Sense and Nonsense in HPT

by Dale Brethower, PhD

We can write and deliver instruction so that 90% of learners master 90% of the material," asserted National Society for Programmed Instruction (NSPI) members in the early days of programmed instruction. "Nonsense," said most of the educators and trainers that I talked to. As it turned out, "they" were wrong, and "we" were right. International Society for Performance Improvement (ISPI) members are often right when we claim we can achieve results in systemic, systematic, and replicable ways. On the other hand, I find too much nonsense in magazines, journals, and conferences related to human performance technology (HPT).

Separating sense from nonsense is especially difficult because nonsense often makes sense from at least one perspective. Were that not true, discriminating between sense and nonsense would be much easier but also much less important. Separating sense from nonsense takes more than shouting, "Nonsense!" Purveyors of nonsense do not often believe that what they are putting forth is nonsense.

Disagreement about sense and nonsense is good. It should occur more often and more openly. Why is open confrontation a good thing? Because separating sense from nonsense is important in any field. Such confrontation is one of the things that people who care about a field do. That is why papers presented in scientific journals are peer reviewed. That is why scientists argue with one another a lot, much to the bewilderment of everyone else.

Please understand that the confrontation I advocate is a confrontation about facts and evidence, not about personal ideology or unsupported personal opinions. My hope is that respectfully confronting and discussing examples of purported nonsense will help us to clarify or develop shared standards.

Please understand also that nonsense is like a daisy: It can be a weed or a flower, depending on context. A daisy is a weed in a bean patch, but it is a flower in its proper place in a flower garden. Nonsense is often misplaced or misused sense, a misplaced flower.

My approach to writing about sense and nonsense is journalistic rather than scientific. I asked respected colleagues to share their notions of sense and nonsense. The collection of people who contributed ideas represented several perspectives: a business owner, an academic, four early- to

STATEMENT	HOW IT IS "SENSE"	HOW IT IS "NONSENSE"
1. Instruction improves performance.	Teaching the right stuff to the right people at the right time can be a necessary ingredient in performance improvement.	Instruction influences only a few of the many organizational, motivational, and economic variables that contribute to improved performance. Though often necessary, instruction is never sufficient.
2. Both instructional and non-instructional interventions are important in improving performance.	Referring to instructional interventions points to ONE possible intervention, the one that MANY people in the field are most familiar with: instruction.	Referring to non-instructional interventions points only to a vast and unspecified sea of both useful and useless interventions.
3. Managers are resistant to change.	HPT professionals often experience resistance, and many consider it a bad thing.	Resisting changes that do not add value is an important responsibility of managers. The cause of the problem is that we do not know how to work with managers to implement value-adding changes.
4. Our clients keep asking for training when training is not the solution.	That is a fact, quite a wonderful one for those of us in the training business.	It will continue to be a fact as long as we continue to look at the world from a training perspective and continue to fail to look at the world from the client's perspective. The fault lies not in our clients but in ourselves.
5. We value the theoretical and research foundations of the field.	Some of us value the foundations, base our practice on the foundations, and use the knowledge to avoid costly and ineffective programs and projects.	Some of us do not have a clue about the research or theory and couldn't care less. We want practical, usable materials. Our clients don't care about the theory; they just want what works.
6. We use systemic, systematic, and replicable methods to achieve results.	Some of us do. It is our competitive edge.	Some of us aren't sure what "systemic" means but do things as systematically as we can given that every project is unique—and as long as it doesn't interfere with our creativity.

Figure 1. Statements Up for Discussion: Sense or Nonsense?

mid-career internal and external consultants, and two long-termers. I collected additional information as a participant-observer in three days of deliberation of the ISPI Presidential Task Force, held in November 2003 in Las Vegas. The deliberations were a rich source of material.

Primary Results

Figure 1 offers six statements that, like daisies, are flowers in one context and weeds in another. The statements are ones that I have heard repeatedly at ISPI conferences, read many times in publications in our field, and collected from the sources described above. The six statements include six of my seven pet peeves.

Discussion

Allow me to elaborate on the cryptic comments in Figure 1 to show why the statements are important. Then I will share some of the unedited sense and nonsense offered by my colleagues.

Statement 1

Foremost among these statements is the "Instruction improves performance" item. I bought into that nonsense back in the early 1960s.

