

Training Within Industry (TWI)

Introduction

*Key Leadership and Problem Solving Skills for
Developing Talent, Driving Continuous Improvement,
and Sustaining Excellence*

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History of Training Within Industry (TWI):

- One of the first emergency services established during WWII (early 1940's).
- Purpose: "Help industry to help itself to get out more materials than have ever been thought possible, and at constantly accelerating speed" to win the war.
- Millions of Americans trained over five year period.
- It formed a basis of Toyota's core training and development of the Toyota Production System. Toyota still uses much of it to this day.



1945 - Mission Accomplished!

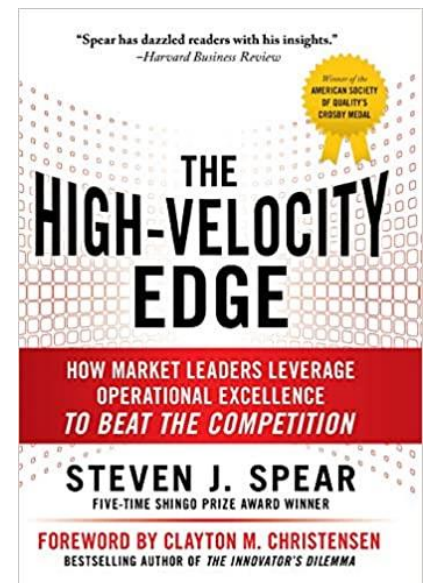
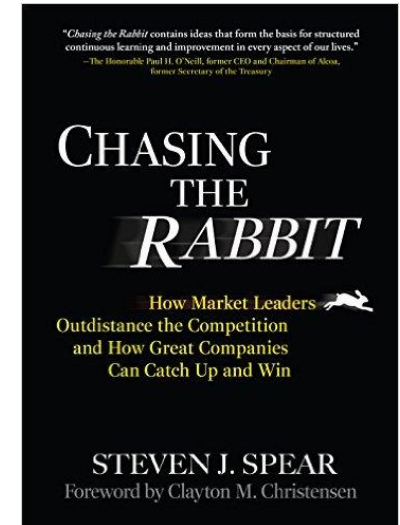
86%	increased production by at least 25%
100%	reduced training time by 25% or more
88%	reduced labor-hours by over 25%
55%	reduced scrap by at least 25%
100%	reduced grievances by more than 25%

Why Important Today?

“What makes organizations high-velocity is the way they deliberately and consistently make the best use of the ordinary distribution of human talent, while their competitors let so much of it be ground between the wheels of repetitive frustration, firefighting, and failure.”

