

Introduction to TWI

How the Training Within Industry (TWI) training engages people in their work and ultimately becomes a Competitive Advantage

FMA Management Training Seminar

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Facing Unprecedented Business Challenges

Understanding the Current State

Most companies are facing Unprecedented Business Challenges like:

- Post COVID Pandemic norm's
- War
- Inflation
- Geopolitical Instability
- Supply Chain Disruption
- Energy Crisis
- Employee Turnover
- Employee's Disengaged or Quitting
- Changes in way of working:
 - Hybrid
 - Remote

Facing Unprecedented Business Challenges

History Repeating Itself

1940's

- Unprecedented challenges were also being faced:
 - Global Economic Crisis following Great Depression
 - War
 - shortage of skilled manpower, ...

In both cases, then and now, the need for developing and empowering the human potential exists. TWI Programs helped companies then and again now to meet this need.

The difference with the past is that now we have access to multiple technological resources that support us in and accelerate the improvement process.

Facing Unprecedented Business Challenges

Overarching Focus of the Session

Establishing New Target Conditions

- Understanding the true meaning of “*Respect for People*” in business and society and how it is a competitive advantage
- Accelerating the learning cycles as we share best practices from leading Global Organizations
- Embrace technology advancements in communication and working conditions to build the workforce of tomorrow

What is Training Within Industry (TWI)?

- Training Within Industry (TWI) is a dynamic and proven method of hands-on training, learning and coaching for **supervisors, team leaders**, and workers.
- TWI was introduced in 1940 by the United States Department of War and operated within the War Manpower Commission until 1945. It was originally developed to meet the high demand for wartime materials from a smaller and less-experienced workforce.
- Today, training within industry remains relevant because of its unique methodology that empowers the frontline.
- TWI training is practical and fundamental; its benefits transcend time, place and situation.

TWI: The Roots and History

June 22, 1940

TWI was one of the first emergency service established by the U.S. Department of War Manpower Commission Planning Board:

“...to help industry to help itself to get out more materials than have ever been thought possible, and at constantly accelerating speed”



“The real job had to be done *by* industry, *within* industry.”

The Scope of TWI



The Results of TWI

- When TWI operating service ended September 30, 1945, the following certification totals appeared:

• Job Instruction	1,005,170
• Job Methods	244,773
• Job Relations	490,022
• Union Job Relations	8,856
• Program Development	<u>1,829</u>
• Total	1,750,650
- These people were trained in 16,511 plants and unions, in every kind and size of war industry and essential service...

1945 - Mission Accomplished!

Of the 600 client companies monitored by the TWI Service throughout the war:

- 86% increased production by at least 25%
- 100% reduced training time by 25% or more
- 88% reduced labor-hours by over 25%
- 55% reduced scrap by at least 25%
- 100% reduced grievances by more than 25%



Why TWI was Abandoned in 1945



- US industry viewed TWI as being a war program.
- Servicemen returned home
- Quick shift to the Mass Production of consumer goods.

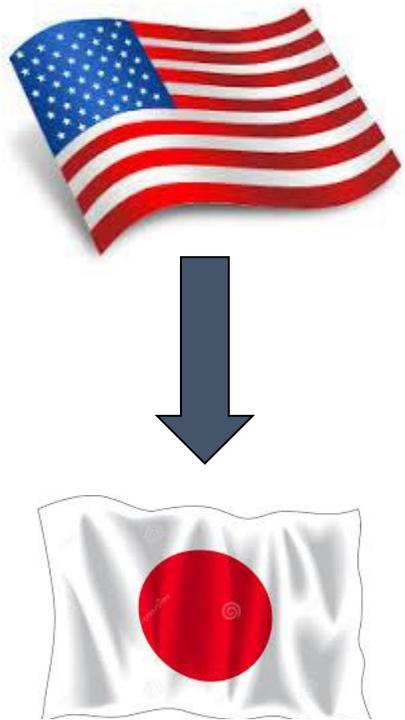


We Did It!



TWI Goes To Japan

How TWI Ended up in Japan



- US Occupational Government introduced TWI along with quality methods (Deming and Juran) in Japan to quickly rebuild their industrial base as a deterrent to the spread of Communism.
- Japanese industry, eager to learn from the industrial base that had defeated them, quickly made TWI a staple of their industrial training keeping the training alive to this day.
- Toyota embraced TWI in 1951 to train their people in the evolving Toyota Production System where JI remains as a cornerstone of their team leader training and standard work.

TWI Helps Ono Find Standardized Work

- Toyota leaders were always scrambling to make month end production targets
- Ono recognized the need to maintain takt time
- He **tried to create standardized work** to stabilize output, but **operators would not share their techniques**



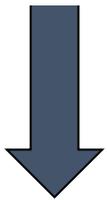
Toyota Motor Plant in 1950s

Toyota Production System – Built on Standardized Work

- Then, workers went on strike which is when Toyota sought out and began TWI training
- *For the first time, they were able to write down standard work processes and make them a reality*



