



# WHY TWI?

Training Within Industry



Washington State Government  
**LeanTransformation  
Conference**

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“The TWI programs are distinctive, not because of the accepted principles of good management they cover, but because they are successful in getting these *used*.”

Alan G. Robinson & Dean M. Schroeder: *Training, Continuous Improvement, and Human Relations: The U.S. TWI Programs and the Japanese Management Style*; California Management Review Vol. 335, Number 2, Winter 1993, page 36



# TWI “J” Programs

- Job Instruction Training
- Job Methods Training
- Job Relations Training



# Caveats!

1. TWI is not a “cure-all.”
2. Best results when all employees participate
3. Best results when all three programs are used



# Concepts affected by, but not directly attributed to TWI

- Value Stream Mapping
- Visual Systems
- Takt Time
- Pull Systems
- Flow
- Cellular Manufacturing
- Level Work Load
- TPM
- Kanban
- 5S
- Single Piece Flow
- Supermarket



# Gains from TWI

- Training time reduced from 90 to 1.5 days
- Efficiency increase 10-15%; errors reduced 60-70% = \$50K annual savings
- Customer complaints costs reduced 50%
- Capacity increased 43%
- Scrap & rework reduced 60%



# Principles enabled by TWI

- Standard Work
- Continual Improvement
- Respect for the individual



# Standard Work

- Definition
  - SJ – Same Job
  - SW – Same Way
  - ET – Every Time
  - EB – Everybody



# Standard Work

- Why?
  - Reduce variation to make it easier to identify and make improvements



# Standard Work

- How ?
  - The only way to get standard work is with standard training and the only standard training is Job Instruction Training



# How does JIT reliably give us Standard Work?

Two Main Components:

1. The Job Breakdown Sheet (JBS)
2. The 4-Step Method



# JIT Procedure

1. Analyze the task (JBS)
2. Get consensus
3. Use 4-Step Method
4. Audit



# JIT Procedure Results

- Same method
- Same words
- All Instructors
- All learners

If the person hasn't learned, the instructor hasn't taught.



No.

## JOB BREAKDOWN SHEET

Operation: Make bowline on a bight knot

Parts: rope

Tools & Materials: none

Special terms: Bight = rope bent back on itself (a flat loop)

Standing end = long end of rope; Whipping end = short end

#	ADVANCING 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	Make bight	1- Length and position to suit	1- Sufficient length for purpose
2	Make loop	1- Use bight 2- Away from end 3- Whipping over standing 4- 2mm or 1"	1- To tie knot 2- Sufficient length for purpose 3- To tie knot 4- Small
3	Pass bight through loop	1- Back to front 2- A few inches	1- To tie knot 2- Easier to keep track of loops
4	Pass double loops thru single loop	1- As far as possible	1- Easier to control
5	Shape & Tighten	1- Single loop on standing side of knot 2- Adjust loop diameters 3- Pull standing end & single loop	1- To lock knot 2- For use 3- Prevent slippage

WHAT

HOW

WHY



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# 4-Step Method

1. Prepare the worker
2. Present the operation
3. Try Out Performance
4. Follow Up



# JIT Techniques

- Check physical ability --- Step 1
- Check desire --- Step 1
- Check pre-requisite knowledge --- Step 1
- Give only relevant information --- JBS
- Be concise but understandable --- JBS
- Include all details --- JBS
- Give information in order --- JBS



# JIT Techniques

- Repeat as needed --- Steps 3&4
- Use known terminology --- JBS
- Use same words --- JBS
- Deliver in 'chunks' --- JBS & Step 2
- Explain Why --- JBS
- Check for real understanding --- Steps 3&4



# JIT By-Products

- Communication
- Teamwork & Cohesiveness
- Morale
- Reduction in turnover & absenteeism



# Continual Improvement

Definition:

= gradual, never-ending changes suggested and implemented by any personnel, which increase the effectiveness and/or efficiency of an organization



# Continual Improvement

## Why Small, Continual Improvements?

- Becomes a habit
- Does not require eternal force
- Driven by all
- Greater impact than a few, large improvements



# Adjacent Possible

Innovations are possible only when they are adjacent to existing innovations.

*Where Good Ideas Come From*

Steven Johnson



# Continual Improvement

## HOW?

Everyone has ideas.

Teach everyone how to:

- Vet their idea
- Sell their idea
- Implement their idea



# Job Methods Training

## 4-Step Method:

1. Break down the job
2. Question every detail
3. Develop new method
4. Apply new method



# JMT By-Products

- Creates a questioning attitude
- Teaches how to see waste
- Improves communication
- Improves teamwork
- Improves morale
- Self-perpetuating



# Respect for the Individual

Definition:

To show regard or consideration for;

To take into account



# Respect for the Individual

WHY?

- Respect leads to  
Teamwork, which leads to  
Productivity, and  
Better attendance with  
Less turnover



# Respect for the Individual

## HOW?

- Use standard personnel guidelines
- Use a standard, fair method to handle personnel discrepancies



# JRT - Foundations

- A supervisor gets results through people
- Let each person know how s/he's doing
- Give credit where due
- Tell people in advance about changes
- Make the best use of each person's abilities
- Treat everyone as an individual



# JRT – 4-Step Method

Determine the objective

1. Get the facts
2. Weigh & Decide
3. Take Action
4. Check Results



# JRT By-Products

- Acts as a catalyst to get all functions working well together
- Increases 'pool' of potential supervision



# WHY TWI?

- JIT – Instruction
- JMT – Methods
- JRT - Relations



# WHY TWI?

- Improve overall
  - Productivity
  - Quality
  - safety
- Straightforward, practical
- Align with Self-Determination Theory
- Foundation for Organizational Learning



# Self-Determination Theory

- Competence --- JIT
- Autonomy --- JMT
- Relatedness --- JRT

[www.selfdeterminationtheory.org](http://www.selfdeterminationtheory.org)



# Foundation for Learning Organization

“The essence of organizational learning is the organization’s ability to use the amazing capacity of all its members to create the kind of processes that will improve its own.”

Nancy Dixon 1994



# Evidence of TWI in The Five Disciplines

- Personal Mastery
- Mental Models
- Shared Vision
- Team Learning
- Systems Thinking

*The Fifth Discipline* - Peter Senge



# **Questions ???**

# **Comments . . .**