It simply did not occur to me that the statement is as non-sensical as the statement "Hammering builds houses." Putting fasteners into material is a necessary part of building a house, but the notion that it is enough all by itself is ludicrous. But I was a hammerer (instructional developer) and figured that when the builder (manager) said hammering (instruction) was the thing to do, I hammered. I succeeded quite well in doing instruction that sometimes added little or no value. But 90% of the students learned 90% of the material!

Evaluation expert Michael Scriven observed the same phenomenon often enough to write about the distinction between merit and worth (Scriven, 1978). The 90%-90% criterion is a standard of merit. Instruction achieving that

standard has the merit of being effective. How can we say that instruction is good if most of the students fail to learn the material? The standard was a rallying cry for what we hoped would be a revolution in education: Instruct effectively!

But Scriven pointed out that such criteria do not tell the whole story about the quality of instruction. We should also consider worth. This involves inquiring into whether learning all that material worth anything to anyone? And does acquiring the knowledge and skill help the learner accomplish something of value?

ISPI member Tom Gilbert made a distinction that is functionally equivalent to Scriven's: acquirement (acquiring knowledge) versus accomplishment (accomplishing something of value). Gilbert's distinction and Scriven's distinction between merit and worth relate readily to levels of evaluation. Levels I (satisfaction) and II (learning) are roughly equivalent to standards of merit. Level III is a merit criterion for those interested in transfer of training. Organizational benefit, Level IV (and Level V, societal impact, if we use five levels) is where standards of worth are to be found.

I had thought, of course, that managers know precisely what should be done to achieve worthy goals and that subject matter experts know precisely what people should know in order to achieve them. That turned out to be nonsense. They know, but rarely in the precise way required to improve value-adding performance.

Had I been wiser all those years ago, I would have worked with managers to identify precisely what performance was required to achieve specific organizational goals. I would have worked with others, including but not limited to subject matter experts, to assure that what I was teaching was accurate and precise. Had I been wiser, I would have discovered almost immediately something that took me nearly two years to discover: Eliminating knowledge and skill deficiencies is the last thing to do when seeking to improve performance. There are systemic variables to be dealt with first.

Statement 2

One of the most nonsensical sets of words I hear repeatedly from ISPI members is the term "non-instructional variables." The category of all non-instructional variables is too large, unwieldy, and non-descriptive to be useful. The category includes a host of variables that will marginalize otherwise excellent instruction if not properly dealt with. The category includes variables associated with—
- Pay policies and procedures
- Hiring policies and procedures
- Management practices
- Feedback systems
- Recognition systems

- Promotion policies and procedures
- Marketing initiatives
- Cultural practices
- Work processes

It includes all the variables attended to everywhere else in organizations, for example, the variables considered by business plans, strategies, and tactics. Dividing the performance world into two camps—the instructional and the non-instructional—is akin to dividing the United States into Boston and outside of Boston, or the field of journalism into *The New York Times* and other journalistic outlets, or the political landscape into the enlightened (us) and the stupid (them).

Statement 3

This is about resistance to change on the part of managers. Resistance to change can be a good thing. A leader who establishes a strategic direction for an organization is subjected to pressures to change that direction; if that manager does not resist those pressures, he or she will rightly be considered weak. Parents sometimes stay awake at night worrying that their teenagers will not be resistant to change. The heating or cooling system in your house is subjected to pressures that would push the temperature outside the accepted range. The thermostat's function is to help the heating or cooling system resist change. Resistance can be good.

Resistance to change supports homeostasis: Homeostatic mechanisms are survival mechanisms for every living thing, including organizations.

Resistance to change is part of the responsibility of leadership and management. Healthy organizations have homeostatic mechanisms for resisting change. Intelligent organizations also have mechanisms for adjusting to changes. Thus, if we want to make the case that we can help managers improve performance, we might help them resist things that will not help. A list of things that will not help includes:
- Unnecessary training
- Poorly designed incentive systems
- Conflicting feedback systems
- More data (if it obscures or hides information)
- Initiatives that conflict with or compete with other initiatives
- Improvements in performance in one part of an organization that interfere with performance in another part of the organization
- Problem fixes that interfere with problem prevention
- Replacing personnel instead of replacing defective processes or procedures

We should be grateful that managers are resistant to change. The list of changes that will not improve performance is

much longer than the list of changes that will. Indeed, as I have watched managers commit scarce energy and money to faddish quick fixes and invalid approaches, I have often wished that they were even more resistant to change.

