

DOJO Training System

A hands-on training method used in factories and businesses to quickly build worker skills through practice in a simulated production environment — before stepping onto the real line.

MANUFACTURING EXCELLENCE

LEAN | KAIZEN | SIX SIGMA

by

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What is DOJO Training?

The Concept

The word **Dojo** comes from Japanese, meaning a dedicated training place for martial arts. In manufacturing, it refers to a dedicated training area inside the plant where employees learn and practice production skills before working on the real production line.

The philosophy is simple: **practice in a safe, simulated environment first** — then perform on the real line with confidence and competence.

Who Uses It?

Many world-class lean manufacturing companies have adopted DOJO training as a core workforce development strategy:

- **Toyota** — pioneer of lean and standardized work
- **Bosch** — global manufacturing excellence
- **Airbus** — precision aerospace production

These companies use DOJO training to improve workforce capability, reduce errors, and ensure consistent quality across all production shifts and facilities.

Purpose & Key Goals of DOJO Training

The main objective is to **build competence quickly and reduce production errors**. DOJO training addresses five critical areas of workforce development simultaneously.



Skill Development

Teach workers correct manufacturing processes and standard techniques through repeated hands-on practice.



Quality Improvement

Reduce defects and rework by ensuring operators master the correct process before touching real production.



Safety Training

Practice procedures safely before working on live machines or handling hazardous chemicals.



Standard Work Discipline

Train employees on Standard Operating Procedures (SOPs) to ensure consistent, repeatable output.

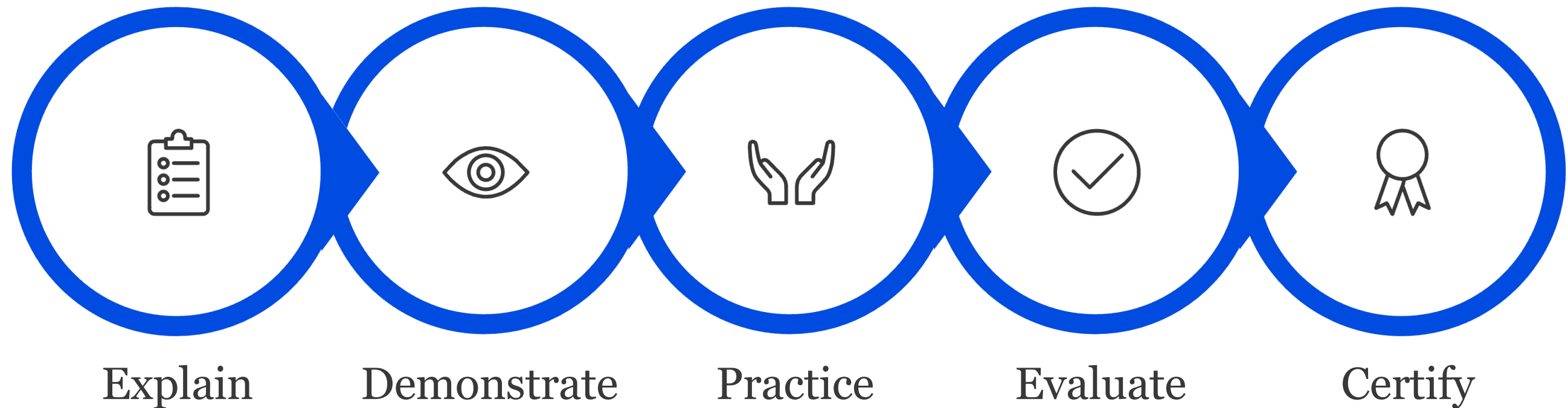


Faster Onboarding

New workers become productive 40–60% faster compared to traditional classroom-only training methods.

How DOJO Training Works

A DOJO training area inside the factory contains small replica production stations, training machines or mock setups, standard work instructions, visual boards, and skill assessment charts. The training follows a structured five-step flow.



This structured approach ensures that no worker enters the production line without having demonstrated competency in a controlled, risk-free environment. The cycle can be repeated for each new skill or process module.

DOJO in Chemical Manufacturing: Example

Adhesive Production Plant Example

A DOJO station in a chemical or adhesive plant trains workers on every critical step of the production process before they handle real batches. This prevents costly errors, contamination, and safety incidents.

Workers practice these steps in sequence at the DOJO station:

1. Raw material weighing and identification
2. Mixing procedures and sequence control
3. Quality testing (viscosity, pH, density)
4. Packing process and label verification
5. Safety procedures for chemical handling

Batch Mixing Process Training

Operators practice the full adhesive formulation sequence:

1. **Step 1** — Water charging
2. **Step 2** — Polymer dispersion addition
3. **Step 3** — Fillers addition
4. **Step 4** — Additives dosing
5. **Step 5** — Mixing and homogenization

Each step is practiced repeatedly until the operator achieves the required accuracy and timing before certification is granted.

