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# Improvement Kata Handbook

## Practicing foundational skills for scientific thinking

By Mike Rother




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*Introduction*

**PART I: GETTING STARTED**

*The Improvement Kata Pattern*

*Guidelines for Practicing*

*Roles and Structure for Daily Practice*

**PART II: PRACTICE ROUTINES FOR THE IMPROVEMENT KATA**

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# ABOUT THIS PROTOTYPE VERSION OF THE IMPROVEMENT KATA HANDBOOK

**While we develop and test the contents of the Improvement Kata Handbook, it's beta version will be available online. Use the Handbook to help you apply, teach and internalize the scientific patterns of the Improvement Kata and the Coaching Kata, through practice.**

**This beta version is provided for sharing things we're learning... to accelerate our collective learning about deliberate practice of structured routines as a means of developing the skills and habits of scientific thinking in any organization.**

**The beta version is updated periodically. Check the version number on the cover.**

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These materials are intended to support persons who are teaching, practicing or interested in the Improvement Kata & Coaching Kata.

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# A Note to All Users of this Handbook

**Kata** are structured routines that you practice deliberately, especially at the beginning, so their pattern becomes a habit and leaves you with new abilities. Kata are a way of learning fundamental skills that you can build on. The word comes from the martial arts, where Kata are used to train combatants in fundamental moves. But the idea of a Kata can be applied in a much broader sense. The Improvement Kata and Coaching Kata are for training managers and leaders in a new way of doing their jobs.

At first you should try to practice each Kata exactly as described, until its pattern becomes somewhat automatic and habitual for you. That can take several months of practice. When you reach that point and have learned through practice to understand the "why" behind that Kata's routine, then you can start to deviate from it by evolving your own version or style of the pattern... as long as its core principles remain intact.

**Practice Kata to Find Your Way.** My goal with this Handbook is not to show you precisely how your management system should look and function. That would be impossible since each organization has unique characteristics and exists in unique conditions. Developing an organization's managerial system is not about copying the tools and techniques that another organization has come up with, which would be *jumping to solutions*. You can and should start with some already-existing basics, like in sports and music, but then it's an unavoidable iterative process of trial and adjustment. The goal of this Handbook is to show you how to start developing and building your own 21st Century management approach by practicing a set of fundamental Kata.

This Handbook utilizes a well-proven set of basic Kata to practice every day. You could call them "**Starter Kata.**" They come from the Toyota Kata research and have been used for practice at thousands of organizations around the world. Begin with the starter Kata and then, as you gain skill and understanding, add to or adjust them to fit your situation as needed. Then you'll be developing your own way.

Best wishes for your practicing!

Mike Rother

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# PREFACE

# How Do You Manage for Improvement, Adaptiveness and Innovation?



- How can we best prepare an organization for the future when we don't know what the future will bring?
- How can we get more comfortable with challenging goals and successfuly navigate the unpredictable zone between here and there?
- How do you develop the skill of everyone in the organization to establish strategically-aligned goals and work toward them effectively?
- How do you sustain this?

**This Handbook gives you a way to answer these questions. Use the approach and practice techniques presented here to develop skills and mindset that make your organization more capable of achieving goals and meeting challenges.**

# DELIBERATELY DEVELOPING A TEAM'S SKILL AND AN ORGANIZATION'S CULTURE

**This Handbook is about a scientific pattern *combined* with routines of deliberate practice. Practicing the routines in this Handbook makes you and your team better at achieving goals and meeting challenges, and thus at improving, adapting and innovating.**



## Consider the following:

- **The people in every organization have unconscious habits of thinking and acting. Those habits constitute the basis of the organization's culture.**
- **All managers are teachers, whether consciously or not. With their everyday words and actions managers teach their people a mindset and approach, which determines the organization's capability.**

## For these reasons it makes sense to ask:

***--> What pattern of thought and action do we want our managers to be teaching?***

***--> What routines should we be practicing and reinforcing every day in our organization to make that pattern a reality?***

# IT'S ABOUT

**(1) 'Pattern'** a dance

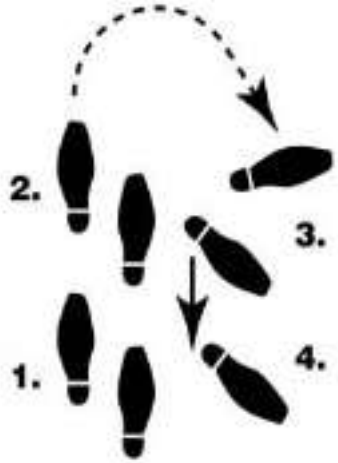



**(2) 'Practice Routine'** dance steps

**This Handbook is about developing new skills and habits the same way that athletes and musicians do. Think of this as a handbook of dance steps for beginners to practice.**



**(1) The overall pattern (the dance or skill you're trying to learn or teach) called the "Improvement Kata." It's a systematic, scientific way of thinking and acting that can be applied to any goal. The objective is to have everyone in your organization be able to dance this pattern smoothly and confidently, in your organization's own style.**




**(2) But just knowing the pattern of a dance is not enough for being able to dance. You need to practice. So this Handbook describes structured practice routines (the dance steps) for beginners to start with so they can learn the Improvement Kata pattern.**