How TWI Came Back to the US



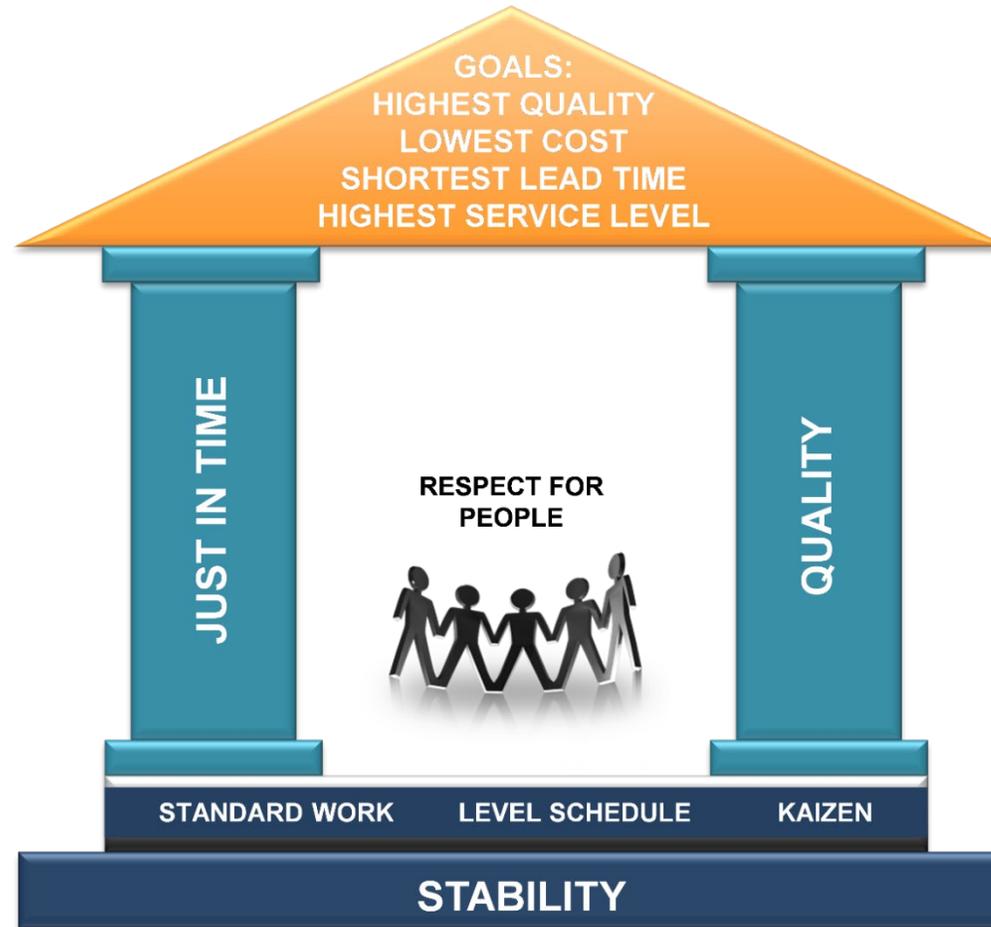
- **1951** – Kenji Ogawa is one of the original TWI Master Trainers taught and certified by the TWI, Inc. American trainers in Japan
- **1960** - Mr. Ogawa trains Kazuhiko Shibuya for SANYO Electric Corporation
- **1980** – Mr. Shibuya, Manager Overseas Training trains newly hired American Patrick Graupp
- **2002** – Patrick Graupp leaves Sanyo to partner with the TWI Institute to resurrect TWI in the U.S.
- **2026** – The TWI Institute has trained over 4,000 certified trainers for companies around the globe

Tools, System or Culture?

*Most companies have focused too heavily on tools...
Without understanding Lean as an entire System that
must permeate an Organization's Culture*

-The Toyota Way, Jeffery Liker, 2003

Foundational Elements of Lean



Foundational Elements of Lean



Why TWI, What is the Need?

- Shingo researched Lean (Continuous Improvement) programs
... at least 85% of all Lean Projects fail in the initial implementation...



- Lacking **Work Standards**
- Insufficient **Respect & Trust** to and from employees
- Focused on **Tools & Methods**, not enough on employees

Toyota: since 1951 TWI-methods are fundamental in talent development!

TWI: The “J” Programs

Five Basic Needs of a Supervisor

Knowledge

Unique to the Company and/or the Industry that supervisors must know to do their job:

1. Knowledge of the Work
2. Knowledge of Responsibilities

Knowledge training is the responsibility of each company and therefore not the focus of TWI.