DOJO Training Modules for Chemical Manufacturing

The DOJO program for construction chemical and adhesive plants is structured into six focused modules, each targeting a critical operational area.

1 Safety & Chemical Handling

PPE usage, chemical hazard symbols, spill response, MSDS/SDS understanding, emergency response. **Duration: 1 day.** Follows OSHA-aligned safety practices.

2 Raw Material Management

Material identification, batch weighing accuracy, FIFO implementation, storage conditions, handling powders and liquids. Includes weighing simulation and material labeling practice. **Duration: 1 day.**

3 Batch Mixing Operations

Recipe interpretation, correct mixing sequence, mixing speed and temperature control, batch documentation. **Duration: 2 days** – the longest module due to process complexity.

4 Quality Control Testing

Viscosity testing, solid content, pH measurement, adhesion strength testing. Equipment: viscometer, pH meter, density cup, oven. **Duration: 1 day.**

5 Packaging & Dispatch

Filling machine operation, label verification, batch coding, palletizing methods. Goal: reduce packing errors and leakage issues. **Duration: 1 day.**

6 Equipment Maintenance

Mixer cleaning, preventive maintenance, lubrication practices, troubleshooting basic issues. **Duration: 1 day.**

DOJO Training Area Layout

Recommended Size

100 – 200 m² dedicated training area inside the plant. This space should be separate from the active production floor to allow safe, uninterrupted practice.

Key Equipment Required

- Small training mixer
- Weighing scales
- Dummy chemical containers
- QC lab testing equipment
- PPE training station
- Mock packaging line

This creates a **realistic learning environment** without risking production losses or material waste.

Layout Zones

Safety Zone	Raw Material Handling Station
Batch Mixing Simulation	Quality Testing Lab
Packaging Station	Equipment Maintenance Area
Classroom + SOP Visual Board + Skill Matrix	—

Estimated Setup Cost (GCC Factory)

Training mixer	\$10k – \$20k
QC equipment	\$5k – \$10k
Training setup	\$5k
Visual boards	\$2k
Total	\$20k – \$40k

Very small compared to production losses caused by untrained operators.

Skill Certification System

Every employee must pass through **three certification levels** before being considered fully qualified. This structured progression ensures no operator is placed in a role beyond their demonstrated competency.

1

Level 1 – Basic Knowledge

Understands the process theory, safety rules, and standard procedures. Can identify materials and equip

2

Level 2 – Supervised Operation

Can perform tasks with supervision. Demonstrates correct technique but may need guidance on edge cases.

3

Level 3 – Fully Certified Operator

Independently performs all tasks to standard. Meets accuracy and timing requirements. Eligible for real production line.

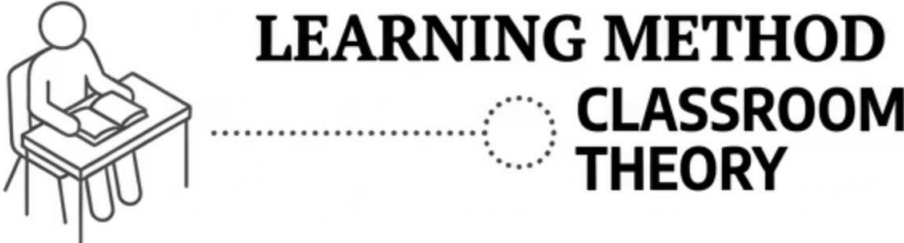
Example Employee Skill Matrix

Operator Name	Mixing	QC	Packing	Safety
Ahmed	Level 3	Level 1	Level 2	Level 3
Rashid	Level 2	Level 2	Level 3	Level 3

DOJO vs. Normal Training

Traditional classroom training and DOJO training differ fundamentally in approach, effectiveness, and measurability. The comparison below highlights why DOJO delivers superior results in manufacturing environments.

NORMAL TRAINING



DOJO TRAINING



Benefits & KPI Impact

Business Benefits

Faster Onboarding
40–60% faster employee training compared to traditional methods.

Better Quality
Significant reduction in production defects and batch errors.

Improved Safety
Fewer accidents due to pre-practiced emergency and chemical handling procedures.

Standardization
Same process executed consistently across all workers and shifts.

KPI Targets

Training KPI	Target
Training completion rate	100%
Skill certification rate	90%
Training hours per employee	40 hrs/year

Production KPI	Expected Improvement
Batch errors	-50%
Quality rejection	-30%
Production efficiency	+20%
Safety incidents	-40%
Operator productivity	+20%
Training time	-50%

❑ **Best results seen in chemical plants:** 60% faster operator training, 35% fewer production mistakes, and higher safety compliance.