**This Handbook also describes a routine for teaching the IK pattern, called the "Coaching Kata."**

**A Pattern or Model of Scientific Thinking**

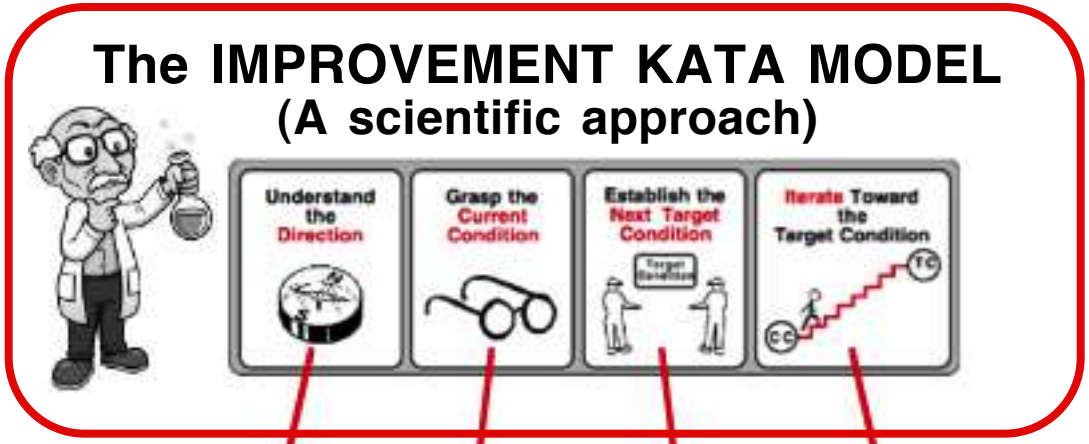


**Making it Real Through Practice**



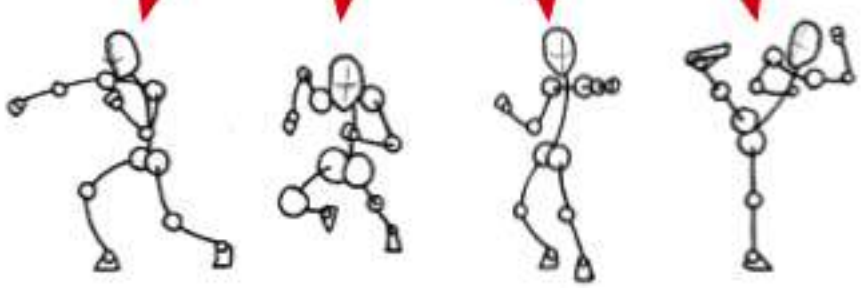
**Transforming our thinking and acting**

# WHAT'S IN PARTS I, II & III OF THIS HANDBOOK



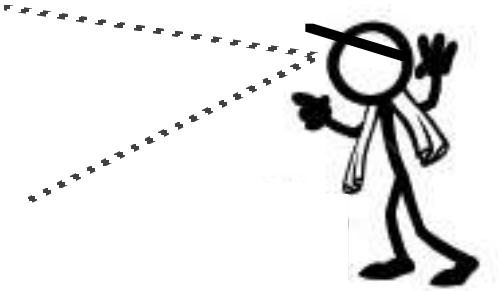

**This is the overall pattern of thinking and acting we're trying to learn. It's a universal pattern for achieving tough goals, which can be applied in all walks of life.**