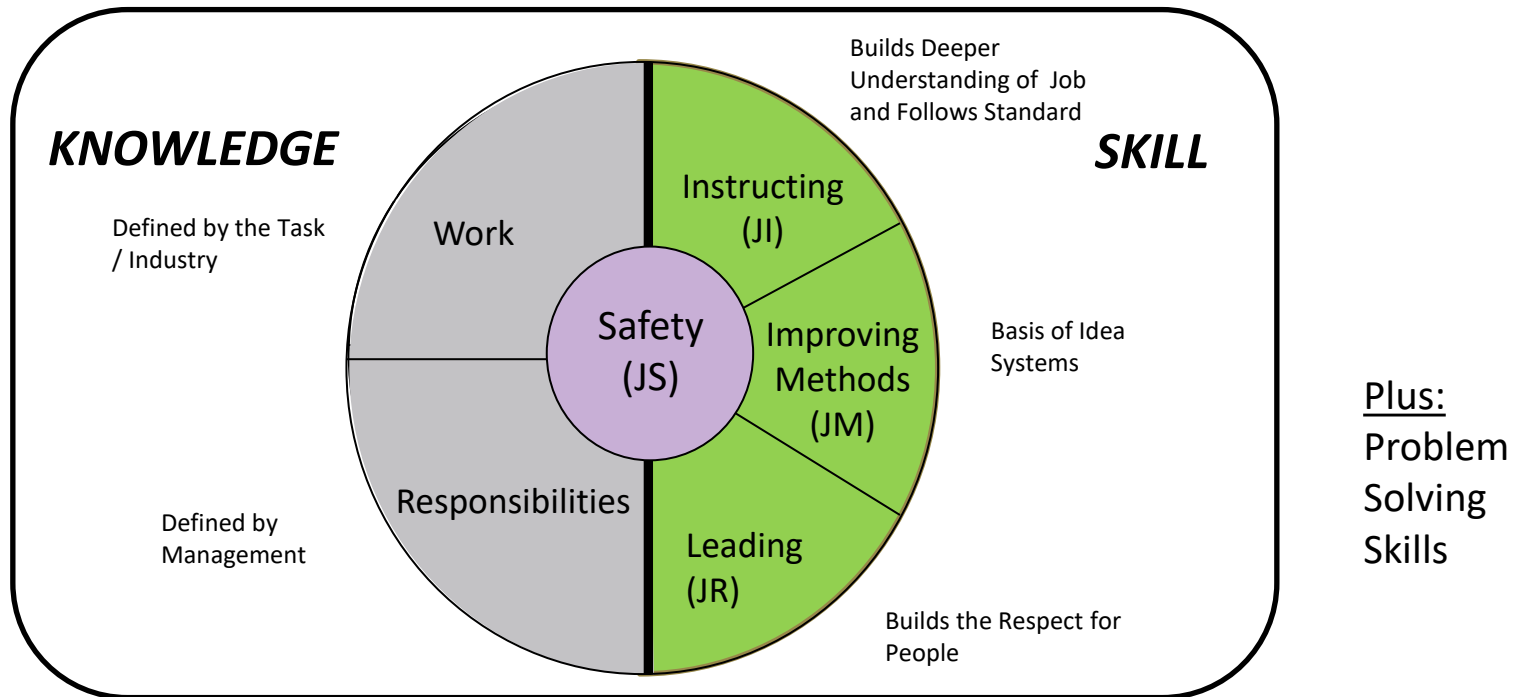


Day Goes Smooth!



What Is Training Within Industry (TWI)?

“Five Basic Needs of a Supervisor”



TWI provides leaders with the skills required to develop employee talent and maximize the engagement of all employees within the organization.

TWI Job Instruction (JI):

TWI Pocket Cards



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**

JOB INSTRUCTION

HOW TO GET READY TO INSTRUCT

Before instructing people how to do a job:

1. MAKE A TIME TABLE FOR TRAINING

Who to train ...
For which work ...
By what date ...

2. BREAK DOWN THE JOB

List **Important Steps**
Select **Key Points**
Safety factors are always Key Points

3. GET EVERYTHING READY

The proper equipment, tools, materials
and whatever needed to aid instruction

4. ARRANGE THE WORKSITE

Neatly, as in actual working conditions



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Job Instruction

II

The way to get A person to
quickly remember to do A job

Correctly

Safely

Conscientiously

TWI Job Relations (JR):

HOW TO HANDLE A PROBLEM

DETERMINE OBJECTIVE

STEP 1 – GET THE FACTS

- Review the record
- Find out what rules and customs apply
- Talk with individuals concerned
- Get opinions and feelings

Be sure you have the whole story

STEP 2 – WEIGH AND DECIDE

- Fit the facts together
- Consider their bearings on each other
- What possible actions are there?
- Check practices and policies
- Consider objective and effect on individual, group and production

Don't jump to conclusions

STEP 3 – TAKE ACTION

- Are you going to handle this yourself?
- Do you need help in handling?
- Should you refer this to your supervisor?
- Watch the timing of your action

Don't pass the buck

STEP 4 – CHECK RESULTS

- How soon will you follow up?
- How often will you need to check?
- Watch for changes in output, attitudes, and relationships

Did your action help production?

DID YOU ACCOMPLISH YOUR OBJECTIVE?

