WHY TWI?

Training Within Industry

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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.”

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
• Takt Time
• Flow
• Level Work Load
• Kanban
• Single Piece Flow

• Visual Systems
• Pull Systems
• Cellular Manufacturing
• TPM
• 5S
• 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.
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

<table>
<thead>
<tr>
<th>#</th>
<th>ADVANCING STEPS</th>
<th>KEY POINTS</th>
<th>REASONS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A logical segment of the operation when something happens to advance the work</td>
<td>1- Make bight</td>
<td>1- Sufficient length for purpose</td>
</tr>
<tr>
<td>1</td>
<td>Make bight</td>
<td>1- Length and position to suit</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Make loop</td>
<td>1- Use bight</td>
<td>1- To tie knot</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2- Away from end</td>
<td>2- Sufficient length for purpose</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3- Whipping over standing</td>
<td>3- To tie knot</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4- 2mm or 1&quot;</td>
<td>4- Small</td>
</tr>
<tr>
<td>3</td>
<td>Pass bight through loop</td>
<td>1- Back to front</td>
<td>1- To tie knot</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2- A few inches</td>
<td>2- Easier to keep track of loops</td>
</tr>
<tr>
<td>4</td>
<td>Pass double loops thru single loop</td>
<td>1- As far as possible</td>
<td>1- Easier to control</td>
</tr>
<tr>
<td>5</td>
<td>Shape &amp; Tighten</td>
<td>1- Single loop on standing side of knot</td>
<td>1- To lock knot</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2- Adjust loop diameters</td>
<td>2- For use</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3- Pull standing end &amp; single loop</td>
<td>3- Prevent slippage</td>
</tr>
</tbody>
</table>

WHAT HOW WHY

TWI Learning Partnership
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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
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 . . .