Statement 4

Clients request training when training is not the solution. This is a common lament in our field. I typically use this example during the opening value-sharing part of ISPI chapter meetings. It has not failed me once in the last 20 years. As I say it, chapter members smile and nod knowingly. They know that I have walked in their shoes.

But consider these questions:
- What would you expect managers to ask for from someone in the training department? A non-training solution?
- How would managers know that they should ask you to poke your nose into their business so you can tell them some things they should be doing but aren't?
- Why should they trust you enough to invite you onto their turf to poke around?

Statement 5

Some of us value the theory and research foundations of the field. It is an acquired taste that a few of us have when we enter the field and others acquire during their first few years. I value the foundations because I know, like, and find them useful. But I can't figure out why anyone who doesn't know the foundational knowledge or doesn't know how to use it would like it very much. Besides that, acquiring the foundational knowledge is not easy.

It is not very efficient to acquire the knowledge of research and theory the way I did. Not many sensible people have the time, money, or inclination to go to school for years and years to learn the theory and research. It takes additional years of muddling through to acquire the skill necessary to apply the theory and research knowledge properly. Following the meandering footsteps of the elders in the field lacks merit and would be extremely costly, no matter how much it might be worth.

This item is in Figure 1 because practices consistent with the theory and research (including the research about validated practices) are the driving force for HPT. Thought leaders have stated several times in the past that ISPI is and/or should be a technology-driven society. A technology is based on a foundation in theory and research and on the methods that yield verifiable and predictable results. There is nothing wrong with a society of professionals designed to serve the special interests of members through lobbying efforts, entrance requirements, or purchasing power for insurance, books, or whatever. But that is not ISPI.

ISPI serves interests of members by being, at minimum, a community of practice in which members seek to learn from one another for the purpose of improving results—the results we can achieve for and with our clients and employers. By asserting that we are a technology-driven society, we mean that there is a solid foundation in theory and research supporting the tools we use to get results. Thus, I urge ISPI members to consider the item "We value the theoretical and research foundations of the field" to be descriptive of some of us and an aspiration or goal or intention of all of us. It makes sense if interpreted that way, but it is nonsense to say that it describes us all.

Statement 6

The statement is that we use systemic, systematic, and replicable methods to achieve results. The statement is similar to Statement 5. It is an aspiration of all of us (I hope), and descriptive for a few of us—a growing few, I might add. We do well on "systematic" but not so well on "systemic."

I think we all go about our work in an orderly way. Many of us have done "our thing" so often that we are able to replicate it. We might train others to do our thing and can therefore say with confidence that our methodology can be used by others to get similar results. Once we can do that, we can claim systematic and replicable results. Claiming that is a very strong claim and one for which to be proud. It cannot be supported by people who do not measure results or who do not specify how the results can be achieved.

On the other hand, we often fail to work systemically. I began aspiring to work systemically in 1963 or thereabouts, when I first began to learn what it meant. Every once in a while I succeed. To the extent that my work is not systemic, it will fail in the long run (except occasionally when I am extraordinarily lucky).

Let me amplify that notion: *If my work is not systemic, it will fail in the long run.* How can I know that is true? It is true because of the interconnectedness of system variables and it is true also because working systemically is not an option. We cannot stand outside the stream of variables that influence our performance and the performances of our clients. If you or I develop a work team, that team is influenced by a host of organizational variables. If we work with others in an organization to develop a performance appraisal system, a training program, a set of cultural practices, a new product development process, a marketing program, or any initiative, that initiative is influenced by systemic organizational variables—whether or not we know it or like it.

Again: Working systemically is not an option. We have the option of working in ignorance of system concepts and principles, of systemic variables. We also have the option of working with knowledge of system concepts and variables.

If we choose to work from knowledge, knowing what a system is might be a useful place to start. The book definition of a system is "a set of elements and relationships." Some of the properties of a system include the following (Miller, 1978):

- Boundary: It has a boundary, something that defines which elements are members of the set and which are not (we know, roughly, what is part of XYZ Company and what is outside).
- Interconnectedness: Every element in the set is connected to and influenced by every other element in the set.
- Open: All biological systems, from single-cell organisms to nations, are open in two senses. First, matter, energy, and/or information pass in and out of the system. Second, they consume external energy to continue functioning; without external inputs, they die.