JOB RELATIONS

A SUPERVISOR GETS RESULTS THROUGH
PEOPLE

FOUNDATIONS FOR GOOD RELATIONS

Let Each Worker Know How He/She is Doing

Figure out what you expect of the person
Point out ways to improve

Give Credit When Due

Look for extra or unusual performance
Tell the person while it's "hot"

Tell People in Advance About Changes that Will Affect Them

Tell them why if possible
Work with them to accept the change

Make Best Use of Each Person's Ability

Look for abilities not now being used
Never stand in a person's way

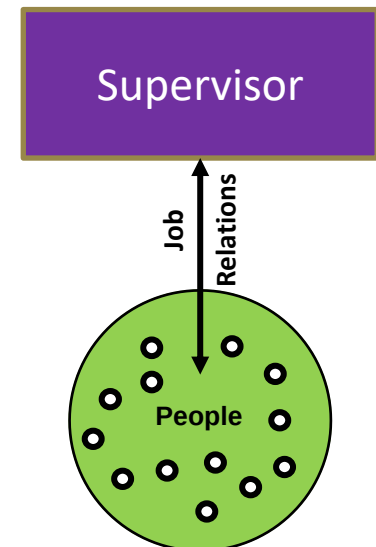
PEOPLE MUST BE TREATED
AS INDIVIDUALS



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Teaches how to build positive employee relations, increase cooperation and motivation; effectively resolve and prevent people problems.



TWI Job Methods (JM):

HOW TO IMPROVE JOB METHODS

A practical plan to help you produce *greater quantities of quality products in less time* by making the **best use** of the **Manpower, Machines and Materials now available**.

STEP 1 – BREAK DOWN THE JOB

1. List **all** details of the job **exactly** as done in the **Current Method**.
2. Be sure details include everything:
 - Material Handling
 - Machine Work
 - Hand Work

STEP 2 – QUESTION EVERY DETAIL

1. Use these types of questions:
 - WHY** is it necessary?
 - WHAT** is its purpose?
 - WHERE** should it be done?
 - WHEN** should it be done?
 - WHO** is best qualified to do it?
 - HOW** is the 'best way' to do it?
2. Question the following at the same time:
Materials, Machines, Equipment, Tools, Product Design, Workplace Layout, Movement, Safety, Housekeeping



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STEP 3 – DEVELOP THE NEW METHOD

1. **ELIMINATE** unnecessary details
2. **COMBINE** details when practical
3. **REARRANGE** details for better sequence
4. **SIMPLIFY** all necessary details
 - To make the job easier and safer to do:
 - Put materials, tools and equipment into the **best position** and **within convenient reach** for the operator
 - Use **gravity feed hoppers** or **drop delivery chutes** whenever possible
 - Make effective use of **both hands**
 - Use **jigs or fixtures** instead of hands
5. Work out your ideas **WITH OTHERS**
6. **WRITE UP** the proposed new method

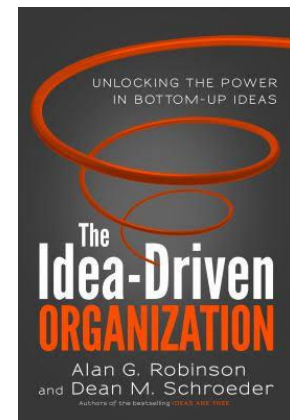
STEP 4 – APPLY THE NEW METHOD

1. **SELL** your proposal to the boss
2. **SELL** the new method to the *operators*
3. Get **FINAL APPROVAL** of all concerned on Safety, Quality, Quantity, Cost, etc.
4. **PUT** the new method **TO WORK**. Use it until a **better** way is developed.
5. Give **CREDIT** where credit is due

Relationship Between Step 2 and Step 3

Step 2 – Question		Step 3 – Develop
Why? What?	} →	Eliminate
Where? When? Who?	} →	Combine Rearrange
How?	→	Simplify

Teaches how to analyze
and improve the way jobs
are done by making the
best use of the people,
machines, and materials
now available.