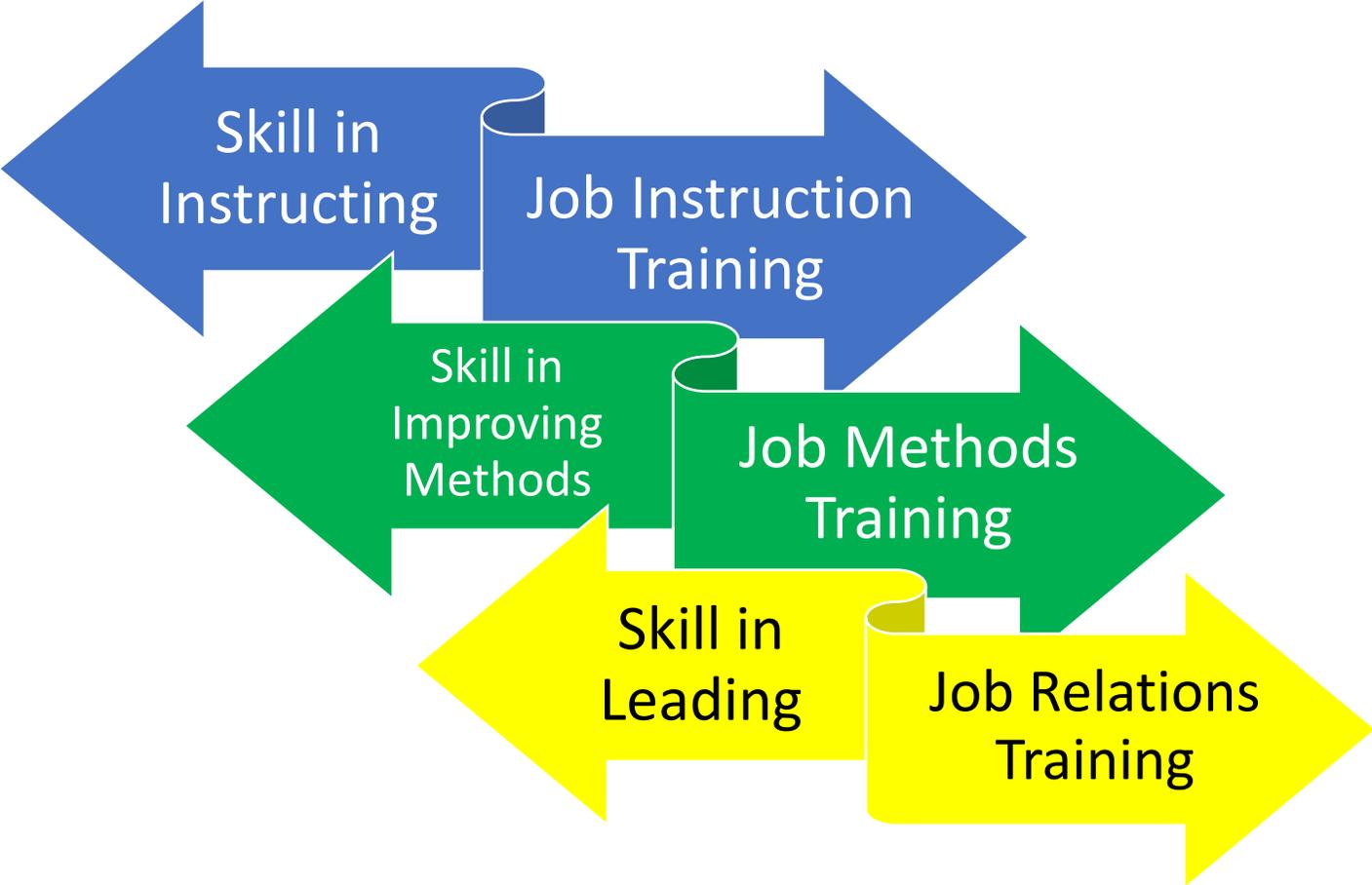
Five Basic Needs of a Supervisor

Skills

Supervisors need to perform within their role, regardless of the industry:

3. Skill in Instruction
4. Skill in Leading
5. Skill in Improving Methods

Three Essential Skills



Standardized **Delivery**

Each Program has a 4-Step Method *

- 1. Preparation (Plan)**
Helps the learner comprehend the new idea
- 2. Presentation (Do)**
Adds the new idea to the learner's mind
- 3. Application (Check)**
Trains the learner to apply the idea and check results
- 4. Testing (Act)**
Tests the ability of the learner to apply the new idea

* *The Instructor, the Man, and the Job*, Charles R. Allen, J. B. Lippincott Company 1919



Standardized **Delivery**

- Each method is stated in shop terms
- Scheduling of five 2-hour meetings to keep the subject fresh and not keep people away from their jobs over long periods of time
- Small groups of 10 people
- Each participant must demonstrate in class that they know how to use the method

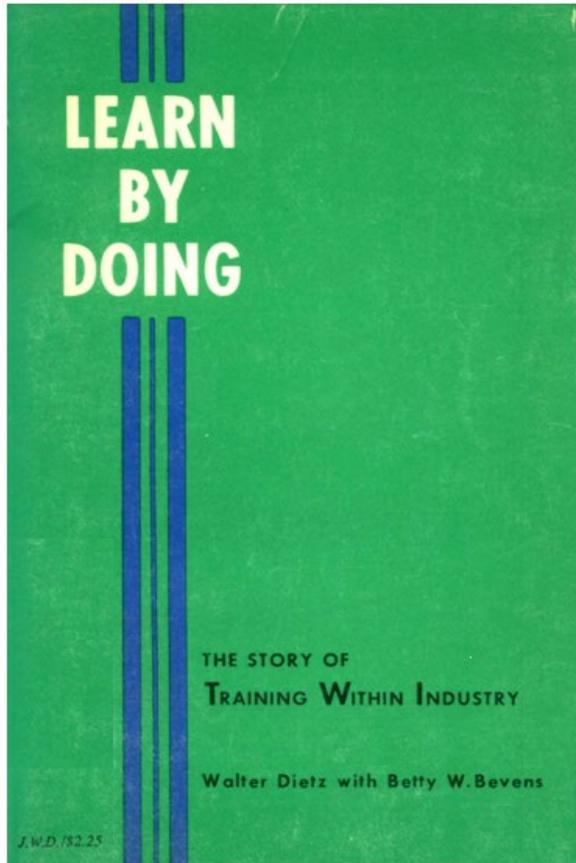


Art Smalley Advisory

- “..the natural inclination is for people to take these materials and cut them down into one or two day sessions and alter the material as they see fit. I don’t know of any company that has trimmed down the material or eliminated sections and succeeded in obtaining any results in implementation.”
- “Toyota has kept the five day by two hour patterns of instruction and follow up intact with great success. Frankly I don’t know why anyone would think they are smarter than Toyota or the original designers of the (TWI) material...”

www.artoflean.com March 2013

“Learn by Doing”



The TWI approach is not about schools, classes or lessons –

TWI is about individual and/or group work on *current day problems* related to Quality, Cost, Delivery, Morale & Safety

TWI Role In achieving a More productive **Workforce**

- **Typical workplace training activities**
 - Learning from mistakes / trial & error
 - Self-managed observation
 - Job Shadowing - “Buddy System”
- **TWI is a broader concept and unlike traditional training**
 - Is **people centric** and **focused on skills** development
 - It considers the characteristics of the individual, and the team
 - The importance of a **learning environment** and a **culture of collaboration**
 - Drives a focus on **stabilizing, standardizing** then **improvement.**

TWI: The “JI” Program

Job Instruction **Training (JI)**

How to teach people to quickly learn to do a job correctly, safely, and conscientiously.

