

Practice the Improvement Kata

A way to develop scientific thinking to create an agile mindset

BY OSCAR ROCHE

Following a recent workshop last June, Bill Robertson, the IT director at De Bortoli Wines Australia, made a seemingly off-hand comment that I think is a crucial insight about continuous improvement. As we discussed one of the projects he was leading, he said: “You know, we often lead change through projects in our organization, but about 10 percent of the change is technology based, the rest is people based.”

Robertson says it’s 90 percent about people, but here’s the problem: Most of our programs and methodology are 90 percent about the tools. Even lean and continuous improvement initiatives, which are fundamentally about solving problems and implementing change, too often get reduced to tools. So that begs the question: How do we prepare people—our workforce—to adapt to change?

Changing mindsets

Each of us has a mindset through which we see the world—our perceptions. In the image, at right, some of us will see the old lady (facing us), some of us the young lady (facing away), but we are all looking at the same picture.

Our mindset makes us pay attention to certain things and ignore others. It influences how we interpret what we see and hear. That is why there is often a difference

The Evolution of Lean Thinking and Practice	
<p style="text-align: center;">Lean 1.0</p> <p>In the 1980s and 1990s we visited Toyota and came back with ...</p> <ul style="list-style-type: none"> • Waste reduction • Performance improvement 	<p style="text-align: center;">Lean with a “Toyota Kata Mindset”</p> <p>In the 2000s we researched Toyota’s management system and found ...</p> <ul style="list-style-type: none"> • Striving for/achieving target conditions • Performance improvement <p>Byproduct</p> <ul style="list-style-type: none"> • Waste reduction

The Toyota Kata mindset changes our approach to continuous improvement. Source: Mike Rother, Michael Lombard and Oscar Roche.

between what is actually said and what the listener hears—this being the root cause of many a conflict and many continuous-improvement projects gone awry!



What do you see? What do others on your team see?

Mindset can support agile behaviors or can hinder them. Any improvement exercise involves multiple people or groups working on different parts of the puzzle. How they understand customer needs and how they collaborate to create a cohesive whole can greatly influence success. Agile thinkers are aware that their own perceptions are shaping their view and that they must be wary of believing everything they think. Agile thinkers tolerate some ambiguity. To navigate that ambiguity, they experiment and continually test the views created by their perception. And from those experiments, they find the way forward, adapting as need be. This mindset is quite different from one where they are just following pre-defined actions in a project plan.

UNLEASHING SCIENTIFIC THINKING THROUGH IMPROVEMENT KATA

Scientific thinking can be a powerful driver of lean and other continuous improvement practices. The Improvement Kata is one of the most effective ways to develop scientific thinking. The Improvement Kata / Coaching Kata approach is a practical application of scientific thinking; its steps parallel those followed by professional scientists, as detailed in the table below. By repeating the Improvement Kata, or “everyday science,” pattern of inquiry to address challenges, a practitioner will develop and unleash the power of scientific thinking in the execution of day-to-day work, and cultivate an agile mindset.

IMPROVEMENT KATA “Everyday Science”		PROFESSIONAL SCIENCE	
1. Challenge (Understand the Direction)	<p>The aim of the “effort” in Improvement Kata:</p> <ul style="list-style-type: none"> ■ The goal is to provide better service to a business need (can be an external or internal customer); “trying to achieve something.” ■ A challenge provides the overall direction; it completes the sentence, “Wouldn’t it be great if we could...” <p>e.g., Safely operate four “sheds” (~60,000 chickens per shed) on an intensive chicken farm with one person by Dec. 31, 2018.</p>	1. Research Topic	<p>This is the topic area, the aim of the “effort.” In professional science:</p> <ul style="list-style-type: none"> ■ The goal will be to “better understand”; “to reveal or shed light on something that exists.” ■ Better understanding will permit something to be done better or more efficiently perhaps. This is similar to the challenge being connected to the vision. <p>A. Social networking B. Cyberbullying</p>
2. Grasp the Current Condition	<p>“What facts and data do we have now or can we obtain? What do we know now?”</p> <p>Currently operates with two people, who have had three “accident near misses” in the last month associated with moving migration fences; one migration fence takes 4 to 5 minutes to move.</p>	2. Secondary (or background) research	<p>“What facts and data do we have now or can we obtain? What do we know now?”</p>
3. Next Target Condition	<p>Based on where the facts and data are showing we are now, where do we suggest we need to be next (and by when)?</p> <p>One person safely moving (lower and put up again in new position) the migration fence in 15 seconds or less, by Aug. 31, 2018.</p>	3. Research Question	<p>This is the research objective, the hypothesis. In professional science—what part of the whole are the facts and data suggesting we need to better understand next?</p> <p>A. How are online users experiencing or addressing privacy issues on social networking sites like Twitter and Facebook?</p> <p>B. Is there a connection between those who troll on the Internet and those who engage in cyberbullying?</p>
Obstacles	<p>What is stopping us now from being where we need to be next?</p> <ul style="list-style-type: none"> ■ The nuts holding the fence are awkward to undo (current focus obstacle). ■ Need to really pull hard and jerk the bracket off the wall. ■ Short operators need a second person’s help. 	Research Problem	<p>What is stopping our understanding now; what facts and data are missing?</p> <p>A. The age of the social media user might be a factor in the degree of a person’s privacy concern. We don’t know an age-range associated with concerns.</p> <p>B. Gender may be a factor in those who cyberbully. We don’t know the gender breakdown associated with cyberbullying cases.</p>
4. Experiment (against the focus obstacle)	<p>PDCA</p> <p>Reverse the bolts so the thread is on the opposite side of the bracket.</p>	4. Experiment	<p>PDCA</p> <p>A. Conduct a survey, analyze the data to see if there is an age association.</p> <p>B. Analyze the data to see if there is any gender correlation.</p>

