Creating a Culture of Continuous Improvement – Using the Improvement Kata

Washington State Lean Transformation Conference
Tacoma, WA 2012

Barb Bouché, M Ed
Director, Continuous Performance Improvement
Seattle Children’s Hospital
Purpose of Today’s Presentation

Awareness; not skill development

Sense of the subtle yet powerful nuances of Improvement patterns (aka Kata)

A paradigm shift in thinking about your role as a manager, leader, lean facilitator, process owner; and how continuous improvement is achieved and sustained
What do you struggle with?

Sustainability
Rigor
Discipline
A QUICK EXPERIMENT

Take a moment... please cross your arms. Then re-cross them the other way.

How did it feel the second time compared to the first?

For most of us the second time feels odd. You have to consciously think about it and be more deliberate.

What would happen if you practiced folding your arms the other way every day?

It would become normal; something you can do without thinking about it.
MUCH OF WHAT WE DO IS HABITUAL

Like crossing our arms, performed almost without thinking

Habits are behaviors that have been repeated regularly and occur unconsciously. The repeated behavior develops neural pathways in the brain, making the behavior easier to complete.
You can rewire your thinking and habits by deliberately practicing a different pattern.

You can change the culture of an organization, and even an entire society, this way.
What’s next?

2
4
6
8
2
WE ALSO HAVE COGNITIVE BIAS

A tendency to draw incorrect conclusions in certain circumstances based on cognitive factors rather than evidence.

Our habits work well under many circumstances, but in certain cases they lead to errors known as cognitive biases.

For example, a pitfall of many habits is that the past experiences that created them do not necessarily represent future situations.
The Marshmallow Challenge
WHAT’S A KATA?
A kata is a routine you practice deliberately, so it’s pattern becomes a habit.

Through practicing, the pattern of a kata becomes second nature - done with little conscious attention.

Examples include riding a bicycle, driving a car, typing. Once you’ve learned to drive you don’t think much about using the car’s controls and can focus your attention on the situational aspects of navigating the road.
KATA CREATES CULTURE

This is deliberate daily practicing

This is automatic, unconscious everyday practicing

Practicing specific new behaviors Affects Organizational Culture

Routines Habits Rituals Norms

Teaches Mindset and behavior

What organizational culture, mindset and behavior do you want?

What do you want your managers to be teaching?

Every manager is automatically a teacher, because they teach & reinforce your organization’s prevailing culture.
# Typical Box Scorecard Approach

## Continuous Performance Improvement

### GROWTH

<table>
<thead>
<tr>
<th></th>
<th>Jan</th>
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<td>Internal Film Purchases</td>
<td>Plan: 67.0%</td>
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<td>67.0%</td>
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<tr>
<td>Actual</td>
<td>Plan: 85.0%</td>
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<td>85.0%</td>
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### CUSTOMER FOCUSED QUALITY

<table>
<thead>
<tr>
<th></th>
<th>Jan</th>
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<tr>
<td>Complaint Occurrences/BMM</td>
<td>Plan: 2.86</td>
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<tr>
<td>On-Time Delivery vs Request</td>
<td>Plan: 66.0%</td>
<td>69.0%</td>
<td>69.0%</td>
<td>69.0%</td>
<td>69.0%</td>
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<tr>
<td>Actual</td>
<td>52.4%</td>
<td>74.1%</td>
<td>67.6%</td>
<td>65.4%</td>
<td>54.1%</td>
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<tr>
<td>On-Time Delivery vs Acknowledge</td>
<td>Plan: 98.5%</td>
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<td>98.5%</td>
<td>98.5%</td>
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<tr>
<td>Actual</td>
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<td>98.5%</td>
<td>98.5%</td>
<td>98.5%</td>
<td>98.5%</td>
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<tr>
<td>Lead-Time</td>
<td>Plan: 22.5</td>
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### ISO 9001 Implementation

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<tbody>
<tr>
<td>Plan</td>
<td>10.0%</td>
<td>20.0%</td>
<td>25.0%</td>
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<td>45.0%</td>
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<tr>
<td>Actual</td>
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<td>12%</td>
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### ERP Implementation