In Japanese, “The WAY to Teach Jobs”
仕事の教え方 = *Shigoto no Oshie-KATA*

How to achieve work standards? TWI Job instruction

Job Instruction

Quickly training employees to do a job correctly, safely, and conscientiously

- Job Instruction is designed to develop basic stability of your processes (standard work). This program teaches the method to instruct a person how to perform a job correctly, safely and conscientiously.
 - **Train & motivate people to understand and follow the Standard**
- As is frequently the case, most processes are performed by various workers using different methods.
- Job Instruction requires you identify the “**One Best Way**”, teach the process to this one way, and thereby create a standard method.

JI Worker Issues Addressed

- Don't know how
- Can't do well or consistently
- Not enough

JI Benefits

- Increased confidence in work
- Decrease in injuries
- Decrease in defects/rework
- Decrease in training time
- Increase productivity

JOB INSTRUCTION BREAKDOWN SHEET

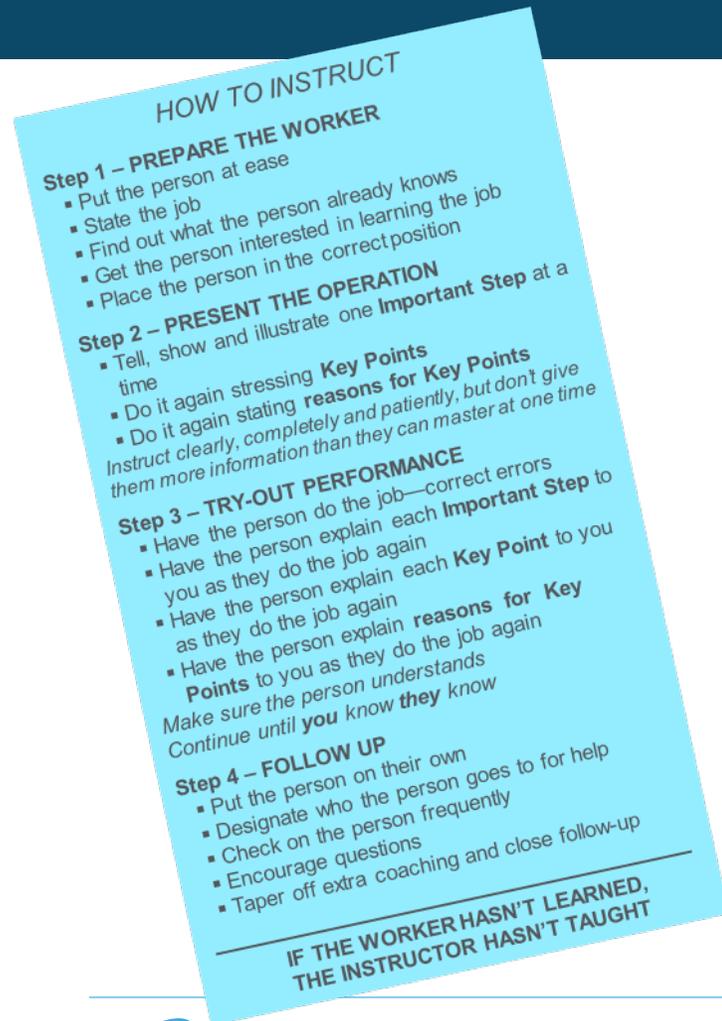
Operation: _____

Parts: _____

Tools & Materials: _____

IMPORTANT STEPS <i>What</i>	KEY POINTS <i>How</i>	REASONS <i>Why</i>
A logical segment of the operation when something happens to advance the work	Anything that might— 1. Make or break the job 2. Injure the worker 3. Make the work easier to do, i.e. “knack”, “trick”, special timing, bit of special information	Reasons for key points
<i>Not a micro-motion study of the job.</i>	<i>The 5 or 10% of a job that represent the hard or tricky parts.</i>	<i>People learn better when they know why they do it that way.</i>

Job Instruction 4-Step Method



Step 1 - Prepare the Worker

Get the person interested in learning the job

Step 2 - Present the Operation

Don't give them more information than they can master at one time

Step 3 - Try-out Performance

*Continue until **you** know **they** know*

Step 4 - Follow-up

Check on the person frequently and encourage questions

“If the worker hasn't learned, the instructor hasn't taught.”

