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By **Penelope B. Grenoble**

In our quest to discover innovative training opportunities in the construction industry, we've looked at a New Hampshire grade foreman's boot camp that's taught in an indoor soccer field and a learn-by-bus program that comes out of the water industry. Along the way we've established some training universals, including live instruction that facilitates instructor-student interaction, hands-on experience and the chance for participants to swap knowledge and experience. Veteran construction industry educator Harry Ward would add two more: 1) respect the people you aim to train, and 2) be opportunistic.

In a word, know who you're training, what their needs are and tailor what you offer accordingly. (Offer is the operative word; the offer has to be right if you want the people you aim to teach to pick up on it.) Sound familiar? Certainly. But Ward puts his money where his mouth is.

First off, he points a finger at the construction industry's dirty little secret, which is that, given the way the industry has evolved, "The guys who come in with the least education have the highest need for technology and automation."

In Ward's view, surveyors come in second, and engineers, the most educated of the bunch, actually use technology the least.... "All they need is a pencil and a CAD program." The corollary to this stark observation is that construction is far behind when it comes to providing employees at the build end of the design-build spectrum, the education they need to do their jobs. (Note that Ward, a seasoned educator, as well as a registered engineer, uses education as opposed to training, suggesting a more formal and principled approach.)

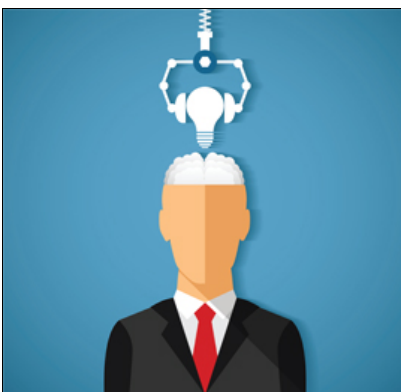
His argument continues that this technology/training disconnect is complicated by how contractors view themselves and what they do. "Contractors don't want to be office weenies, and they don't have time for fluff. They're very hands-on and production-oriented. They don't like the administrative portion of the software. They want the calculations, the computations. They want training that shows them how to do the things they need to do every day in the field." Sound about right?

It turns out that our man knows of what he speaks. Besides being an engineer and a member in good standing of the engineering faculty at George Mason University in Fairfax, VA, Ward has been educating contractors on construction software and 3D modeling for over a decade. He runs Hawkins-Raider Inc., the only company currently authorized to provide training for Bentley, Carlson, and Autodesk. He developed Carlson College, the software manufacturer's highly successful dedicated training arm, and works with construction firms around the country designing what he calls "Internal Universities," which provide training as a path to career development.

Ward's pet peeve is that much of what passes for education in the construction industry is actually developed for marketing and sales. "It still boggles my mind how sales people can offer training."

In contrast, he insists that it's in everybody's interest "to promote education and fine-tune it exactly to what the

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customer is doing.”

Not surprisingly Ward has firm opinions about industry staples such as E-training (“the cheapest but least ideal way to train”) and webinars. “I can only guess, but I would say probably eight or nine out of ten companies develop these webinars for marketing purposes, to demonstrate their software on the customers’ own time so the salesman doesn’t have to do it. I mean, how do you learn to design a highway in an hour?” Webinars with a live instructor, however, pass the test if the instructor has access to participants’ computers and can work through any problems they encounter. Canned webinars, “where you sit back and watch the screen while someone talks to you for an hour” are of marginal benefit and should be tied into advanced training.”

Although Ward thinks there’s room for a variety of training tools as long as “they’re applied correctly and appropriately organized and prioritized,” he remains firm that the key (not to mention the challenge) to good training is a curriculum that not only respects your audience’s interests, but also is engaging as well as informative—what he describes as courses contractors can “dive into and get almost immediate return on their investment.”