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<td>Plan</td>
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<td>Actual</td>
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### OPERATIONAL EXCELLENCE

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<tr>
<td>Cost/Eq Unit Measures 2006= .075, 2007= .095</td>
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<tr>
<td>Actual</td>
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<td>Effective Feet/Minute (asset adjusted rate)</td>
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<td>Actual</td>
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<tr>
<td>% Scrap</td>
<td>Plan: 10.30%</td>
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<td>10.30%</td>
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<tr>
<td>Actual</td>
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<td>9.91%</td>
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<td>Changeover Time/Color (Min)</td>
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<td>Inventory Days On Hand</td>
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### SAFETY/ENVIRONMENT

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<tr>
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<tr>
<td>Actual</td>
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<tbody>
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<td>2.86</td>
<td>2.86</td>
<td>2.86</td>
<td>2.86</td>
</tr>
<tr>
<td>Actual</td>
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<td>3.1</td>
<td>3.1</td>
<td>3.1</td>
<td>3.1</td>
</tr>
</tbody>
</table>

### BACKWARD LOOKING VS. STRIVE FOR A FUTURE REALITY

- **84.9% OTD Last Period**
- Continuous Performance Improvement
What are the day to day routines that leaders follow?

- Problem solving is handled in meetings – derailing meeting effectiveness
- Key performance indicators are not often defined
- Leadership discussions lack defined focus – (planned vs. actual performance)
- Standard work is not defined, process metrics unclear
- Focus is often on problem solving and firefighting
We may often be used to this pattern
Lean and Improvement Kata

Typical Lean
Focus is on implementing tools and techniques.
What you see when you go on benchmarking trips.

Improvement Kata
Behaviors or katas of managers and staff in their daily routines.
THE IMPROVEMENT KATA
A routine practiced to make striving and scientific working a daily habit, based on four overall steps:

1. Understand the Direction
   - What challenge are we striving to meet?

2. Grasp the Current Condition
   - What is the current pattern?

3. Establish the Next Target Condition
   - What pattern do we want to have next?

4. PDCA Toward the Target Condition
   - A step-by-step discovery process between where we are and where we want to be next.

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The Four Routines of the Improvement Kata

1. Vision
2. Current Condition
3. Next Target Condition (TC)
4. Obstacles

Continuous Performance Improvement
THE IMPROVEMENT KATA

A routine practiced to make striving and scientific working a daily habit, based on four overall steps:

1. Understand the Direction
   - What challenge are we striving to meet?

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TOYOTA KATA
A CONNECTED IMPROVEMENT TRAJECTORY

The Improvement Kata pattern is purpose-driven activity

Current Condition

Target Condition (date)

Obstacles

Challenge

Vision

Improvement Kata activity is here

Series of target conditions toward the challenge

1 Week to 3 Months out

1-3 Years out

Distant

Process level

Value-stream level

Organization level

Describes the next desired process condition, to be reached by a specified date.

Significant customer-oriented challenge that will take a series of target conditions to achieve.

May come from the future-state value-stream map.

Often refers to lead time to the customer.

Long-term direction giver.

Too far away to motivate and guide specific Improvement Kata activity.

Often related to 1x1 flow to the customer.
Our Vision

We will be the Best Children’s Hospital

Just what does that mean?
CPI “System” and Vision – more integrated

Engage Everyone in a Patient-Focused Philosophy

Value Stream Improvement Through Waste Reduction

No Waiting

No Harm

“Just In Time”
Right service Right amount Right time Right place
Eliminate batches
Rapid Changeover

Balance the Work

Standard Work

Continuous Flow:

“Built-In Quality”
Make problems visible
Never let a defect pass along to the next step
Error Proof
Stop when there is a quality problem

“Value Stream Improvement Through Waste Reduction”

Seattle Children’s Hospital Research Foundation

Continuous Performance Improvement
The challenge ensures that process-level improvement efforts have a focus and fit together. Without a challenge...