JI = structured On the Job Training - OJT

No. _____

JOB INSTRUCTION BREAKDOWN SHEET

Operation: Glost Kiln Operator Cycle

Parts: None

Tools & Materials: Kiln Gloves

IMPORTANT STEPS	KEY POINTS	REASONS
A logical segment of the operation when something happens to advance the work.	Anything in a step that might— 1. Make or break the job 2. Injure the worker 3. Make the work easier to do, i.e. "knack", "trick", special timing, bit of special information	Reasons for the key points
1. Discharge GK #3	1. Use kiln gloves 2. Pull at correct time	1. Burn hazard 2. Kiln control
2. Charge GK #3	1. Fix downed ware 2. Do not slam transfer	1. Defect prevention 2. Defect prevention
3. Record car data		
4. Check kiln temperatures	1. Call Ceramic Tech if 50°F delta in zones	1. Proper kiln control
5. Charge GK #3	1. Fix downed ware 2. Do not slam transfer	1. Defect prevention 2. Defect prevention
6. Discharge GK #3	1. Use kiln gloves 2. Pull at correct time	1. Burn hazard 2. Kiln control
7. Record car data		
8. Check kiln temperatures	1. Call Ceramic Tech if 50°F delta in zones	1. Proper kiln control



HOW TO INSTRUCT

Step 1 – PREPARE THE WORKER

- Put the person at ease
- State the job
- Find out what the person already knows
- Get the person interested in learning the job
- Place the person in the correct position

Step 2 – PRESENT THE OPERATION

- Tell, show and illustrate one **Important Step** at a time
 - Do it again stressing **Key Points**
 - Do it again stating **reasons for Key Points**
- Instruct clearly, completely and patiently, but don't give them more information than they can master at one time*

Step 3 – TRY-OUT PERFORMANCE

- Have the person do the job—correct errors
 - Have the person explain each **Important Step** to you as they do the job again
 - Have the person explain each **Key Point** to you as they do the job again
 - Have the person explain **reasons for Key Points** to you as they do the job again
- Make sure the person understands
Continue until **you** know **they** know*

Step 4 – FOLLOW UP

- Put the person on their own
- Designate who the person goes to for help
- Check on the person frequently
- Encourage questions
- Taper off extra coaching and close follow-up

**IF THE WORKER HASN'T LEARNED,
THE INSTRUCTOR HASN'T TAUGHT**

Employee engagement clinches the deal

Focus on Human Capital

As advanced technology and the impact of Lean activities continues to reduce or eliminate operational sources of competitive advantage, companies are *shifting focus on human capital* as an avenue to *competitive advantage* that is difficult to imitate.

Source: Employee Engagement, William H. Lacey, Benjamin Schneider, Karen M. Barbera, and Scott A. Young, Wiley-Blackwell, 2009



People as a Core Competency

At least three tests can be applied to identify core competencies in a company:

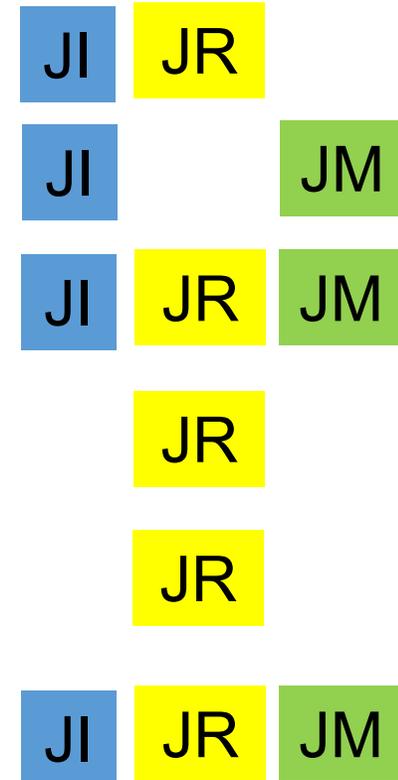
1. Provides potential access to other markets
2. Makes a significant contribution to the perceived customer benefits of the product
3. It is not easy for competition to imitate. *"And it will be difficult if it is a complex harmonization of individual technologies and production skills."*

Source: *The Core Competence of the Corporation*, C. K. Prahalad and Gary Hamel, Harvard Business Review, May-June 1990, page 83

How TWI Supports “Everyday Engagement”

Gallup’s Employee Engagement Survey

1. I know what is expected of me at work.
2. I have the materials and equipment I need to do my work right.
3. At work, I have the opportunity to do what I do best every day.
4. In the last seven days, I have received recognition or praise for doing good work.
5. My supervisor, or someone at work, seems to care about me as a person.
6. There is someone at work who encourages my development.



How TWI Supports “Everyday Engagement”

7. At work, my opinions seem to count.

JR JM

8. The mission or purpose of my company makes me feel my job is important.

JI JR JM

9. My associates or fellow employees are committed to doing quality work.

JI JM

10. I have a best friend at work.

JR

11. In the last six months, someone at work has talked to me about my progress.

JI JR

12. This last year, I have had opportunities at work to learn and grow.

JI JR JM

15 Human Relations Issues that Impact Employee Morale (survey of 25K people)

1. Showing employees appreciation for the work they've done
2. Communicating information and directions
3. Listening to ideas and concerns
4. Treating all employees fairly
5. Treating everyone with dignity and respect
6. Being sensitive to personal problems
7. Handling corrective action in a tactful manner
8. Job security
9. Good wages
10. Good fringe benefits
11. Opportunities for promotion and growth within the organization
12. Good working conditions
13. Providing a safe work environment
14. Adequate job/technical training
15. Permitting participation in decision making

Tackling Workforce Discontent

Reasons people leave organizations today

- Relationships with their Boss
- Bored and Unchallenged by the Work Itself
- Lack of skills development
- Lack of personal growth