**(HANDBOOK PART I)**



**There are PRACTICE ROUTINES for each step of the Improvement Kata. These are the Starter Kata for the Learner.**

**(HANDBOOK PART II)**



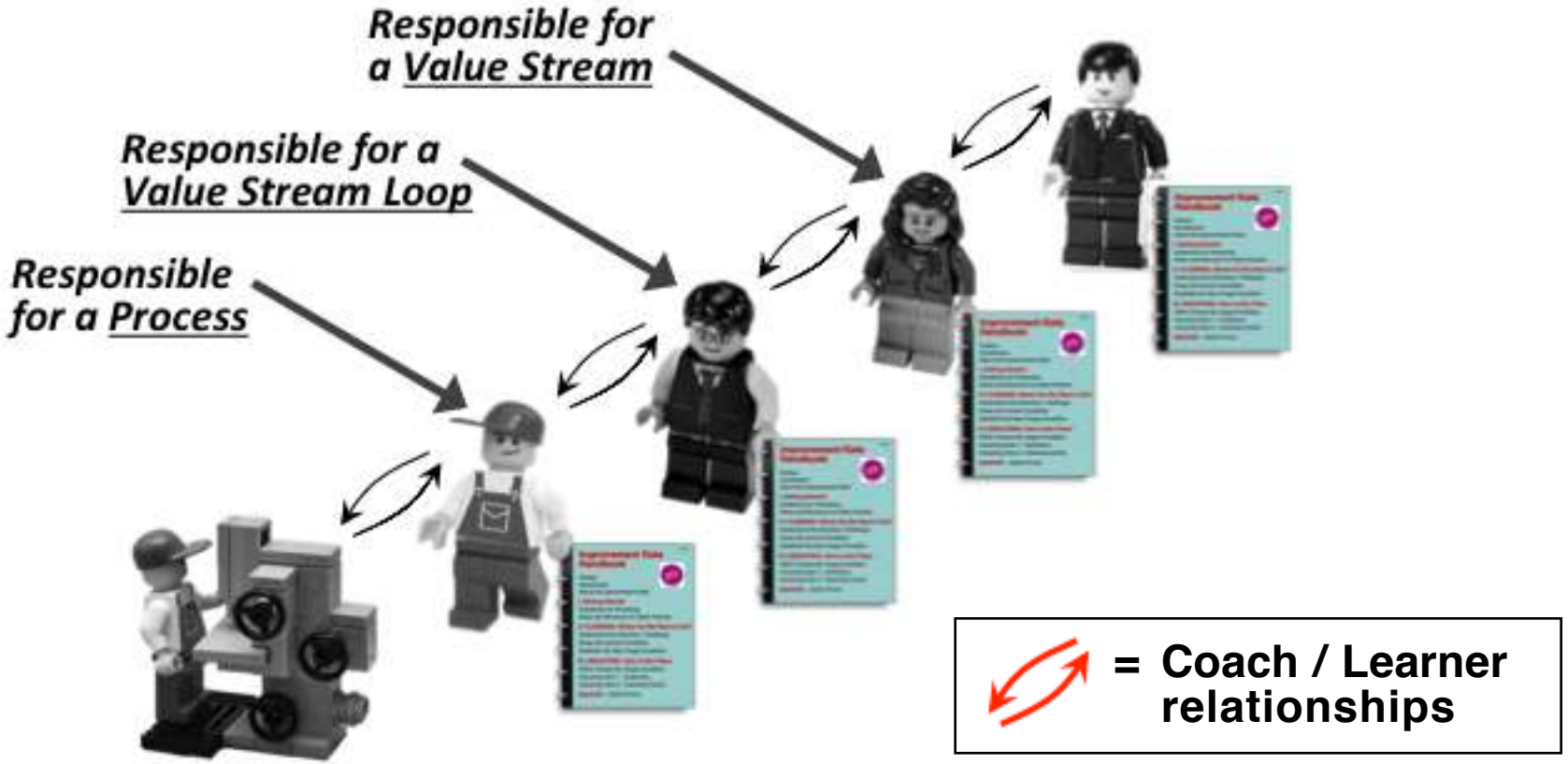
**The COACHING KATA is a practice routine for teaching the Improvement Kata pattern. It's the Starter Kata for the Coach.**

**(HANDBOOK PART III)**

# THE IK PATTERN IS A 'META-SKILL'

## The Handbook's instructions apply at every level in an organization

**Every Coach and Learner uses the same Handbook because everyone in the organization can utilize the same scientific pattern of thinking and acting, just as scientists do. It's a foundational *meta skill*. Each level practices the same fundamental routines, although the content of what's being worked on and, ultimately, the style differs from area to area and level to level.**



# WHAT THIS HANDBOOK SHOWS YOU

## How to apply, practice and teach the Improvement Kata pattern so that it becomes a habit of thinking and acting

- How to use and operationalize a scientific pattern, which is a foundation of modern management.
- How to use the Improvement Kata practice routines on real processes to improve, adapt and innovate, by walking you through them step-by-step.
- How to operate a daily Coach <--> Learner teaching routine that integrates practice of the Improvement Kata pattern into daily work and, over time, into people's mindset and a team or organization's culture.
- How to get more comfortable with the uncertain path that's inherent in striving for challenging goals.
- How to align team efforts and make any team successful in achieving goals and meeting challenges.
- How to sustain improvement, adaptiveness and innovation by integrating it into daily management.



# WHO THIS HANDBOOK IS FOR




**One user is the Learner, i.e., anyone who wants to become proficient in a scientific way of working and thinking, through practice.**

**The other user is the Coach, i.e., anyone who manages people. Once you've internalized the Improvement Kata pattern yourself, this book helps you teach the pattern to others. The goal is to embed the Improvement Kata into the daily work of managers, who are the day-to-day teachers in any organization.**

Preface

Introduction

## I. GETTING STARTED

- The Improvement Kata Pattern
- Guidelines for Practicing
- Roles and Structure for Daily Practice

## II. PRACTICE ROUTINES FOR THE IK

- **Step 1: Understand the Direction / Challenge**
- **Step 2: Grasp the Current Condition**
  (The Improvement Kata Process Analysis)
- **Step 3: Establish the Next Target Condition**
- **Step 4: Iterate Toward the Target Condition**

## III. THE COACHING KATA

- **Routines & Guidelines for IK Coaches**
- **How to do a Coaching Cycle**

Appendix: Forms for Practicing



**The 4 Chapters on how to practice the IMPROVEMENT KATA speak to anyone who wants to be a LEARNER of the Improvement Kata pattern.**

