



**Title:** *A HARD LOOK AT ISD* , By: Zemke, Ron, Rossett, Allison, Training, 00955892, Feb2002, Vol. 39, Issue 2  
**Database:** *Business Source Premier*

## **A HARD LOOK AT ISD**

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Instructional Systems Design continues to bear the brunt of a great deal of criticism. But is it right to condemn **ISD** as a once-useful-but-now-irrelevant tool? Or are those who use it to blame for its apparent failings?

In April 2000, Training published an article questioning the contemporary relevance and efficacy of Instructional Systems Design, the time-honored approach to designing and developing training programs. The article presented four criticisms of the **ISD** model (see "Opening Salvo" sidebar, page 35), exemplified by the views of six highly respected and seasoned instructional designers. The article resulted in a firestorm of controversy.

We were inundated with mail—electronic and otherwise—as were the six industry experts interviewed for and cited in the article. Responses ranged from affirmation to outrage. Many of the affronted challenged the magazine's right to make the critique it did and chose to berate both the authors and the experts whose views were cited.

Others, however, labeled the criticism of one of the training field's most revered catechisms as well-meaning and serious. The article became mandatory reading in many instructional design graduate programs around the globe. Several industry conferences, including Training 2001, held sessions addressing the issues raised and at least one by-invitation-only conclave dissected the arguments raised in the article.

In the 20 months since the article ran, we have listened to the discussions, read the retorts and participated in the panels and decided to push beyond a summary decision about **ISD'S** goodness or badness and **look** at the continuing dialogue. Specifically, we—and the discussions we've monitored and participated in—come back again and again to what may be the most hotly debated question: Is it **ISD** that's flawed, or is the manner in which people are translating **ISD** into practice the problem?

### **[It's The Process](#)**

The idea that the **ISD** process itself is flawed is, for many, a **hard** one to swallow. Some of its defenders think **ISD** is being maligned simply because it's difficult to define, it continues to change, and the problems that are raised are about the wrong version of **ISD**.

Some brush aside all the criticism with a dismissive, "That's old **ISD** they are complaining about, not today's **ISD**." The latter is most often voiced in defense of a form of **ISD** in which the speaker has a vested interest either as a practitioner, an inventor or both.

Is **ISD** misunderstood? Florida State University's Walter Dick, one of **ISD'S** most venerable graybeards, defines instructional design as simply "applied educational psychology," hardly a controversial, let alone confusing idea. But it is when **ISD** is deemed as a rigorous process—approaching a technology—that raises the issue and controversy.

Patricia Smith and Tillman Ragan, instructional design professors at the University of Oklahoma, Norman, Okla., share a desire to make **ISD** even more rigorous. They point out that in every other design profession such as architecture, engineering and interior design, there is a commitment to goals, plans, problem-solving and evaluation.

And indeed who can fault **ISD** for taking this high-level lesson from other disciplines and professions? Trainers tasked with maintaining the skills of cable installers, nurses or structural engineers must use what is known about how people learn and about how to do work effectively—systematically—if they are to be judged competent. Anything else would be wasteful, argue Smith and Ragan.

This generic “it’s just how we get work done” view has led many an **ISD** expert to argue that **ISD** should be appreciated simply as a project management scheme rather than as a step-by-step recipe for building instructional programs and materials.

“Almost any project, from remodeling your bathroom to designing a new car, follows that model. It’s not that the model is wrong,” argues Gayeski, “it’s just too generic and simplistic to be really helpful for the detailed design of instruction.”

Still, when specific meat is hung on the generic **ISD** bones and advocates start specifying an order of steps, data requirements, evaluation approaches and instructional treatments, the concerns begin.

Most **ISD** approaches specify that the output from one phase of an **ISD**-driven project must serve as input for the next phase. For example, what is learned during “analysis” shapes the solution mix as well as the objectives that frame the effort. Not surprisingly, the learning objectives then enlighten decisions about strategies and evaluation. It all makes sense from the 500-foot, theorist point of view.