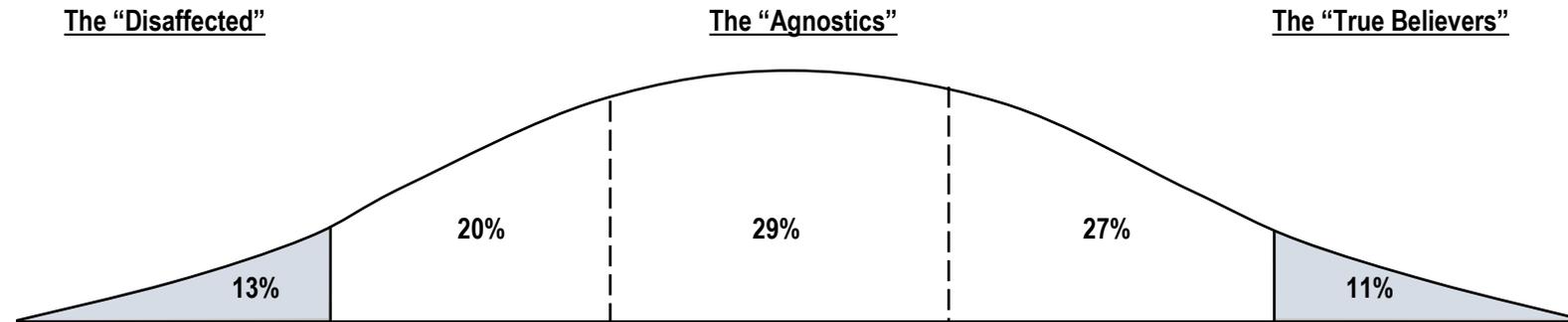
<https://www.thebalance.com/top-reasons-why-employees-quit-their-job-1918985>

Tackling Workforce Discontent

Approximately 13% of the overall workforce is highly uncommitted...

...76% are “up for grabs,” neither fully committed or uncommitted...

...and the remaining 11% are highly committed



Characteristics

- Exhibit very weak emotional or rational commitment to day-to-day work, the manager, the team, and the organization

- Poorer performers who frequently put in minimal effort

- Four times more likely to leave the organization than the average employee

- Nine times more likely to leave the organization than the “true believers”

Characteristics

- Exhibit strong emotional or rational commitment to one focus, but only moderate commitment to remaining foci

- Employees neither go to great lengths in their jobs, nor do they shirk their work

- Significant variation in intent to stay

Characteristics

- Exhibit very strong emotional and rational commitment to day-to-day work, the manager, the team, and the organization

- Higher performers who frequently help others with heavy workloads, volunteer for other duties, and are constantly looking for ways to do their jobs better

- Half as likely to leave the organization as the average employee

- Nine times more likely to stay with the organization as the “disaffected”

What's In It For Me?

The right work environment allows employees to find meaning in their work and to accelerate their career development

1. Engaged employees find meaning in their work
2. Engaged employees improve the work environment
3. Engaged employees feel better at work
4. Engaged employees advance faster in their careers

Engaged employees enhance company performance because they enjoy and are committed to their work

TWI in the 21st Century



+



A Strategic Partnership for Frontline Workforce Training & Development

Providing a scalable framework for frontline digital transformation in your organization.

We Are in the Middle of Both a Workforce Shift...

An Aging Workforce

27%

of manufacturing workers are retiring in
this coming decade

The Manufacturing Institute

High Turnover

37%

the annual labor turnover rate for
manufacturing workers

U.S. Bureau of Labor

Difficulty Recruiting

54%

of leaders report manufacturing
perceptions negatively impact the
ability to recruit workers

UKG Workforce Institute

...And a Generational Shift in Work Methods



Manual Processes

Relied heavily on manual labor and paper-based systems, with workers performing repetitive tasks.

Automation Integration

The rise of automated machinery and systems, but workforce development and knowledge management lagged behind.