**The 2 Chapters about the COACHING KATA speak to the COACH who's teaching the Improvement Kata pattern to a Learner.**

# TWO PURPOSES FOR THIS HANDBOOK

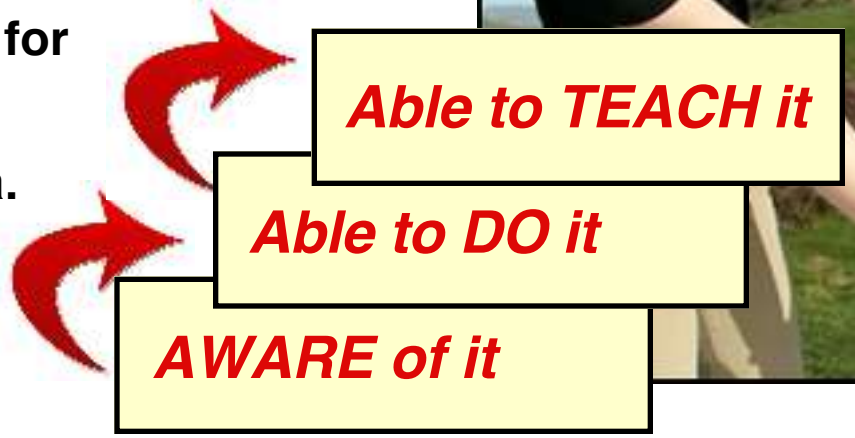
## *1) A Practice Guide:*

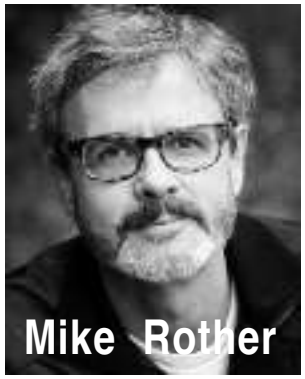
**To as quickly and effectively as possible make you proficient enough to coach the Improvement Kata pattern, enabling you to teach and deploy it in your organization with minimal reliance on outside expertise.**



## 2) *An Application Guide:*

**To be a reference for how to apply the pattern of the Improvement Kata.**




**My goal in developing this Improvement Kata Handbook is to evolve, simplify and codify the Improvement Kata and Coaching Kata practice routines to the point that they can be used by anyone; to show that scientific thinking is a life skill that can be practiced and learned by everyone.**

# Contributors

**I'm grateful to the following colleagues, who are fellow experimenters in working to practice and evolve the routines and guidelines in this Handbook.**

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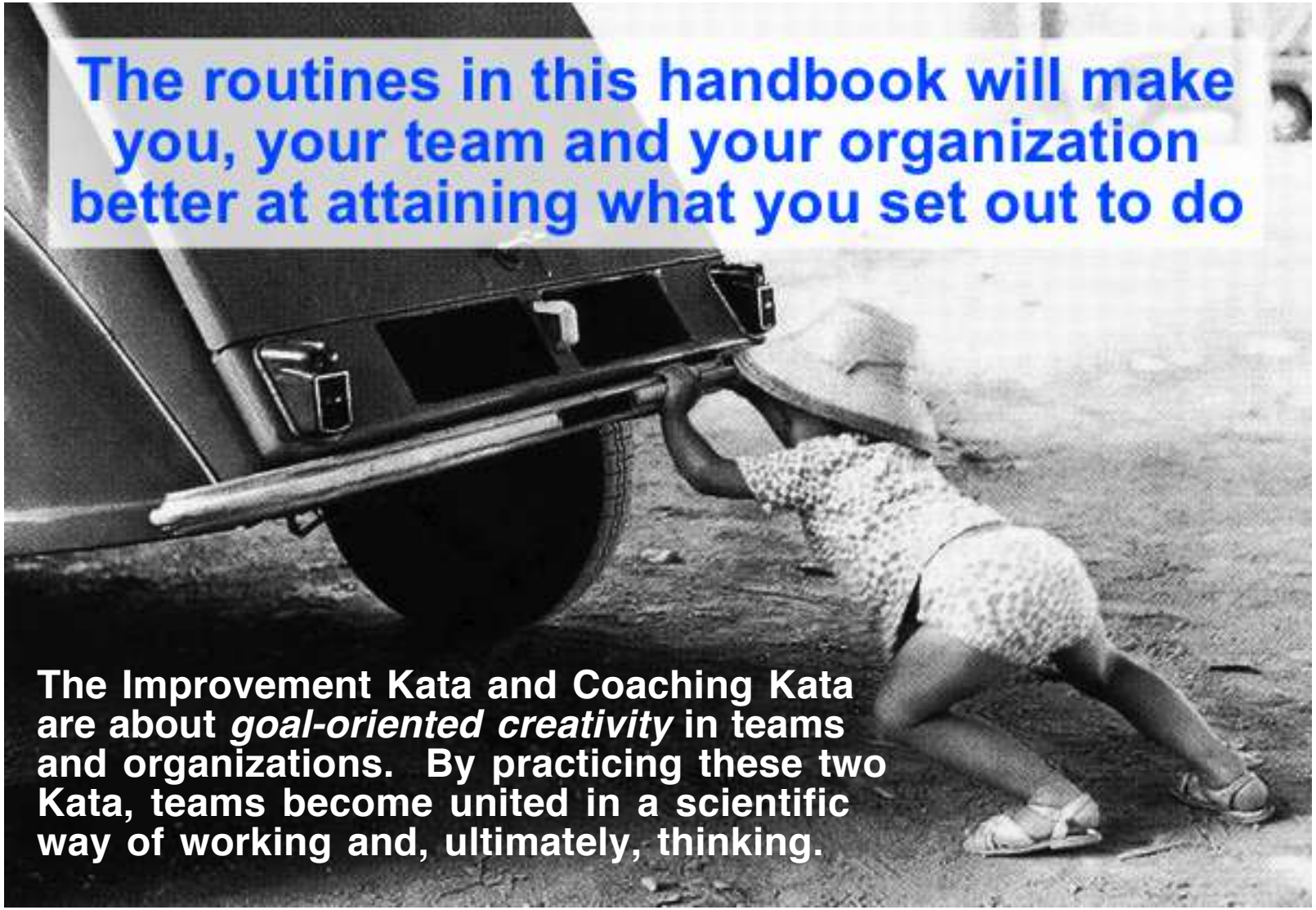
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# INTRODUCTION