Some critics have declared that this seemingly obvious, straightforward, linear project management-like process, with its hands-off, checks and balances is a primary cause of the cost and speed issues experienced by practitioners attempting to conduct by-the-book **ISD**. “Compromise is one of those words we don’t use very often with our students,” says Kent Gustafson, professor emeritus of Instructional Technology, University of Georgia, addressing the critique that applied **ISD** is often too linear and rigid a process. “We don’t teach them anything about efficiency,” says Gustafson, “and we do a lousy job of preparing them for the real world.” To many, this sort of criticism argues for throwing out the book, and relegating **ISD** to the ash heap as a 20th century relic.

Not everyone agrees with such a sweeping assessment. In fact, some argue that **ISD** should strive to be more, not less prescriptive. “**ISD** is essentially a series of empty boxes, and we need more content for those boxes if we are to deliver better training,” says M. David Merrill, professor of instructional technology at Utah State University and one of **ISD**’s pioneers. “A Shakespearean sonnet is very prescriptive, very precise. Yet writing a sonnet is a very creative act. There’s nothing wrong with the right prescriptions.”

What would such training development prescriptions **look** like? Most **ISD** proponents argue for defining **ISD** as a set of general guidelines, a heuristic, and not a rigid step-by-step algorithm. If **ISD** is a heuristic, then it is all about guidance for decision-making on matters as diverse as developing interactive elements, instructional programs, and selecting performance and support over instruction.

Heuristics provide support for these decisions. They present guidelines and rules of thumb and are mental bases touched when considering a situation, such as when to use technology, how to advise a student or even how to motivate an employee.

While algorithms present steps in prescribed sequence, heuristics are more forgiving and thus, the experts argue, more useful for knowledge workers. Consider this example: There is an algorithm for taking out money from an ATM. Mess with a step or the order of steps, and you won’t get your money.

On the other hand, there are heuristics for deciding how much cash to withdraw. Sometimes, for a very special occasion, you might skip a rule you have given yourself about staying within the household budget and slip into overdraft.

There’s value in both the algorithmic and heuristic aspects of **ISD**, according to Terry Bickham, director for worldwide curriculum development at San Diego-based Peregrine Systems. “Of course, our software training classes cover prescriptive procedures such as how to load the program, set up users and handle security. That’s easy to build training for,” he explains. “But our software is also infinitely customizable to map to our customers’ unique business processes.”

The challenge Bickham and others face is that in today’s complex world there frequently isn’t one right way for much of the work that needs doing. **ISD** was conceived when processes and procedures were more linear and more predictable. Ironically, the design process has become stuck in the same step-by-step groove.

“We sold **ISD** and taught **ISD** as all these steps people must go through, not as a heuristic,” says Marc Rosenberg,

senior principal with New York-based DiamondCluster International. “If **ISD** is really a heuristic, and I think it is, we have a lot of unlearning to do.”

John Murphy, president of Executive Edge, a Fairfield, Conn., executive development firm, doesn't care if **ISD** is defined as algorithms, heuristics, boxes, bullets or arrows. He opines that **ISD** as a guiding framework for training and development is a wrong-headed approach—regardless of what is or isn't in the “boxes.”

Murphy, who also served as general manager of Xerox Learning Systems, sees **ISD** as basically flawed in perspective. “The major problem with **ISD** is that it has become the underlying framework guiding training and development; it has displaced the more critical focus on results, **ISD** focuses on INPUTS; management wants OUTPUTS. To get outputs, you start with outputs, not design and development strategy.”

## It's The Practice

**ISD** as a heuristic, as a generic framework with some training best practices and some psychology of learning ideas strung together seems a pretty benevolent entity. Unless, as many contend, it is pushed beyond rational utility and made into a lock-step straitjacket. That, critics say, is exactly the problem.