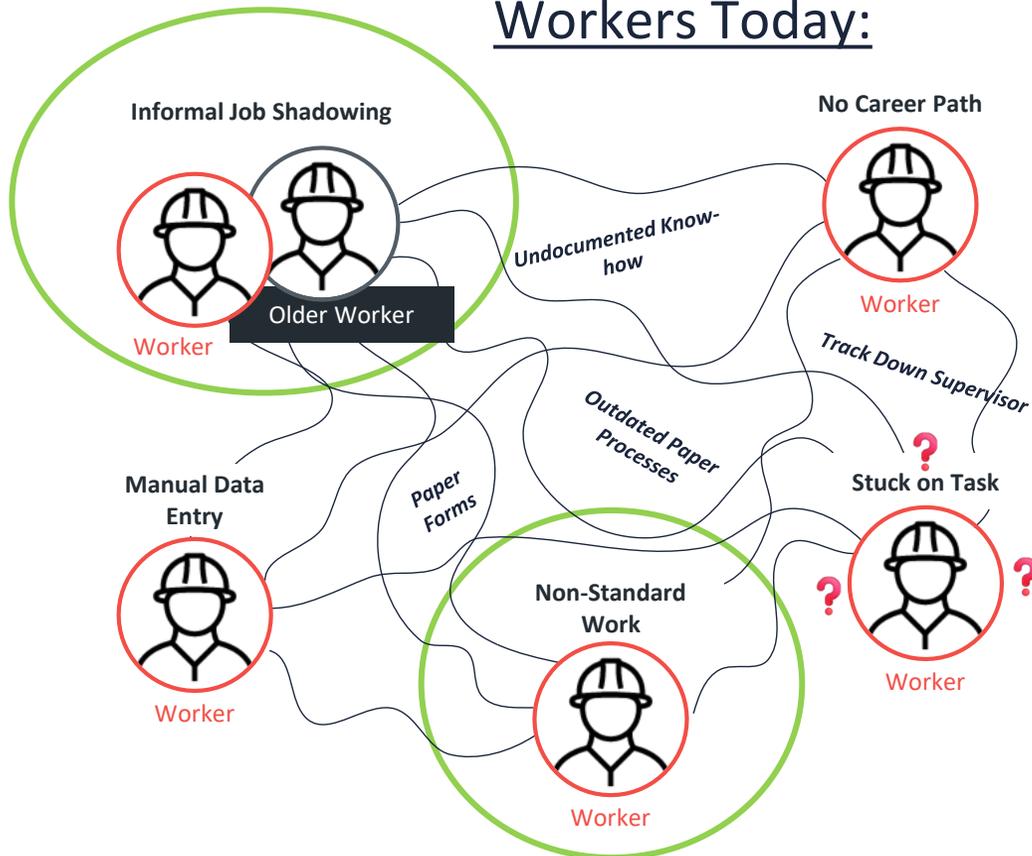
Workforce Digitization

Supporting continuous learning, collaboration, and data-driven decision making through digital solutions.

To Solve It, We Need a New Way of Thinking



Workers Today:



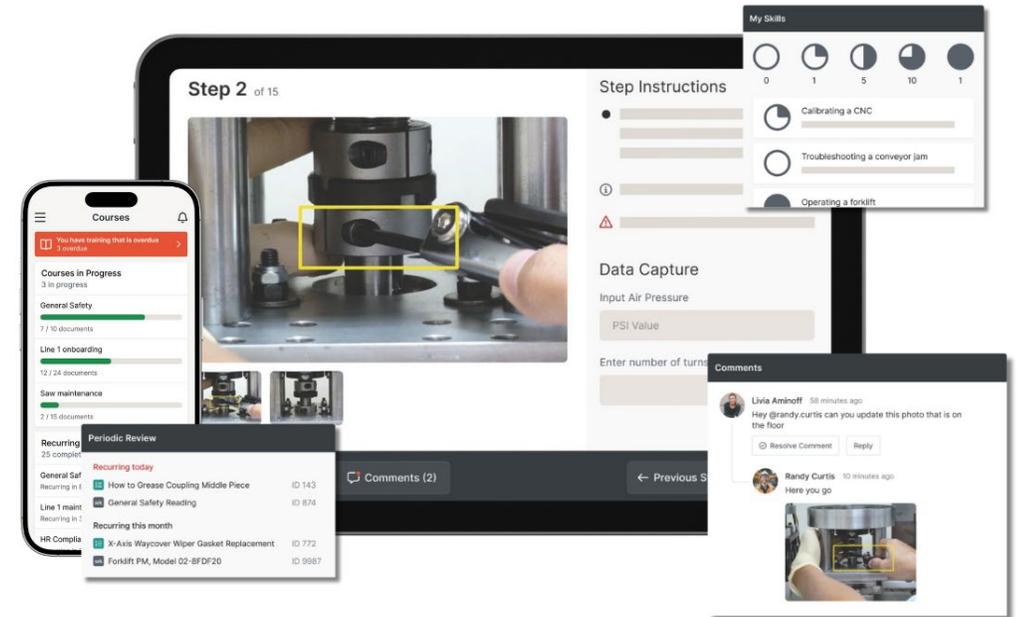
VS.

Workers of the Future:



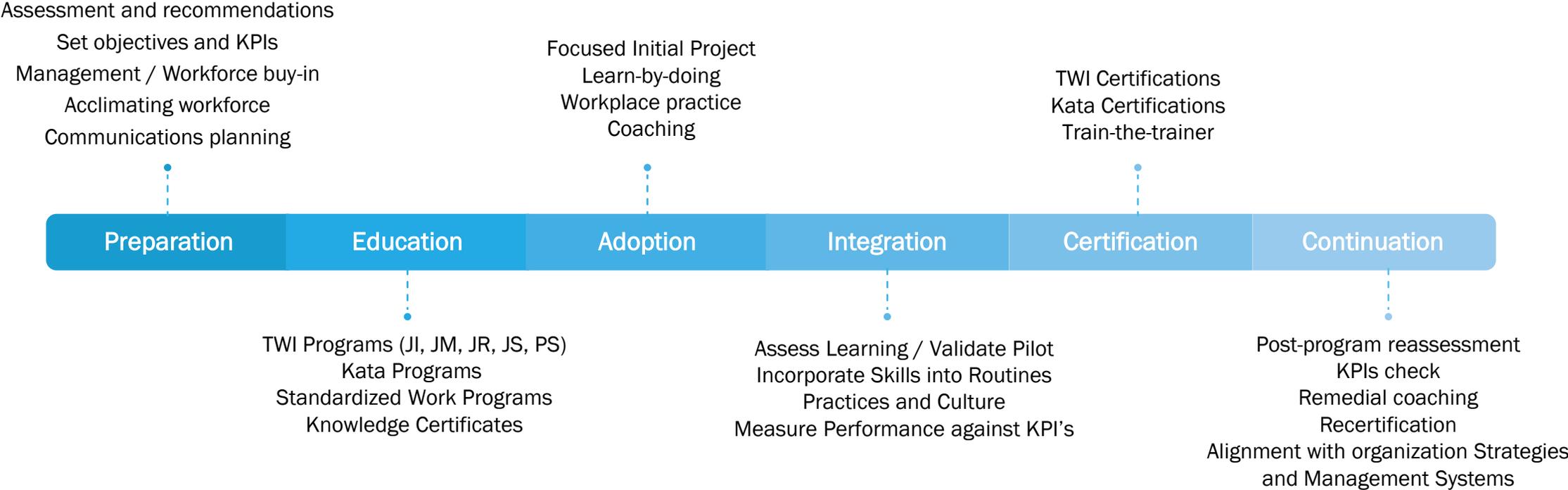
Dozuki & TWI

Dozuki and TWI deliver a proven methodology and digital platform that transforms operational knowledge into clear, standardized instructions. Complex processes are broken down into simple, trainable tasks that are easy to learn, follow, and repeat—ensuring consistency across every job.