# This Handbook is about practicing a way of operating... to develop a way of *thinking*

# CREATE AN ARMY OF PROBLEM SOLVERS IN YOUR ORGANIZATION



## Who are able to handle the uncharted path to challenging goals

**Deliberate practice using simple, structured beginner routines (Kata) is not new.**

**Likewise, the pattern of the IK model is similar to other models of creative / scientific human endeavor such as systems thinking, critical thinking, design thinking, creative thinking, solution focused practice, preferred futuring, skills of inquiry, evidence-based learning and so on.**

**What is unique in this Handbook is *combining* those two things.**

**This Handbook gives you Starter Kata for each of the four steps of the Improvement Kata and for teaching (Coaching) IK practice. It shows you how to use these routines, so you can then evolve and build on them in ways that suit your organization.**

# CONDITIONS AROUND US ARE COMPLEX & DYNAMIC
## (Interconnected and Unpredictable)

**The ability to meet challenges and improve -- to learn, adapt, grow and evolve -- is a critical task in a complex, changeable world.**

- **Conditions are always changing**
- **It's impossible to know how they will develop**
- **If you fall behind it can be difficult to catch up**



**We can train ourselves to execute successfully in this environment.**

**There's a kata for that!**

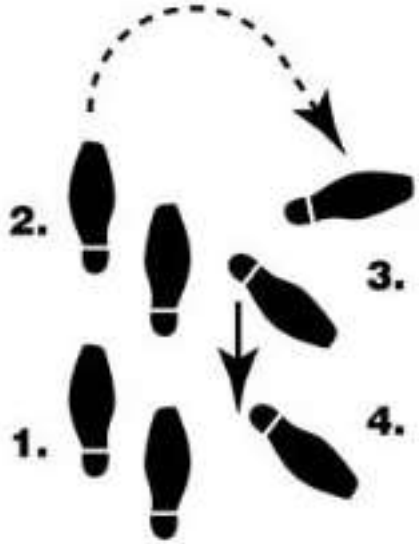
**An organization should be both consistent enough to deliver what it promises, and adaptive enough to keep moving forward. Sooner or later things change, so part of the strategy for an organization that wishes to survive long-term is to build capability for continuously improving and evolving.**

**However, since it's impossible to know what products and services will be important in the future, the capabilities you teach should apply to any situation. This Handbook is about exactly this kind of meta capability, and how to build it in your organization.**

# WHAT IS A KATA? IT'S A PRACTICE ROUTINE!

**It's how you start. A Kata is a structured routine you practice deliberately as a beginner*, so its pattern becomes a new habit.**








**Through practicing, the pattern of a Kata becomes second nature; done with little conscious attention. The goal is not the Kata itself, which gets used less and less as you become more and more proficient, but the habits of thinking & acting that practicing the Kata leaves behind.**

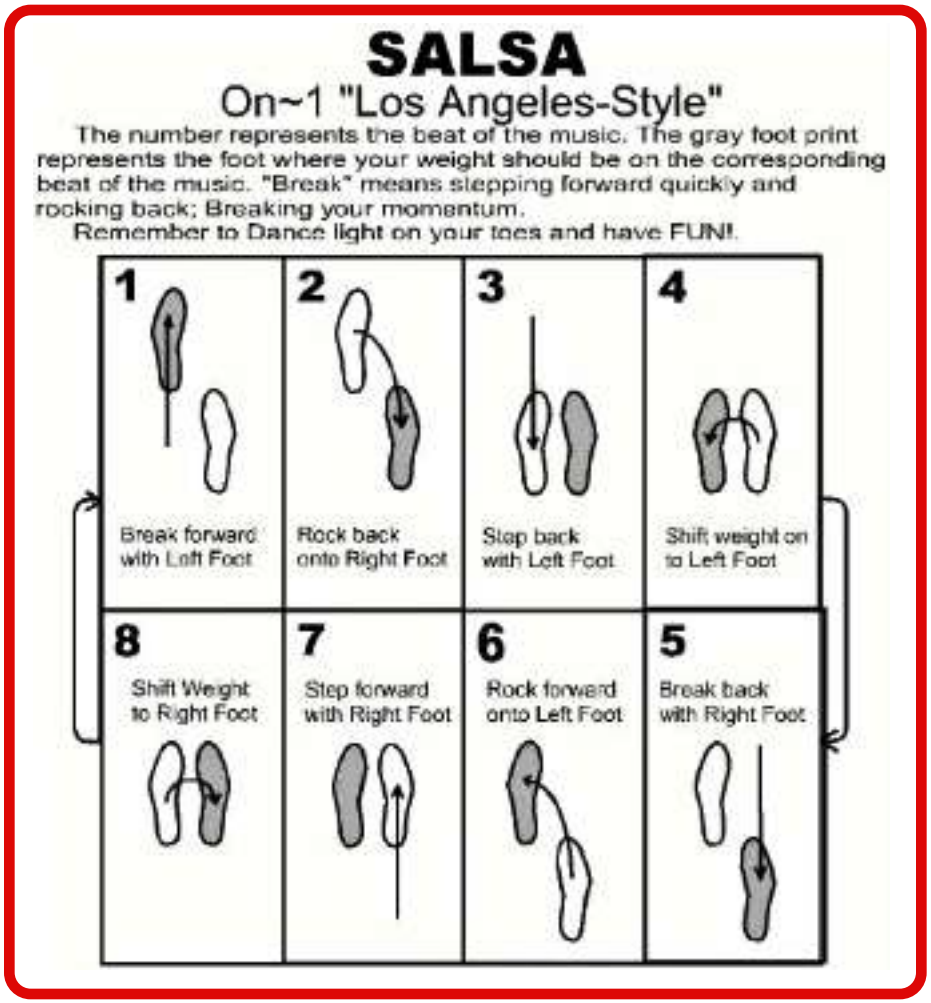
**An example is practicing to learn to drive a car. Once you can drive you don't think much anymore about how to use the car's controls and instead can focus your attention on the situational aspects of navigating the road.**