I learned about the systemic nature of organizations for two urgent and practical reasons. First, I found myself with the responsibility for ensuring that a specific organization delivered services that were worth more than they cost. Second, I discovered that I was hooked on achieving measured and valuable results.

The organization was the Reading Improvement Service at the University of Michigan. I discovered soon after becoming the person in charge that the best management practices did not enable me to manage the services well enough to ensure that we met our goals. (I had the data—we were good as benchmarked against others but not good enough as measured against our goals.)

It was obvious from the beginning that the best practices in reading instruction and in the diagnosis and treatment of reading disability were good enough to help *many* children learn to read but not good enough to enable *most* of the children referred to us to read well enough to succeed in school. Showing gains in reading test scores was a measured means; enabling all clients to succeed in school was our goal.

In addition to that work, I was involved with another client group: people who came the University of Michigan's Center for Programmed Learning for Business to learn how to create programmed instruction/validated instruction. Just as best practices in reading instruction were not sufficient to enable all children to read well enough to succeed in school, best practices in instruction did not solve organiza-

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More Examples of Sense and Nonsense*

Nonsense	Sense
Butt-in-seat time or number of "student hours" are a valid measure of human resource success (rather than results connected to the critical business issues)	Connect success of human resources development to value added: Does the value outweigh the cost? Performance improvement on the job is *one* measure of training
We often claim that results that follow training are due to the training; even though other events or situations contributed to those results	Without stakeholder support in the workplace, even the best training won't be fully applied by learners
Creating job goals that aren't aligned with process goals that are not aligned with organizational goals	Creating job goals that support department goals that support process goals that support line-of-business goals that support organizational goals. This reduces frustration and confusion for employees and customers
Clients are continually looking for new approaches to training, the latest and greatest that is not grounded in theory and practice (snake-oil)	Save your money for something that is grounded in research
Claiming that HPT is a technology (By definition, technology is the application of science. Without developing underlying principles, rooted in science, there can be no effective technology)	HPT is about human performance "something." We have yet to establish the underlying science supporting HPT, *much of which is available in the literature,* but has not been incorporated into principles. Until that occurs, what we practice is something, but not a technology
Changing a process will automatically result in increased performance; Changing human behavior alone will result in optimal performance	The appropriate combination of human and process variables must be modified so that they support each other and are in alignment to achieve optimal performance
People making decisions by the seat of their pants	They could as easily use data to decide
Using invalid 360° feedback once or twice a year to provide feedback and evaluate performance	Provide ongoing feedback (360° *feedback* is a misnomer)
Response-inferred constructs such as "emotional intelligence"	Stop doing this! Response-inferred constructs are the camel's nose for nonsense

*As suggested by those appearing in the acknowledgments at the end of the article.

tional problems, even when requested by very smart managers and when designed and implemented competently.

Thus, the urgent and practical issue was simple: Either I had to learn how to be much more content with failure or I had to learn how to succeed much more often.

The systemic property that was most real and most vexing to me was the interconnectedness property. Everything in a system is connected to everything else. Try to push on one thing and everything else pushes back. The interconnectedness property made itself felt while I attempted to manage the Reading Improvement Service and in serving both client groups. I just wanted to teach children to read, but their reading competence was connected to a whole array of variables. For example, some children were from dysfunctional families and were going to school to experience dysfunctional educational practices. While I just wanted to teach people how to create programmed instruction, they were from organizations that did an imperfect job of identifying beneficial instruction and an imperfect job of managing performance in the workplace.

I discovered to my dismay that working systemically versus not working systemically is not a choice. We live in a large natural system, work and live within an economic system, are aided or constrained by a governmental system, and work with and in organizations that function as systems. Of these truths we have no choice.

Conclusion

Sense and nonsense abound in HPT. There is no single cause of the abundance of nonsense. But there is a reason that nonsense is more abundant than sense. The reason is that any principle has a specific domain of applicability. Within that domain it is sense. Outside that domain it is nonsense. Do heavy objects always fall? Not unless they are pulled by heavier objects and are free of opposing forces. Does water always freeze at 0° Centigrade? Only at certain pressures. Do fish have to swim? Only if there is no other way to capture oxygen. Can we always reduce the temperature of a glass of water? Only to a certain point, near 0° Kelvin. Some principles, especially in physics, have a very broad domain of applicability. Some principles of HPT also have a very broad domain of applicability, but that is weak consolation if only a few people know these principles.