It all started with a call from Topcon President Ray O’Connor. As Ward tells it, Topcon had just developed Millimeter GPS, and O’Connor realized that without people who were trained and capable of developing data, he was going to have a tough time selling his new technology. And could Ward perhaps put together some courses that would make that happen? Ward allowed that he could. “Here he is saying people have to be educated to use what he was about to go to market with. None of them—Topcon, Trimble, Leica—can sell their hardware if the customer doesn’t know how to prepare the data to feed it.”

But in the process of developing and delivering the software training that would help contractors do just that, Ward had an epiphany of his own, which was that the door swings both ways. Software proficiency was certainly essential to maximize what the new equipment offered, but for the marriage of software and machine to be efficient, contractors also need to know the tricks of the trade when it came to the hardware.

“Dealers complain that they want to provide advanced training on the hardware, but they rarely find a window to do that. The reality is that when a contractor purchases machine control, whether it’s indicate-only or full-blown automation, he usually gets a brief training course on the basics and then he’s pushed into production.”

To Ward, the answer was obvious: recognize the dualistic nature of the training challenge and educate on the software and the hardware simultaneously.

How to facilitate this innovative approach? Via the most opportunistic route possible: Partner with machine control dealers. “Dealers have the same problem Ray O’Connor identified years ago. In order to sell the machines, they have to have knowledgeable customers. With our software courses, we help them create those knowledgeable customers. Likewise, while they recognize the importance of advanced hardware training, rarely do they find a window to show their customers things like how to trick the blade or move the sensor for a different result. We help provide that opportunity. If something goes south on a construction site, it’s either the software or the hardware, so why not prepare contractors in both?

“Our direct training is on the software and model making, but by partnering with interested dealers and using their equipment labs and trainers, we help bring education on advanced hardware to customers who otherwise would be left with only the basic training that comes with the hardware purchase. Here’s an example . . . if a contractor has to build a six-foot shoulder on a highway, he’s got to keep in mind that the blade on the dozer or motor grader is 12 feet. We teach them how to trick the blade so it thinks it’s only six feet long, and they can go ahead and grade their little heart out.

“We’re mixing hardware training with software training in a very natural, organic way,” he continues. “I feel good when I leave the training, because it’s not just a bunch of software and some promises that everything will go on the job just like it did in class. The people we train this way know the equipment, how to trick it and play with it, and they know the results and the ramifications.”

What Ward calls the Public Course is typically three days with 10 participants at a cost of \$1,895 per person. The first day is fundamentals—what everyone needs to know, regardless of orientation or specialty. The second day moves into advanced modeling and onto road design. The third day is usually advanced line development, sharing models, quality control, and such. It’s typically on the second day that the dealer brings in his equipment lab. “We usually do the hardware portion a couple of hours during lunch,” says Ward. “It becomes like the lunch-time entertainment.”

To teach the software he provides a full mobile lab with individual laptops that come loaded with software from Autodesk, Bentley, and Carlson, plus specially developed textbooks including procedures and applications with data sets for everything the instructors teach. In line with its philosophy of respecting customers’ interests, Harken-Reidar offers customized classes (\$950 for two days) that address specialized data preparation techniques, from runways to roads to subdivisions. He’s quick to point out that his instructors are licensed professionals who have been in the business more than 10 years and are proven educators. “Everyone here can do legally what they’re training others to do.”

So, for better or worse, Ward has exposed the emperor’s lack of clothes. It’s a challenge the construction industry ignores at its peril. Ward and his allied equipment dealers have taken a small step in the right direction, and it’s hard to argue with his idea that teaching hardware and software together “creates the best operator you could ever imagine.” For more information, see www.harken-reidar.com, and click on “Training & Learning.”

Next time: Harken-Reidar’s “Institutional Universities.”

Note: in the last column we wrote about the wisdom of connecting and sharing resources. Reader Todd Van Rossum, President of Everrest Excavating Inc. writes to say that he has helped develop a Website that saves contractors time, fuel, and money by connecting them with closer dump sites and sources for their construction material like clay, topsoil, stone, etc. See www.materialtracker.com for more information.

Author’s Bio: Penelope Grenoble is a frequent contributor to Forester Media.