While there is really nothing wrong with a systematic approach to designing training, “we've created a religion around it,” says Rosenberg. “We've tried, for instance, building these great binders of directions on the assumption that a Ph.D. in instructional design and a monkey, both following the steps in the binders, would produce the same instruction. Well they won't. But they will produce the same documentation. I think we've put the process before the people who actually do the process, and that's what led us astray.”

Rosenberg goes on to observe that **ISD** is a great tool, but it will never replace the insight and perspective of a seasoned person who actually understands something about learning. “**ISD** does not define our profession,” argues Rosenberg, “and it's a mistake to believe it does.”

Criticism of **ISD**, though oftentimes valid, should be put in historic perspective, cautions Donald Tosti, president of Vanguard Consulting in San Rafael, Calif., and one of the six original critics. Specifically, he reminds us that the “cook-book” approach to instructional design comes out of the widespread adoption of **ISD** by the military in the early 1970s. This “**ISD** for dummies” strategy, he offers, was created to allow people with little experience to create reasonably acceptable training.

“The result of this approach was an over-emphasis on some factors of instructional design and an under-emphasis on others,” says Tosti. “For example, ‘cookbook’ **ISD**, circa 1970, used behavioral objectives to control and focus the development of instructional materials and exercises. But at the same time many very experienced technologists were producing effective and innovative instructional programs throughout the 1970s without writing a single behavioral objective unless required to do so by a client.”

These people were focused on end results and accomplishments, explains Tosti. “The process of writing a series of objectives that met **ISD**-like requirements was simply a time-waster and when such a model is positioned, not as a helpful cookbook, but as a lock-step bible that must be followed, it becomes more of a liability than an asset,” Tosti says.

Writing 800 behavioral objectives is a misunderstanding of **ISD**, says Utah State's Merrill, who then goes on to ask, “But what is the alternative? Not to specify subject matter? Or not to define how you're going to do it? I don't think there is an alternative. We need to be using **ISD** more efficiently, with greater skill.”

Concerns about how **ISD** is frequently practiced—or malpracticed—extend beyond the training and development community. One of the experts interviewed for this article recently listened to an engineer in a technology company bemoan the fact that he was losing senior management support because a training analysis he had commissioned was in its 10th month of surveying and interviewing, **ISD** in this beleaguered client's view was synonymous with analysis paralysis.

An investment in instructional design and **ISD**-trained designers ought to guarantee something better. But does it? Dee Olsen, assistant director of advanced learning technologies at the IRS, likes what **ISD** does for her organization: “We have a methodology that is **ISD**-inspired,” she says. “We need consistency in our large organization, and it is through **ISD** that the IRS gets that consistency.”

An even greater value for the IRS, says Olsen, is that learners can anticipate how its programs will work. “They don't

have to learn endless ways of learning and finding information," she says.

Another positive view of **ISD** as it is practiced today comes from Marguerite Foxon, a performance technologist at Schaumburg, Ill.-based Motorola. Think about surgery. If a surgeon operates on me and I wind up with a nasty scar, then I've had one bad surgeon. But I don't think all surgeons are hopeless, and I don't steer clear of surgery forever. Same is true with what instructional designers bring to the table."

Foxon sees more examples of success from using **ISD** than failure. She argues that critics can always point at the analysis that took forever or a boring program, but she suggests that this kind of design is mostly the work of novices.

"They attempt to apply rigorous **ISD** steps to the effort, when heuristics would serve them better," Foxon says. "An experienced instructional designer can be both fast and useful because he or she will make good decisions about what to do and what to skip. There is a dear return on investment when savvy instructional designers do their thing."

For others, the framework that **ISD** provides is better than having nothing at all. Marcie Bober, assistant professor at San Diego State University and both a teacher and user of **ISD**, had been a classroom teacher for many years when she stumbled onto educational technology and instructional design and suddenly realized that she could no longer lay the blame for general disinterest in learning or less-than-stellar academic achievement on her students, their parents or "ghastly" teachers of the past. She says: "I was a good part of the problem. I was activity-driven rather than outcome-driven; the creator of vague, ambiguous objectives, ill-matched to actual instruction and most assuredly to assessment; the deliverer of instructional strategies tailored to no one; the pontificator of knowledge."