- The organization is unaligned. Improvement efforts and proposals are evaluated independently, instead of as part of reaching for something. We tend to use short-term cost/benefit analysis to decide what to do, which dangerously keeps us inside our current knowledge threshold.

- We jump from one direction to another in trying to avoid obstacles, rather than working through obstacles. We don’t use obstacles to guide us to the learning vectors, innovations and important competencies of tomorrow.

- Improvement efforts focus on reacting to daily problems (“troubleshooting”) and trying to maintain the current level of performance, rather than reaching for a next, new level of performance.
Continuous Performance Improvement

WHAT IS A CHALLENGE?

A challenge is:

- A non-negotiable objective related to better serving the external customer. It’s often a lead-time goal.
- Typically at the value-stream level, pertaining to more than one process (see next page).
- Often 1-3 years out.
- Achievable, but we don’t know in advance how we will achieve it. You don’t need to figure out now how to get there. That’s what the rest of the Improvement Kata is for.
- Not easy, but not impossible.
- A step toward to the vision.

You can think of a challenge like a sentence beginning with the words, “Wouldn’t it be great if we could...”
A CHALLENGE USUALLY PERTAINS TO MORE THAN ONE PROCESS

Process A
- Target Condition
- Next Target Condition

Process B
- Target Condition
- Next Target Condition

Process C
- Target Condition
- Next Target Condition

Challenge

Vision
**CHALLENGE = A RALLYING POINT**

A challenge should be a description - a statement - of a desired state that people can rally around, not just a number. A good challenge focuses our attention and effort.

<table>
<thead>
<tr>
<th>Challenge Description</th>
<th>Example Rallying Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wouldn’t it be great if we could...</td>
<td>“Machine to assemble”</td>
</tr>
<tr>
<td>“...machine parts directly in the 1x1 assembly flow”</td>
<td>“Paint to assemble”</td>
</tr>
<tr>
<td>“...paint parts directly in the 1x1 assembly flow”</td>
<td>“Build to truck, kitchen at a time”</td>
</tr>
<tr>
<td>“...build one customer kitchen at a time and put it right on the truck”</td>
<td>“Take 45”</td>
</tr>
<tr>
<td>“...have lab-test results done in 45 minutes, with no errors”</td>
<td>“Just a week”</td>
</tr>
<tr>
<td>“...take only 7 days from new patient referral to evaluation”</td>
<td>“Same day, next day”</td>
</tr>
<tr>
<td>“...assemble the day ordered, and ship the next day”</td>
<td></td>
</tr>
</tbody>
</table>

© Mike Rother / Improvement Kata Handbook
THE IMPROVEMENT KATA INVOLVES MANAGEMENT AND LEADERSHIP

Teaching the improvement kata is management's job.

Establishing direction is part of leadership.

The challenge is a link between process-level improvement and organization strategy.
Let’s practice

What is the CHALLENGE:

Wouldn’t it be great if…….

We all could write clearly and consistently with both hands any time we wanted to.
Continuous Performance Improvement

ORIENTATION

Understand the Direction

Grasp the Current Condition

Establish the Next Target Condition

PDCA Toward the Target Condition

What challenge are we striving to meet?

What is the current pattern of working?

The 5 Questions

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THE PURPOSE OF THIS PROCESS ANALYSIS

The purpose of the Toyota Kata process analysis is **not** to uncover problems, wastes or potential improvements.

Analyzing the current condition is done:
- To obtain facts and data
- To look for the current pattern of operation
1. What are the units of work, and how long do they take?
   1. Steps, sequence, time...
2. What are the typical patterns of work? - diagram
   • How is the process currently performing? - data
3. Do we have any machine constraints?
4. How many people are necessary for the process?
5. How is the process performing over time? - data
ORIENTATION

Understand the Direction
What challenge are we striving to meet?

Grasp the Current Condition
What is the current pattern of working?

Establish the Next Target Condition
What pattern do we want to have next?

PDCA Toward the Target Condition

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How do we tend to try to improve?

**Old Way**

We hunt for wastes or react to problems, and try to eliminate them.