Why is there so much nonsense in the field? Not because we are collectively ignorant but because we are individually ignorant. That is a reason for personal humility and shows the value of collaboration (as espoused by ISPI's Standards of Performance Technology).

Standards of Performance Technology

1. Focus on results and help clients focus on results.
2. Look at situations systemically, taking into consideration the larger context, including competing pressures, resource constraints, and anticipated change.
3. Add value in how you do the work and through the work itself.
4. Utilize partnerships or collaborate with clients and other experts as required.
5. Be systematic in all aspects of the process, including the assessment of the need or opportunity.
6. Be systematic in all aspects of the process, including the analysis of the work and workplace to identify the cause or factors that limit performance.
7. Be systematic in all aspects of the process, including the design of the solution or specification of the requirements of the solution.
8. Be systematic in all aspects of the process, including the development of all or some of the solution and its elements.
9. Be systematic in all aspects of the process, including the implementation of the solution.
10. Be systematic in all aspects of the process, including the evaluation of the process and the results.

Code of Ethics

The Code of Ethics is intended to promote ethical practice in the profession. To be certified or re-certified, you must sign a statement that you agree to conduct yourself in ways that are in keeping with the principles on which the Code is based. The code of ethics is based on six principles.

1. Add Value Principle: Strive to conduct yourself and manage your projects and their results, in ways that add value for your clients, their customers, and the global environment.
2. Validated Practice Principle: Make use of and promote validated practices in performance technology strategies and standards.
3. Collaboration Principle: Work collaboratively with clients and users, functioning as a trustworthy strategic partner.
4. Continuous Improvement Principle: Continually improve your proficiency in the field of performance technology.
5. Integrity Principle: Be honest and truthful in your representations to clients, colleagues, and others with whom you may come in contact with while practicing performance technology.
6. Uphold Confidentiality Principle: Maintain client confidentiality, not allowing for any conflict of interest that would benefit you or others.

Is there hope that sense will grow and nonsense decline? Hope springs eternal. There are three powerful reasons for that hope:
1. Open confrontation of issues yields both clarification and substantial agreement.
2. There is substantial agreement regarding what is sense and what is nonsense.
3. ISPI's Certification Standards and Code of Ethics (see above) have the potential to guide us all in generating more sense than nonsense in the coming years.

The material in the sidebar on page 10 provides a consensus definition of the characteristics of sense in HPT as it relates to professional standards and ethics. ◿

References

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Dale Brethower learned fundamental concepts of general systems theory while growing up on the family farm in Kansas. Three years at the University of Kansas yielded a degree and the conviction that there is both sense and nonsense in academia. Earning a masters degree at Harvard enabled Dale to learn that there is a science of behavior and showed him how to apply it in natural settings. While studying with B.F. Skinner, Dale learned that many intelligent people believe utter nonsense about behaviorism, such as the ridiculous idea that behavior principles cannot be applied to cognition and emotion. He earned a PhD from the University of Michigan while learning additional system principles and the names and nuances of the general systems concepts he had learned back on the farm. Dale applied general systems and behavioral psychology principles successfully in a not-for-profit agency as Chief of the Reading Service. He has also consulted with schools and private businesses and been active in ISPI for about 40 years. A professor emeritus of psychology (Western Michigan University), Dale writes, publishes, operates three small businesses, and continues to learn from Carl Semmelroth, Geary Rummler, Karolyn Smalley, and dozens of former students and ISPI colleagues. Dale may be reached at dbrethow@wmich.edu.

Masters Statement

What defines my mastery?

The same thing that defines anyone's mastery: generating results that are worth more than they cost and doing so under a variety of conditions. Results I am proud of include developing a staff who taught children to read, college students to learn, and non-literate adults to read difficult material; collecting data to document the results; working with Geary Rummler and others to develop exemplary workshops in HPT as measured by results generated by graduates; converting a moribund MA program in I/O Psych into a thriving MA program, as measured by throughput and external recognition; working with colleagues to graduate outstanding students, as measured by their employment and publication records; and getting results working with numerous clients in for-profit and not-for-profit organizations. The common thread among these areas is using the fundamentals of HPT: applying substantiated theory and research to real human performance issues and attaining valuable and measured results.