***Whenever you start learning a new skill you're a beginner**

**Why does a Kata matter? It's a way of transferring skills and developing mindset. Kata help translate concepts into practical reality.**

# THIS IS AN EXAMPLE OF A KATA




**It's a structured practice routine -- an aid -- for beginning to learn a targeted new skill.**

**At the start of your practice you follow the kata exactly. As your skill develops you don't need the kata so much anymore.**

**The goal is the skill, not the kata.**

**Whenever you want to train a beginner, or want to refresh some basics, you go back to the kata.**

**Someone who has developed proficiency with the target skill no longer uses the kata aid so frequently and rigidly. But you first have to get to that skill level, usually by practicing deliberately.**

# WHAT PATTERN (KATA) SHOULD YOU TEACH & PRACTICE IN YOUR TEAM OR ORGANZATION?






**--> It should be practiced in normal daily work throughout the organization.**

**To lead to the development of new skills, mindset and culture the pattern should be an integral part of how work is normally done, not separate.**

**--> It should be suitable for any goal or problem (a *Meta Skill*).**

**Since we don't know what the future will bring, the pattern we practice should be content-neutral; i.e., applicable in any situation. The form that our behavior and thinking should take is prescribed, but the content is not.**

**--> It should be based on the scientific way of working.**

**Since human perception is biased, the pattern should rely on facts and data, not our impressions.**

**--> It should include detailed practice routines for beginners.**

**Concepts or coarse steps alone don't change mindset and behavior.**

# THE IMPROVEMENT KATA FITS THESE REQUIREMENTS PERFECTLY

**DEFINITION**

**The IMPROVEMENT KATA is a four-step pattern that models a scientific way of thinking and acting so that, with practice, anyone can learn it.**

**The Improvement Kata is a universal, repeatable pattern for improving, adapting and innovating -- for achieving challenging objectives in complex situations -- by working systematically and scientifically. It uses systematic, scientific experimentation to strive for successive target conditions on the way to a longer-term challenge.**

**The Improvement Kata models the human creative process; i.e., what a person or team that is being creative does. It's a framework of thinking and acting that allows teams to face evolution and change with a positive sense of *we can do it*.**

**The purpose of practicing the Improvement Kata pattern is to make scientific thinking and working habitual. This helps teams and organizations be more effective because it allows them to direct their conscious attention and ingenuity to the situational details that require deliberate thought, yet to still operate scientifically.**




# WHAT IS SCIENTIFIC THINKING?



**Scientific thinking is the intentional coordination of theory and evidence, whereby we encounter new information, interpret it and, if warranted, revise our understanding accordingly. This pattern is in contrast to relying on already-held beliefs to explain causality. Scientific thinking gives us the ability to look beyond our preconceptions and see the world and ourselves in a truer light.**

**What's important about scientific thinking is not just whether we decide to revise beliefs based on new information, but that practicing it helps us reshape *how* we think... moving away from relying on subconscious biases and an artificial sense of certainty. Happily, all humans are equipped to think about thinking, which is called "metacognition," and are able to change how they think through personal experience (practice)!**

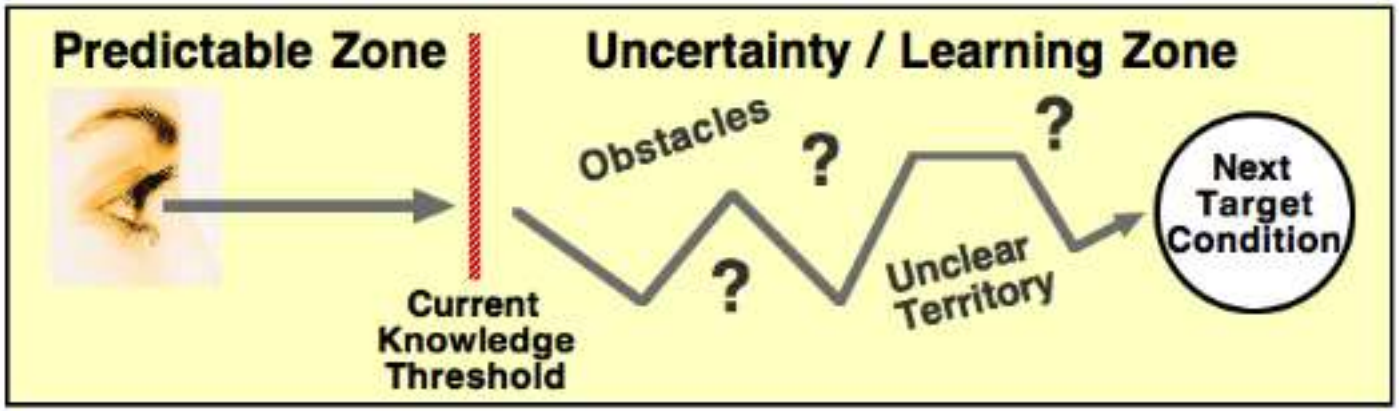
**A main premise of this Handbook is that scientific thinking and creativity are by no means limited to professional scientists and artists. They are essential and widely-applicable life skills that anyone can develop by practicing the Improvement Kata pattern.**