Current Condition

Problems, wastes and opportunities for improvement

This scattershot approach may not achieve meaningful improvement that moves the organization forward.

It misspends our limited capacity for making improvements.

We don’t learn much, because we’re not experimenting.
THE IMPROVEMENT KATA IS A DIFFERENT APPROACH

With the improvement kata you work iteratively toward a target condition, on the way to a vision, learning along the way. You work on those things that you discover you need to work on to reach the next target condition.

Diagram by Mr. Jeff Uitenbroek
WHAT IS A TARGET CONDITION?

A target condition is:

- A nearer-term desired state that is defined in more detail than the challenge.
- Typically at the individual process level.
- A step toward the challenge.
- Includes a specified target date, typically 1 week to 3 months out.

The challenge comes from leadership. A target condition is developed by the learner in dialog with the coach and the process team.

These are two different things developed by two different groups.
A target condition is like an overall hypothesis you test against in order to reveal key obstacles, using this question: “What is now preventing us from working according to the target pattern?”

In contrast, PDCA without a target condition is like trying to learn from randomness.

Illustration from The Team Handbook, page 3-33

You will often hit your “threshold of knowledge” and try to find THE answer.
‘BEYOND YOUR KNOWLEDGE THRESHOLD’ MEANS
YOU DON’T ALREADY KNOW HOW YOU WILL REACH IT

A target condition that you can already or quickly see how
to reach - one that involves little trial and error - is not a
good target condition. A good target condition requires
experimentation and learning to reach it.

The greater danger for most of us lies not in setting our aim too high and
falling short; but in setting our aim too low, and achieving our mark.

~ Michelangelo
TERMINOLOGY

- A *target condition* is not a *solution*. It’s something you are striving to reach by a specified date.

- What you do to overcome *obstacles* (problems) on the way to a target condition are *solutions* or *countermeasures*.

- *Adaptiveness* happens as you work step-by-step toward the target condition and adjust based on what you learn along the way.

---

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Target Condition
**TARGET CONDITION** versus **TARGET**

Learn the difference!

<table>
<thead>
<tr>
<th>TARGET CONDITION</th>
<th>TARGET</th>
</tr>
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<tbody>
<tr>
<td>A learning goal.</td>
<td>A performance goal.</td>
</tr>
<tr>
<td>A description of circumstances.</td>
<td>An outcome, result or score.</td>
</tr>
<tr>
<td>Description of a desired pattern of how something should operate</td>
<td>Examples:</td>
</tr>
<tr>
<td></td>
<td>- Inventory level</td>
</tr>
<tr>
<td></td>
<td>- Inventory turns</td>
</tr>
<tr>
<td></td>
<td>- Lead time</td>
</tr>
<tr>
<td></td>
<td>- Output per hour</td>
</tr>
<tr>
<td></td>
<td>- Cost, Labor cost</td>
</tr>
<tr>
<td></td>
<td>- Quality level</td>
</tr>
<tr>
<td></td>
<td>- Productivity</td>
</tr>
<tr>
<td></td>
<td>- etc.</td>
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<table>
<thead>
<tr>
<th>This is actionable</th>
<th>Cannot be achieved directly</th>
</tr>
</thead>
<tbody>
<tr>
<td>We predict the process operating in this pattern will generate.........................this outcome / result</td>
<td></td>
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</tbody>
</table>

A *target* is simply an outcome, while a *target condition* is a description of circumstances -- of an operating pattern -- that you predict will result in the outcome.
## EXAMPLES

<table>
<thead>
<tr>
<th><strong>TARGET CONDITION</strong></th>
<th><strong>TARGET</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>A learning goal. A description of circumstances.</td>
<td>A performance goal. An outcome, result or score.</td>
</tr>
</tbody>
</table>

- **TARGET CONDITION**: Desired pattern for how basketball team plays  
  Desired pattern of how math and science are taught.  
  Desired pattern of student study habits.

- **TARGET**: 10% more shots made  
  All 6th grade students in our school passing the standardized test for math and science.