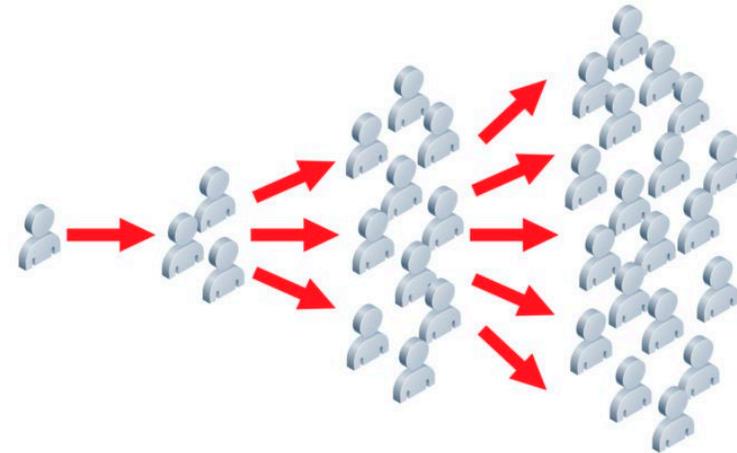
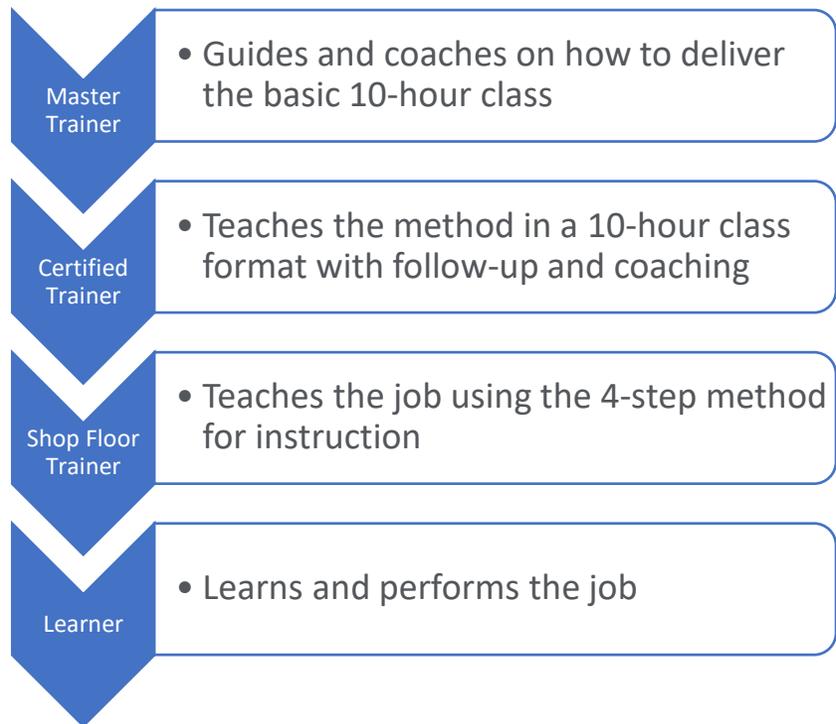


TWI Institute Implementation Approach

End-To-End Solutions Leave Nothing To **Chance**



How to Skill Up Quickly and Effectively



The Multiplier Effect

Develop Company Trainers: **Train the Trainer**



- Internalize TWI training to move TWI forward
- Push the TWI training down in the workplace
- Provide JIB follow-up training
- Audit the training process
- Provide ongoing coaching to sustain use of the new method

Real ROI from our Customers

Quantifiable impact – topline, bottom line, valuation

+83%

Quality Over
3 Years



Pharma

+18%

Productivity



Manufacturing

-57%

In Scrap



Medtronic

Medical Device

-75%

Training Time



Manufacturing

-75%

Reduction In
Turnover



Pharma

The TWI Institute

- We optimize **human potential** in the workplace.
- Through consulting and training in TWI, Kata and Standardized Work, TWI Institute generates results and value in the workplace by advancing the skills, contributions and self-respect of the workers.
- **We help people** realize their potential in a way that achieves sustainable results.
- **We value and respect every person's ability and capability.** We know that inside everyone is the desire to do better and to be better. Developing and nurturing that desire unlocks potential and transforms ability and capability into achievement and self-satisfaction
- We are a people business that coaches and trains. As such, we see our role as **enabling that transformation** and elevating the effect of frontline people on the success of their organizations, in their communities and in their lives



Benchmarking with Toyota

“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.**”



Source: “Why in your opinion is TWI critical?” Summary Notes from Art Smalley Interview with Mr. Isao Kato, TWI Influence on TPS & Kaizen, Feb. 8, 2006, www.ArtofLean.com