

## **TWI Influence on TPS and Kaizen**

—An Interview with Mr. Isao Kato

by [Art Smalley](#)

*“You can not separate people development from production system development if you want to succeed in the long run” comments Mr. Kato. As the “father of standardized work and kaizen courses”, he insist that If people want to succeed with lean or TPS, they have to emphasize people development and making leaders capable of delivering improvements.*

*Isao “Ike” Kato spent 35 years with Toyota Motor Corporation in a variety of management positions in manufacturing, HR, training and development, and supplier development. Early in his career Ike was responsible for guiding external consultant Shigeo Shingo around Toyota facilities. Ike also worked extensively developing training material for TPS under the direction of Taiichi Ohno and other executives. Internally at Toyota Mr. Kato is known as the “father of standardized work and kaizen courses”. If you have ever taken a training class on either of these two topics odds are you were trained by someone that was trained by Mr. Kato or one of his disciples. He is also a master instructor of TWI (Training Within Industry) material. “You can not separate people development from production system development if you want to succeed in the long run” comments Mr. Kato.*

**Art:** Thank you for agreeing to spend some time together and answer some questions about TWI and its influence on Toyota.

**Mr. Kato:** My pleasure. Nice to speak with you again.

**Art:** How was TWI introduced to Toyota?

**Mr. Kato:** TWI was introduced to Japan after WWII around 1947-48 I believe. It was implemented in other companies outside of Toyota first. In 1950, during the near bankruptcy period, management and the union made a series of agreements. One agreement was for Toyota’s management to respond to the union’s request to create some form of supervisor development and training. The HR department of Toyota investigated existing programs and was introduced to TWI. Since it was an existing program and was receiving favorable reviews, it was evaluated and then adopted by Toyota.

**Art:** Which programs were introduced and in what order?

**Mr. Kato:** First Job Instruction (JI) was introduced in the December of 1951, then in succession Job Methods (JM) in June of 1952, and finally Job Relations (JR) in March of 1953. In each case about 300 people were trained in the methods and then more of course every year after that. JR was well received and remains almost in tact to this day as a training course. We eventually altered the case study examples in the material. JI was a big success and had the most impact of the three training courses by far. JI remains in Toyota today in a virtually unchanged fashion from the original.

**Art:** What are the main training courses for a supervisor today?

**Mr. Kato:** The stereotypical elements of supervisor training in Toyota today are still JI, JR, JS (Job Safety which Toyota developed) Standardized Work, Kaizen (sometimes these are combined as SW and Kaizen), Problem Solving, and the Role of a Supervisor. There are a couple others but these were the main ones we utilized.

**Art:** Which of the TWI courses had the biggest impact and why?

**Mr. Kato:** JI was by far the most valuable and unique among the three programs as it brought a great method for 1) breakdown the job, 2) creating a four step method for training others, and 3) developing a multi-functional skills planning matrix. The reason this is critical is because Mr. Ohno was already experimenting with multi-process handling (which require some standards for the job, a notion of takt time, and thus requires a way to teach others as takt time changes). Mr. Ohno embraced JI as a way to teach supervisors how to break down their jobs, create a job breakdown sheet, and train others. Of course the standardized work chart is needed on top of this job breakdown to balance the line to takt time and analyze it for improvement. However Mr. Ohno would scold people if they had not broken down the job properly and written it down on paper for either the sake of JI or standardized work. In a historical sense JI came at a critical juncture for Toyota as Mr. Ohno was now in a position between 1950 and 1955 to begin to roll out the learning points from the “Ohno line” to other areas in the company. The JI thinking is really critical and somewhat under-appreciated in TPS formulation. The capability to break down a job is fundamental in terms of helping create a standard for teaching and training others. It is a much easier and smaller step then to create the three elements of Standardized Work (takt time, work sequence, and standard amounts of work-in-process) after JI is in place. Plus when you change takt time and move work around JI is the perfect vehicle to train people. For this reason I believe and I think that Mr. Ohno would agree that JI had by far the biggest impact on TPS formulation.

**Art:** What is more important JI or Standardized Work

**Mr. Kato:** It is not really a question of importance; it is a question of sequence. I don't think you can do a good job of implementing standardized work or several other elements of TPS without the JI skill set in place. I have observed quite a few companies struggle with implementing standardized work, kaizen, and other items. Often the short term gains companies obtain fall away over time. One direct reason why is that no proper plan was ever put in place to train people to the new method and the JI technique provides the exact skill set required to do this work. I can't see how standardized work can function without JI in place underneath to support it in the long run.

If you do JI properly you can eliminate so many problems that plague operations. You can stabilize the operation, improve productivity, enhance quality, and establish the fundamental elements of the job on paper for analysis. Then it is a much smaller step to next balance the line to takt time and to add the other elements of standardized work. This was the order at least in Toyota that we taught and had success with.

**Art:** Some have called TWI the roots of Lean – do you agree?

**Mr. Kato:** TWI had significant influence on the development of our thinking and way we structured supervisor training. It is underappreciated from that point of view. However, it is not the overall roots of Lean or TPS. TWI simply did not contain most of what makes up the unique and important aspects of TPS; seven wastes, takt time, flow production, pull system, kanban, leveling, Jidoka, 5S, etc. It did give us a vehicle to enhance supervisor skill sets and it influenced the development of the Kaizen training course however that is certain.

**Art:** Why in your opinion is TWI critical?

**Mr. Kato:** It helps build capability into the organization at the supervisor level which is very critical for TPS to succeed. TPS won't flourish if just the staff and engineers are driving it from the side. The first line of supervision is critical in making small daily improvements, leading the work teams, and making the whole system stick together. In Toyota we had a saying, “mono zukuri wa hito zukuri” which means “making things is about making people”. If people want to succeed with lean or TPS they have to emphasize people development and making leaders capable of delivering improvements. TWI is a great starting point even today and a hidden strength of Toyota's production system.

(from [Art of Lean](#))