

Teaching GDT as a Native Language

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I recently chatted with a colleague who speaks two languages. Spanish is her first language and English is her second. During some of our conversation, I noticed gestures that indicated she was trying to figure out how to communicate her words in English. I asked how she processes her thoughts when speaking in English. She said she thinks in her 1st tongue to speak in her 2nd tongue.

Then it dawned on me. This is the same struggle most people have with GDT. It's been around for multiple generations. Manufacturers agree it is the universal language for industry. Yet, our trainers and educators teach GDT as a 2nd language. 2nd Language! How can the “universal language of the industry” be secondary?

We, as an industry, need to lead a paradigm shift by taking it from secondary learning to native tongue. We're currently teaching Limit Dimensioning (LD) as the native tongue with all its flaws and then GDT later down the line, similar to learning a second language. Consequently, learners think in LD to understand GDT. Not only do they struggle with GDT concepts, but they also only understand the parts of it that are relatable to LD, ignoring the rest.

So how do we lead this paradigm shift with GDT? First, we must forget the idea of learning LD first, then GDT later. Rather, GDT should be taught with LD as one language. Before I get into how we teach GDT, I need to touch on why GDT is so important.

In the past, limit dimensioning worked because the person making Part A of an assembly was most likely also making Part B. Using tribal knowledge and craftsmanship, the person was able to machine both parts to fit and work together as intended.

In today's world of global mass production, Part A and Part B are most likely not even being made in the same country, much less by the same person. Without GDT to communicate the designer's intent of the part, we cannot be confident it will be made and inspected correctly.

In this environment, it's more important than ever that people in our industry can correctly speak one common language to communicate precisely. That language is GDT.

So how do we ensure GDT is a native part of our manufacturing language? Rather than teaching it secondarily, we need to include it in the entire learning process, and we do this through an approach called "weaving."

Weaving conditions learner's critical thinking with GDT even when the primary learning objective is not GDT. It's as a "wax-on, wax-off" approach. In the movie *The Karate Kid*, sensei Miyagi and his student Daniel strike a deal: "I will teach you karate. You will do what I say." But instead of teaching and



mastering one move at a time like they do in a traditional dojo, Mr. Miyagi teaches Daniel karate through everyday tasks - cleaning cars, painting the fence, etc... Wax on. Wax off.

The lesson? Karate isn't a separate discipline you learn at a dojo and apply when needed. It's a part of your everyday life. This is how we should be teaching GDT to our future engineers, designers, programmers, and machinists. As a part of their everyday life, not something they learn separately.

For that to happen, the first thing an organization needs to do is train their leaders how to speak GDT while teaching other things. GDT should be woven into all learning experiences. Of course, print reading and quality control, but also during every shop activity and conversation from the beginning of the



learning process. The trick is to find those places in your training where it's natural to integrate GDT concepts and communication, then weave! NIMS [Geometric Dimensioning and Tolerancing](#) training deepens your knowledge of GDT, teaches you how to find those natural places, and how to weave it into the training you've already created. This GDT training will change the culture of your organization and make GDT the 1st language of the entire workforce.

Always learning,

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