What attracted Bober to **ISD** was not the purported lock-step methods of which some training specialists complain, but rather its general systematic nature. "In **ISD** I saw my potential to respond to all sorts of learning needs," says Bober. "I was and still am enamored of its situational adaptivity ... its ability to 'work' with so many different media."

Another facet of rigid and faulty practice is the desire of some trainers to be seen as professionals, wielding a valid and reliable technology, according to Executive Edge's Murphy. "Most practitioners believe that [having a] technology is the key to being seen as a professional. The problem here is that **ISD** fails to meet even the most rudimentary requirements of a technology," he says.

## The New Technology Challenge

If traditional training is a challenge for **ISD**, there are those who believe it is more so for the new creative blends of online learning and performance support that are becoming prevalent today.

"**ISD** in the traditional sense **looks** fired ... while the rest of the world is getting wired," says SDSU assistant professor Vanessa Dennen. "We need to bring our processes and theory up to date to match the technology at this point in time."

Dennen remembers her first instructional design job, thinking that she had to follow the **ISD** model to the letter. "I realized pretty quickly that to really succeed in practice I needed to adapt to the environment and do what made sense," she says. "That variable—the environment—keeps getting more and more complex as we throw distributed communication technologies, sophisticated databases and intelligent systems into the mix."

Motorola's Foxon disagrees, attributing much of the dross created by e-learning and new media companies to a lack of **ISD** rather than a lack in **ISD**. "**Look** at the e-learning packages that people are trying to sell," she says, "There are few that give any evidence of real instructional design. Too many programs are just content dumps with flashy graphics. They lack tight practice opportunities, proper chunk size and sequencing, and learning experiences that are problem-based."

Despite the undeniable influence that the recent technological avalanche has had on all things learning, the question remains: Is **ISD** dead? The answer is no, but at the end of the debate and discussion we are left with what can be a confusing situation, **ISD** advocates, in their enthusiasm for the process, have over-sold the robustness of that process. In fact, like economics or even medicine, **ISD** is more an assemblage of rule of thumb and common practice than a pure science.

But do critics of the process of the way **ISD** is put to practice have some fair points and reasonable concerns? We believe they do—though not all engaged in recent discussions would agree. In the end, however, we concede for now, an observation made by Marc Rosenberg that sums up the state of **ISD** and the arguments about its weaknesses. "It's like that old definition of democracy," he observes. "It's the worst form of government—except for all the other kinds, **ISD**

is the best thing we have, if we use it correctly.”

“Who could argue that instructional program development should not follow the analyze, Design, Develop and Evaluate sequence?”

—Diane Gayeski, Professor of Organizational Communication, Learning and Design at Ithaca College, Ithaca, N.Y.

“Compromise is one of those words we don't use very often with our students. We don't teach them anything about efficiency and we do a lousy job of preparing them for the real world.”

—KENT GUSTAFSON, PROFESSOR EMERITUS OF INSTRUCTIONAL TECHNOLOGY, UNIVERSITY OF GEORGIA, ATLANTA

“**ISD** is essentially a series of empty boxes, and we need more content for those boxes if we are to deliver better training.”

—M. David Merrill, professor of instructional technology at Utah State University

“Most of the criticism focuses on a few examples of poor or slow training that have given the entire enterprise a bad name.”

— Marguerite Foxon, Performance Technologist, Motorola, Schaumburg, Ill.

“Our clients are not asking for professionalism, they are asking for results. Nothing is more professional than results.”

—John Murphy, President of Executive Edge Fairfield, Conn.

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**Source:** Training, Feb2002, Vol. 39 Issue 2, p27, 7p

**Item:** 6048920

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