# THE IMPROVEMENT KATA IS ABOUT THE *"THRESHOLD OF KNOWLEDGE"*

**The Threshold of Knowledge is the point at which you have no facts and data and start guessing. The Improvement Kata is a systematic, scientific routine for groups of people to successfully navigate beyond the threshold of knowledge.**

**Reality is complex and dynamic, which means the way forward can't be fully determined in advance. Reaching a challenging goal involves iteration and experimentation that's aimed at a desired condition (which we don't yet know exactly how we will achieve.) We don't know exactly what's going to happen and no plan will cover everything.**

**But that's OK, because we can practice and learn a pattern of scientific thinking that helps us to successfully navigate that territory. Simply put, practicing the Improvement Kata pattern makes you more able to acknowledge and be comfortable with Knowledge Thresholds.**



# THE COACHING KATA HELPS YOU TEACH THE IMPROVEMENT KATA

**DEFINITION**

**The COACHING KATA is a routine for teaching the Improvement Kata pattern in daily work.**

**The Coaching Kata is a set of teaching routines for facilitating Improvement Kata skill development in daily work. The Coaching Kata gives managers and supervisors a standardized training approach and helps them develop effective coaching habits.**

**The purpose of the Coaching Kata is to teach the Improvement Kata pattern through deliberate practice, while using real-world goals and problems.**



# THE IMPROVEMENT KATA & COACHING KATA INCLUDE PRACTICE ROUTINES




**These kata not only model a way of working, but they also have structured practice routines for beginners, to make their pattern teachable.**

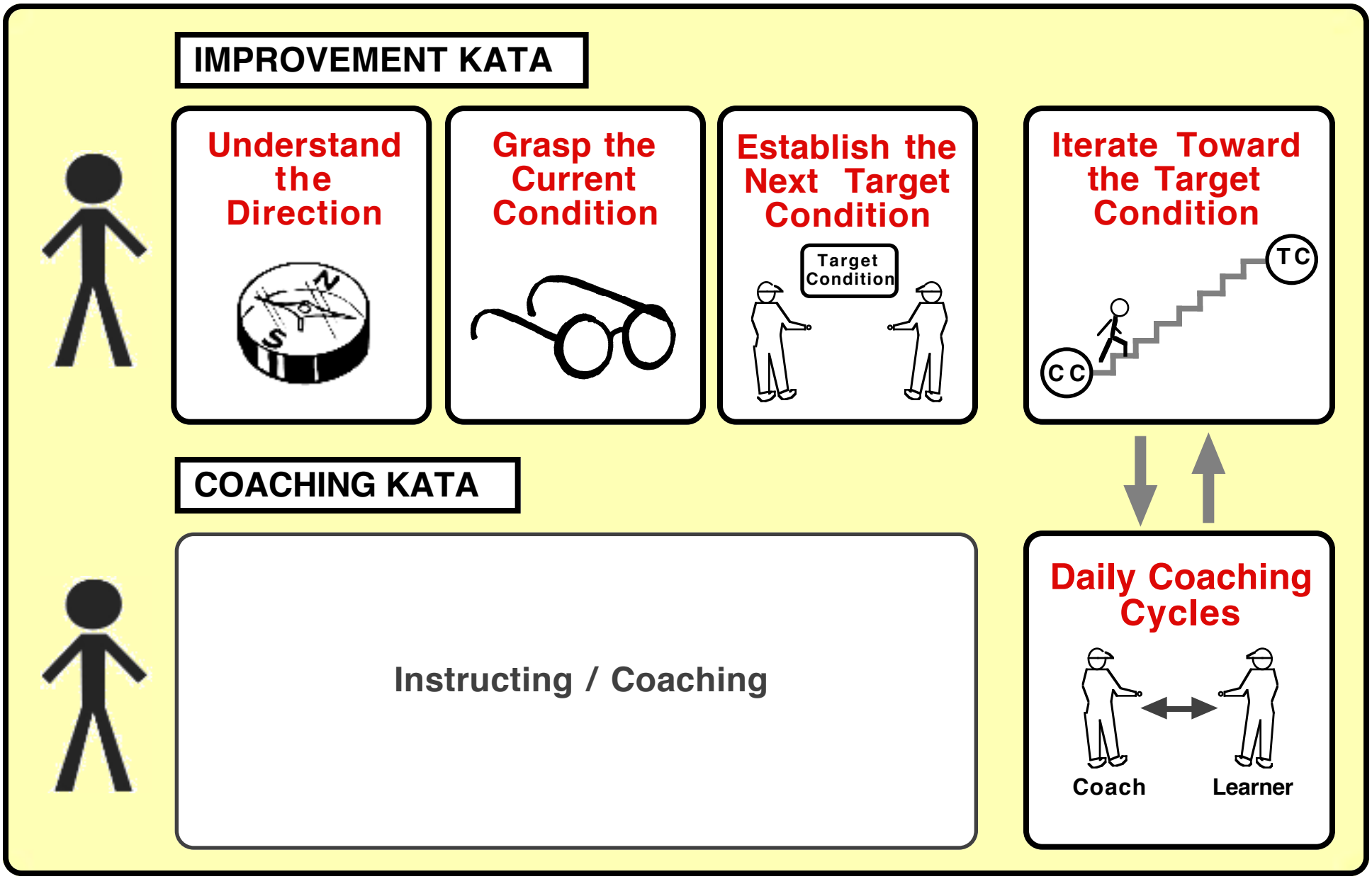
**That second element is what makes the Improvement Kata and Coaching Kata different from other management concepts. Those concepts may be correct, but they lack a way of operationalizing them through deliberate, learn-by-doing practice.**

