder to solve than tangible problems and that organizational problems are harder to pin down than those internal to an individual performer.

Capacity versus Selection versus Inherent Abilities. This model prefers to term factor #7 as *inherent abilities,* not *capacity* (Spitzer) or *selection* (Harless). *Selection* infers there is a problem with a manager's selection of the right person. That would really be an organizational systems issue. *Inherent abilities* properly identifies the performer's inherent ability to perform. Again, inherent abilities are rarely the problem except in extreme cases. For instance, my 93-year-old grandmother doesn't have the ability to lift crates onto a loading dock. A quadriplegic will not have the ability to be a great bullfighter. A convicted rapist probably doesn't have the ability to provide therapy to sexual abuse victims because client trust, key in therapy, would always be low. In these cases, all the training, job aids, compensation, and feedback won't help.

Motivation: External versus Internal. Motivation is treated in two separate ways in this model. Factor #2, *incentives,* includes the traditional motivational factors such as feedback, money, and interesting work. These elements are categorized as external to the performer because a manager or organization can provide these for a performer and will have a high degree of control of how they are deployed. Conversely, factor #7, *inherent ability,* includes motivation internal to the performer. This is motivation of a different type, the feeling of satisfaction we get for performing successfully. For example, I may be motivated to grow the perfect tomato in my garden on the weekends, and that has nothing to do with a salary or perhaps even what anyone else thinks of my tomatoes (feedback).

Environment. This new model also reconciles the nebulous category of environment as other models use it. As it is used in this model, *environment* clearly means those things a performer needs to perform that are outside of the performer's mind and body, but that are intangible. Environment is solely the organization in which a performer performs plus those elements that "inspire" a performer to perform.

To Saw or Not To Saw. This model echoes Gilbert's discussion of whether a tool is part of performance, i.e., is a saw a part of the performance of sawing? This model says yes, it is. The first division of this new model has two halves: elements external to the performer (e.g., a saw) and elements internal to the performer (e.g., the ability to saw).

Cognitive Support Is Not Training. This model pulls out *cognitive support* (job aids, documentation) as a discrete performance element, separate from elements like training and education. Often, cognitive support is lumped in with either *tools* or *skills/knowledge.* Here, though, by being discrete, we see that cognitive support can alone solve performance problems without changing a performer's tools or (gasp!) teaching him or her anything new.

A Book Is a Book Is a Book. The distinction between the middle three external, tangible elements (cognitive support, tools, and physical environment) depends on how an item is used. How would a book be categorized? If you look up job aid information in the book it's a cognitive support. If you use the book to hammer in a nail, it's a tool. If you use it to prop open a window and let in fresh air, it might be considered a physical environment performance support.

How a Human Performance Technologist Can Use the New Model

Whereas the five models analyzed earlier are one-dimensional (i.e., lists of elements), the model in Figure 8 displays a hierarchy of elements. A human performance technologist has the option of explaining HP to clients at three different levels.

For some clients, it may be enough to discuss solutions at the top level of this model: external versus internal or environment versus resources. I've found that most clients are comfortable with discussing solutions at the "seven elements" level, but some learning styles are accommodated by treating the elements as seven discrete factors while others prefer the seven elements categorized in the external (intangible) / external (tangible) / internal groupings. Still,

If client is...	You might say something to this effect...
Big picture	"My needs assessment indicates we need to concentrate mainly on **external-intangibles** as solutions for your organization."
Mid-range	"My needs assessment indicates your employees would benefit from improved **incentives** with some possible improvement also in the **cognitive support** area."
Concrete solutions	"My needs assessment indicates you could benefit from a better **compensation** set-up, formalized **feedback** systems, and better **job aids**."

Figure 8. Three Levels of Consulting Language

some clients need a larger domain in which to discuss HP solutions, so this model allows a human performance technologist to go down to the "examples" level and communicate with clients about discrete solutions. I've labeled each of these three families of clients in Figure 8, along with an example of how a human performance technologist might cite this model with them.

A quick survey of my internal clients tells me that at least 80% are at the "concrete solution" level. In fact, I would only dare approach one or two at the "mid-range" level and wouldn't really use "big picture" language with any of them.

There has been discussion in instructional design circles of objectives for use in client communication versus objectives from which instruction can be designed. It may be reasonable to use instructional objectives that do not conform to Mager's three-part objective or the Gagne/Briggs/Wager five-part objective to communicate with clients.

For example, instruction can be designed based on this objective:

> Given 10 simulated client questions about the 5090 copier, sales staff will provide answers to the satisfaction of a panel of judges all 10 times.

However, "answer all client questions about the new 5090 copier" may be enough for clients to know what the instruction is going to do, even though a designer cannot design instruction from it.

Likewise, this HP elements model gives a human performance technologist a choice of which level to use based on the purpose or audience. As discussed earlier, "big picture" clients may only be concerned with whether the problem is external or internal. However, that knowledge alone is not enough for a human performance technologist to plan solutions. In creating HP solutions, the seven elements can be used as an ordered checklist of performance gaps.

Furthermore, an argument can be made that this list is cumulative; solving a gap for any element is useless unless there are no problems with any of the elements to the left of it in the "performance continuum." For example, don't bother designing new job aids until organizational systems are fixed. Or don't bother training until you have a solid feedback system in place.

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