- **This is actionable**: We predict the process operating in this pattern will generate.  
  **Cannot be achieved directly**: ....this outcome / result
Target conditions consist of

- Defined steps, sequence, timing
- Process characteristics *(examples)*
  - Number of workers
  - Regulatory requirements
  - Shifts, etc..
- Process metrics
- Outcome metrics
OBSTACLES TO THE TARGET CONDITION ARE WHERE DAILY RAPID PDCA CYCLES HAPPEN

Here we’ve reached the level in the organization where the process of evolution takes place.
Let's Practice

**Current Condition**
- Describe your current capabilities in writing and drawing

**Target Condition – by next Tuesday**
- Words are written individually, in the same order in 10 seconds
- Anyone can read the words
- Loops and letters are smooth and even
- Star shape has five points that are of equal shape

Challenge:
*We could write clearly and consistently with both hands any time we wanted to.*
ORIENTATION

Understand the Direction
What challenge are we striving to meet?

Grasp the Current Condition
What is the current pattern of working?

Establish the Next Target Condition
What pattern do we want to have next?

PDCA Toward the Target Condition
The step-by-step discovery process between where we are and where we want to be next

You are here

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PDCA Cycles 5
Most Important:
ASSUME THE PATH IS UNCLEAR

We make a plan and intend to execute the plan. But reality is neither linear nor predictable enough for this alone to be an effective means for achieving our target conditions.

With complex systems we cannot plan or aim so well up front as to hit the target condition. Regardless of how well you planned, the path to achieving the target condition is somewhat of a grey zone.

A target condition is a setup for experimenting at the threshold of knowledge.
TIME TO PUT ON YOUR SCIENTIST HAT
WHAT IS SCIENTIFIC THINKING?

Learning along the way to the target condition

Because the path to a target condition cannot be predicted with exactness, we have to find that path by experimenting like a scientist. With each insight a scientist adjusts his/her course to take advantage of what has been learned.

What we may think scientific is

- Quantification and precision
- Objective and certain
- Reveals what is there

Eg: We have made the right plan

What scientific really is

- Involves uncertainty, ambiguity & incompleteness
- Never free from error
- A process of discovery, via systematic trial and error

Eg: Our plan is a hypothesis
THIS IS THE WELL-KNOWN PDCA CYCLE

(1) Define what you expect to do and to happen.
This is the hypothesis or prediction.

(2) Test the hypothesis, i.e. try to run the process according to plan. Observe closely.

(3) Compare actual outcome with expected outcome.

(4) Standardize/stabilize what works, or begin the PDCA cycle again.

ACT

PLAN

CHECK or Study

DO

But let’s take a closer look at how it works...
‘SURPRISE’ IS HOW PDCA HELPS YOU LEARN AND IMPROVE

Learning happens when reality differs from expectation

Unexpected results (surprises) lead to valuable learning experiences. The Improvement Kata mindset seeks to use these lessons.

A. The purpose of PDCA is to generate surprises and thus opportunities for learning & progress toward the target condition.

B. Using small failures as learning opportunities also develops the improvement expertise of the learner.
WATCH FOR THE KNOWLEDGE THRESHOLD

This is where you experiment with PDCA

The threshold of knowledge is the point at which we have no data and start guessing.

There’s always a knowledge threshold.

When something other than what we expect happens, the knowledge threshold becomes visible. When a plan, step, belief or hypothesis turns out to be incorrect, you’re at the learning edge.
SMALL PDCA CYCLES = MORE LEARNING

When should you ‘check’?

**Old Way**
- Check infrequently (eg: weekly)
- Big PDCA cycles

**Improvement-Kata Way**
- Check after each step
- Small PDCA cycles (short & frequent)
When you experiment
TRY NOT TO THINK TOO FAR AHEAD

You don’t actually know what the result of the next step will be. So concentrate on the next step, because what you learn from that may influence the step after that.

"Every step taken alters the horizon, changes the field of vision, causing us to see what had been thus far circumscribed as something quite different."

