

What and Why TWI?

If you haven't heard the buzz about TWI yet, it's likely that you will soon. In fact, you may want to start learning about Training Within Industry now, because it could make a big difference in your company's lean implementation. TWI has produced some dramatic gains.

- Between 2002 and 2004, using TWI, a high-end foundry was able to reduce initial wax mold assembly defects by 96%, which increased on-time delivery to customers 80%.
- A medical bowl/orifice manufacturer was able to reduce required production hours by 35% and thus increase daily production output by 17%.
- Yet another company, using TWI as a means to solicit employee ideas on how to improve processes, got 150 proposals the very first month after delivering the training.

For more than 60 years TWI has been producing results like these. So why haven't more people been talking about it? TWI was developed by the U.S. government during WWII to bring an inexperienced workforce up to speed quickly to replace "the boys" being sent overseas to fight.

After the war, TWI was largely forgotten in the U.S. Yet when it was introduced into Japan in the postwar reconstruction period, it took root, becoming one of the foundations Taiichi Ohno used to build the Toyota Production System.

Now that there's a drive to learn lean fundamentals, TWI has made a comeback. More than 40 trainers now deliver TWI courses in more than 16 states, and the movement continues to expand. Manufacturers today find TWI relevant to issues they face every day. Company leaders say:

"Our leads and supervisors love it because it's structured, simple and effective, and it just seems to make sense."

"TWI is the first training that has been accepted by all 60+ employees, and we see immediate results."

So what can this program, with its illustrious history, do to help those trying to implement lean and compete in today's global manufacturing environment? A heck of a lot!

The core of TWI's robust method of training was a precisely scripted training manual for each program, thoroughly tested in actual manufacturing plants. This meant each program could be delivered in standard and repeatable form, maintaining quality even when trainers had varying levels of experience.

The manuals still exist in almost original form. When trainers give the TWI courses in contemporary plants, they deliver the same instruction, using the same examples and nearly

the same wording as trainers used in the 1940s. The programs emphasize a learn-by-doing approach. Like their WWII forebears, participants bring in actual jobs from their worksites to practice on. TWI is centered on its J-programs: Job Instruction (JI), Job Methods (JM), and Job Relations (JR).

Job Instruction (JI)

The purpose of JI is to teach supervisors how to teach. The method emphasizes preparing the operator to learn -- giving a proper demonstration, breaking down the job into important steps and key points -- and observing the operator performing trial runs, tapering off coaching and continuing to follow-up.

Today, JI training allows manufacturing firms to, as one plant executive put it, "turn top employees into even better employees, average employees into top employees, and poor performing employees into good employees."

One company using JI was able to reduce training time from two months to two weeks. The training helped reduce rework by 96%, cycle time by 64% and inventory by 50%. JI achieved these numbers by "having all operators do jobs the same way."

Job Methods (JM)

JM helps supervisors make the best use of the manpower, machines, and material available. This allows the supervisor to amplify improvements without outside help from engineers or managers.

Job Methods teaches supervisors how to break down jobs into their constituent operations. Next it teaches them to question details to develop new methods by eliminating, combining, rearranging, and simplifying.

By using this method today, one company was able to save 800 man hours a year and reduce one department's cost by 32%.

Job Relations (JR)

The objective of JR is to help supervisors improve their ability to work with people. For a supervisor, results are all about the output of other people. Without their cooperation, work will not be carried out effectively. When this skill is acquired, supervisors get the cooperation they need.

Developing and maintaining good relations helps supervisors and employees solve and prevent problems. The JR principles include providing constructive feedback, giving credit when due, telling people in advance about changes that will affect them, making the best use of each person's ability, and earning the employee's loyalty and cooperation. The JR method teaches supervisors how to get the facts, weigh them carefully, make the decision, take action, and check results.

Participants in JR training from the manufacturing shop floor have been enthusiastic about its benefits:

"This would have been a perfect course when I started as a leader, 20 years ago! It is simple and based on a foundation of values. It will help build trust and understanding in the workforce."

"I learned how to supervise through the school of hard knocks. I wish I could have had this training 21 years ago. I wonder how many employees we've lost in that time due to poor supervisory skills."

Sustaining the improvement produced by lean tools has been tough for many companies. Toyota repeatedly says, "We don't just build cars, we also build people." TWI is one of the keys Toyota uses to develop people and a culture that sustains gains.

About the authors

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