TWI Job Safety (JS):

JOB SAFETY

The meaning of safety is to consider measures and take action **before** a safety incident occurs. It is **NOT** to handle the aftermath.

STEP 1 – SPOT THE CAUSES OF DANGER

- Check the situation, check the record, talk to people
- Consider both things and people
- Check regulations and standards
- Always be aware
- Foresee risks of incidents and injuries

Dig down deep

STEP 2 – DECIDE ON COUNTERMEASURES

- Fit the causes together, consider their bearings on each other
- Ask people who have detailed knowledge
- Think of several countermeasures
- Make sure of accordance with policies, regulations, standards
- Decide on back-up measures, too

Are you yourself the cause?

STEP 3 – ENFORCE COUNTERMEASURES

- Can you handle this yourself?
- Do you need support from your supervisor?
- Whose cooperation should you get?

Put into effect immediately

STEP 4 – CHECK RESULTS

- Check again and again
- Was it carried out for certain?
- Were the causes eliminated?

Have any new causes arisen?

**SAFETY INCIDENTS ARE CAUSED
BREAK THE CHAIN**

THINGS:

- Parts and Materials
- Facilities, Machines and Tools
- Work Methods and Layout
- Dangerous and Harmful Articles
- Environment
 - State
 - Placement
 - Usage

PEOPLE:

- Capabilities
- Mental and Physical State
- Work Attitudes and Methods
- Use of Personal Protective Equipment (PPE)
- Handling of Tools
- Human Relations
 - Doesn't Know
 - Cannot Do
 - Doesn't Care
 - Doesn't Do

CONTACT:

- How about timing?

ENVIRONMENT:

- Proper Housekeeping
- Scrupulous Inspection and Maintenance
- Standard Operating Procedures

A perfect safety record is not a record of fate; it is a record of our efforts as supervisors

**RESPECT FOR
PEOPLE**

**STUDY OF
THE CAUSE**



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Teaches how to create a safer workplace by providing a framework to engage employees in identifying potential hazards and eliminating them.

Item



Indirect
Causes



Direct
Causes



Incidents



Injuries

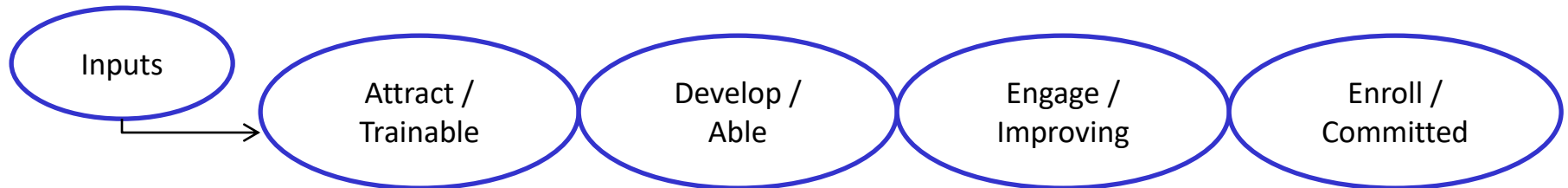
TWI Deployment and Implementation:

- Management support and commitment
- Selection of pilot area, steering team, TWI champions
- Develop pilot project deployment plan, measures
- Conduct TWI training
- Execute pilot project plan
- Follow up on problems that come up
- Reporting and publicizing results
- Develop in-house trainers
- Roll out TWI on a larger scale



Strengthen Your Organization & Culture:

- Develops competent and able people
- Engages more people in continuous improvement
- Inspires people to be committed
- Improves problem solving skills (team based)
- Improves interpersonal and communication skills
- Improves leadership skills



“Thinking Organization” - MassMEP 2007 Event, Lessons Learned the Toyota Way

“Toyota Culture”, Jeffrey K. Liker and Michael Hoseus, McGraw-Hill, 2008

“Toyota Talent”, Jeffrey K. Liker and David Meier, 2007

Questions



Thank You

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