~ James P. Carse, NYU
AND KEEP THIS QUESTION IN MIND

Target condition

- Words and shapes are written individually, in the same order in 10 seconds
- Anyone can read the words
- Loops and letters are smooth and even
- Star shape has five points that are of equal shape

What is preventing us from being able to reach our target condition?
What are the obstacles that are preventing you from reaching your target condition?

Make a list on the back side of your paper....
Teaching the Improvement Kata

COACHING CYCLES USING THE FIVE TOYOTA KATA QUESTIONS

1  2  3

Practice this Routine

4  5
ORIENTATION

Understand the Direction

Grasp the Current Condition

Establish the Next Target Condition

PDCA Toward the Target Condition

The 5 Questions

You are here

Conduct Coaching Cycles

Coach Learner

Teaching the improvement kata through coached practice
Coaching

It’s about developing people, not solving the problem or overcoming the obstacle.

Let the learner make a mistake, we learn best on the edge of our knowledge.

Figure 8-2. Toyota’s classic depiction of its mentor/mentee approach
Note: Labels and current- and target-condition circles were added by the author.
THE INTENTION OF A COACHING CYCLE IS NOT AUDIT AND COMPLIANCE

It’s this...

...not this

Teaching the learner how to play the continuous improvement game
The Two Fundamental Routines at the Core of Coaching Cycles

The 5-Question Coaching Dialog

**The Five Questions**

1) What is the target condition?  
2) What is the actual condition now?  
3) What obstacles do you think are preventing you from reaching the target condition?  

(Turn Card Over)

What obstacle are you addressing now?  
4) What is your next step? (next PDCA / experiment) What do you expect?  
5) When can we go and see what we have learned from taking that step?

Rapid PDCA Cycles

PDCA CYCLES RECORD

<table>
<thead>
<tr>
<th>Step</th>
<th>What do you expect?</th>
<th>Result</th>
<th>Observe closely</th>
<th>What We Learned</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Five-Question Card Used by the Coach

PDCA Cycles Record Used by the Learner
BE CAREFUL ASKING WHY?

The Lean community promotes “asking why five times” as a means to help get to the root cause of a problem. This is fine if you are asking the question of yourself.

However, when a coach asks a learner “why” it can easily seem confrontational rather than constructive, especially if “why” is asked repeatedly.

You’re asking questions to help you see the learner’s current thinking pattern, and for that purpose it may be better to use questions beginning with the word “what”.

In the spirit of the Improvement Kata, think of it as five experiments rather than five “whys”
Let’s practice

Coaching Meeting #1

Pick a partner – one person is the Coach, one is the Learner

Learner - Review your list of obstacles

Learner - Identify ONE obstacle that is preventing you from reaching the target condition

Coach – Review the coaching card questions in order with the Learner

Switch roles
It all about linking improvement with learning.

**Improvement Kata**
- Routines performed by a mentee (learner) while being coached by a mentor

**Coaching Kata**
- Scheduled and structured coaching routine performed at the “Gemba”

Coaching occurs outside of routine scheduled sessions as the threshold of the mentee knowledge and ability has to be extended.
Key Foundational Principles:

Not an implementation process, as in a tool of lean. It is a way of changing behavior and mindset. Establishing new thought and behavior takes practice and coaching.

We should always be asking - ‘is the process performing as expected…(at the Target Condition)’?
Toyota Kata Learning Progression

- **Aware of it**: Is aware of the improvement kata approach to improvement and adaptation
- **Able to do it**: Can effectively apply the improvement kata
- **Able to coach it**: Can teach others

Continuous Performance Improvement
Continuous Performance Improvement

Combine training and doing!

Not this

Training ➔ Doing

This is where you recognize how people are thinking, what they are learning and what they need to learn/practice.

But this (combined)

Doing & Training

The coach sees in real time where the learner is, and introduces appropriate adjustments.
In Conclusion

**Toyota Kata** is a management system focused on process and people development.

Managers coach others to drive continuous improvement and the achievement of challenging objectives in all aspects of an organization.

It is a system of leadership practice which drives adaptive thought and behavior.
What questions do you have?