So, of course, the answer seems to be to teach people a better way of thinking and working. Tell them the better way and ask them to follow the methodology—easy.

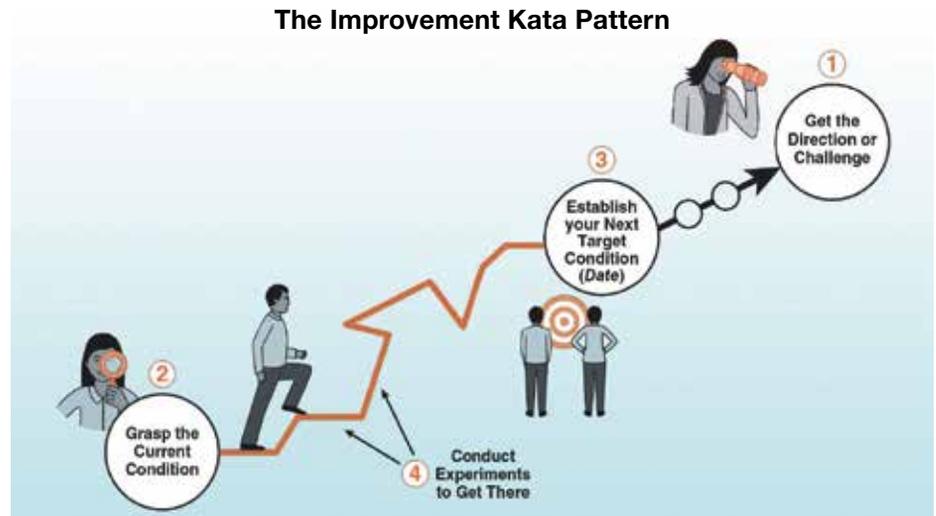
Unfortunately, hoping to create new behaviors by explaining or trying to convince people doesn't work. The explanation may be correct, but it doesn't change the habitual ways of thinking that have built up over the years.

Practicing Toyota Kata

One answer that has arisen in recent years is deliberate practice of the so-called Improvement Kata (Mike Rother, 2009), one of two practices—patterns of thinking—that is part of Toyota Kata, a way of developing scientific-thinking skill and mindset in any team or organization. The core concept of the Improvement Kata is to learn a new way of thinking via practice with corrective feedback. This is a way of applying a greater scientific-thinking discipline to questions, then validating or disproving our perceptions—or our preconceived mindset. It is a means toward behaving in an agile manner.

The Improvement Kata is a four-step pattern of deliberate practice that, as a whole, parallels scientific thinking:

- Step 1** Sets a direction by defining a challenge or goal.
- Step 2** Requires getting an understanding of the current situation. Where are we now?
- Step 3** Establishes a next state—the next “target condition”—that is achievable soon, on the way to the bigger challenge. (Now a gap is clear.)



The Improvement Kata follows a four-step pattern that, as a whole, parallels scientific thinking. Source: “Toyota Kata Practice Guide” (McGraw-Hill, 2018).

Step 4 Uses rapid experimentation to navigate toward the target condition.

It's not easy to adopt a new way of thinking. That's why there is also the Coaching Kata to practice—a questioning pattern that helps anyone develop greater scientific thinking.

1. What's our target condition (the in-between state)?
2. What's the actual condition now? Now reflect: What did we learn from our last experiment?
3. What obstacles are stopping us from reaching our target condition, and which one will we work on?
4. What's our next experiment?
5. How quickly can we see what we've learned from that?

Practicing the Improvement Kata keeps us focused on where we need to be but

doesn't engineer a project plan approach to get there. Why? Because within the fourth step of the Improvement Kata, we don't prescribe step-by-step how we think we can get there. We acknowledge there is a grey zone between where we are now and where we need to be.

Visualizing the Gray Zone



The Improvement Kata does not prescribe a step-by-step plan to achieve the target condition. This acknowledges that there is a gray zone where experiments need to be conducted to determine the next steps.

The Improvement and Coaching Kata patterns give you a way to develop the 90 percent people-based process that Bill Robertson was referring to and achieve whatever you want.

What a perfect fit for the dynamic, unpredictable conditions of the early 21st century. ●

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