Training Schedule & Duration

Training Duration by Type

Training Type	Duration
New employee training	5 – 10 days
Skill upgrade	2 – 3 days
Refresher training	Every 6 months

Week 1 — New Employee Schedule

Day	Training Topic
Day 1	Safety Training
Day 2	Raw Material Handling
Day 3	Mixing Operations
Day 4	Quality Testing
Day 5	Packaging
Day 6	Maintenance
Day 7	Skill Certification

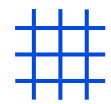
DOJO Organizational Structure



Trainers should be senior operators, QC chemists, safety officers, or maintenance engineers — people with deep practical knowledge of the real production environment.

Visual Management in DOJO

The DOJO area must be a visually rich environment that reinforces learning at every glance. Following **5S methodology principles**, the training space should display:



Skill Matrix Board

Displays each employee's current certification level across all modules, making skill gaps immediately visible to trainers and management.



Process Flow Charts

Step-by-step visual guides for each production process, reinforcing the correct sequence during practice sessions.



Quality Defect Samples

Physical or visual examples of common defects help trainees recognize and avoid errors before they occur on the real line.



Safety Posters & SOPs

Standard Operating Procedures and safety posters displayed prominently to reinforce correct behavior and emergency response protocols.



KPI Dashboard & Management Reporting

The DOJO system includes a structured **Management Dashboard** for tracking training impact on operations. Management should use this data in monthly, quarterly, and annual review cycles.

Dashboard Sheets

Training Data Sheet

Records month, employee ID, name, department, training module, hours, certification level (0–3), batch errors before/after, and safety incidents before/after.

KPI Calculations Sheet

Auto-calculates: total employees trained, total training hours, average hours per employee, Level-3 certified count, certification rate, batch error reduction %, and safety improvement %.

Management Dashboard Sheet

Summary view for plant management meetings showing all key metrics at a glance. Updated monthly.

Recommended KPI Targets

KPI	Target
Training hours per employee	40 hrs/year
Level-3 certification	80–90%
Batch error reduction	30–50%
Quality rejection reduction	25–40%
Safety incident reduction	40%

Management Review Cycle

- **Monthly:** Update training data, review certification levels
- **Quarterly:** Check production quality improvement, evaluate operator skill gaps
- **Annually:** Plan next year's training programs and budget

DOJO Training for Ceramic & Sanitary Trading

DOJO training is not limited to manufacturing. For a **ceramic and sanitary showroom or trading company**, the DOJO becomes a practical sales and product training center where employees practice customer interaction, product knowledge, and project sales skills before handling real customers.

Purpose

- Improve sales staff product knowledge
- Improve customer handling skills
- Increase sales conversion rate
- Train staff in project sales processes
- Reduce sales mistakes and wrong orders

DOJO Area Layout

- Product Knowledge Zone (Tiles & Sanitary)
- Customer Interaction Simulation Area
- Project Sales Training Desk
- Quotation & Order Processing Training
- Training Screen + Product Catalog Library

Certification Levels

- **Level 1:** Product knowledge
- **Level 2:** Customer handling
- **Level 3:** Sales closing ability
- **Level 4:** Project sales expert

Trading DOJO Modules & KPIs

Key Training Modules

- **Product Knowledge**
 Tile types, sizes, surface finish, water absorption, application areas. Sanitary products: WCs, basins, faucets, showers, bathtubs — including technical specs and price categories. **Day 1.**
- **Customer Handling**
 Role-play: greeting, understanding requirements, suggesting products, cross-selling sanitary items, closing the sale. **Day 2.**
- **Project Sales**
 Reading project BOQ, tile quantity calculation, price quotation preparation, negotiation skills, follow-up techniques. **Day 4.**
- **Order Processing**
 Order entry, stock availability checks, delivery scheduling, customer documentation. Mistakes here cause major customer complaints. **Day 5.**

Sales & Training KPIs

Sales KPI	Target
Sales conversion rate	+20%
Average invoice value	+15%
Product knowledge score	90%
Customer complaints	-30%

Training KPI	Target
Training hours per staff	30 hrs/year
Certification rate	90%
Product knowledge test score	85%

Expected Improvements

Sales conversion	+20–30%
Customer satisfaction	Higher
Sales team confidence	Higher
Project sales capability	Stronger

Conclusion: The DOJO Advantage

DOJO training is a **practical training center inside a factory or business** where workers learn and practice production or sales tasks before working on the real line or with real customers. It is one of the most effective tools in the Lean Manufacturing and continuous improvement toolkit.

60%

Faster Training

Operators reach full productivity in a fraction of the time compared to traditional methods.

50%

Fewer Batch Errors

Dramatic reduction in production mistakes and costly rework.

40%

Safety Improvement

Significant reduction in workplace accidents and safety incidents.

\$40K

Max Setup Cost

A small investment compared to the cost of production losses from untrained operators.

- ❑ Simple Definition: DOJO training is where workers practice before they perform — building skill, confidence, and consistency that drives operational excellence across manufacturing and trading businesses alike.