**Knowing a bunch of things about the Improvement Kata and Coaching Kata is not the answer. What's important is internalizing their patterns so you can then apply them in a variety of unrelated situations.**

**This Handbook shows you how to practice and internalize the Improvement Kata and Coaching Kata patterns in everyday work life. The pattern of the Improvement Kata can be taught to anyone, but to learn it you have to practice it.**

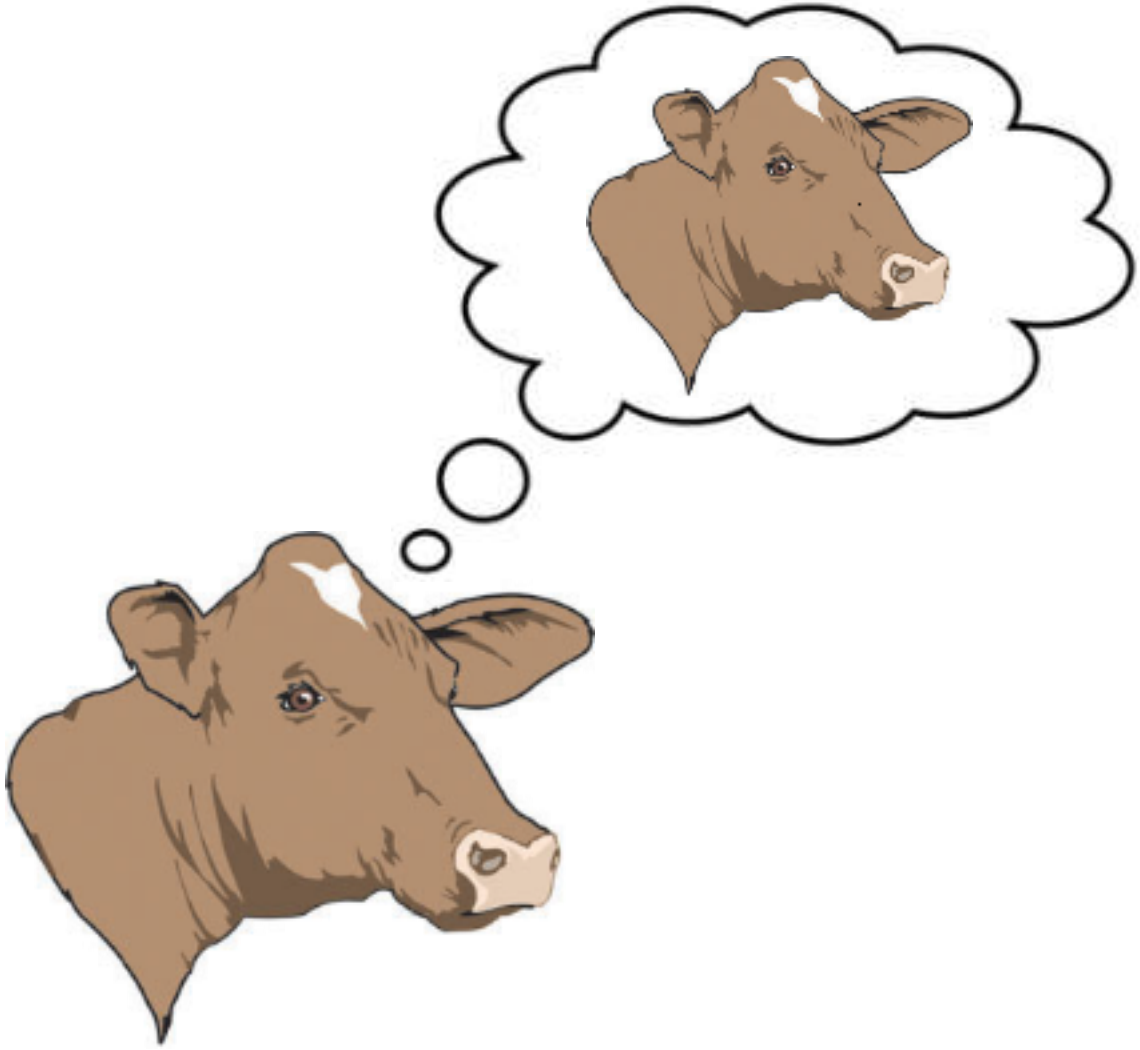
# THE TWO KATA

## This Handbook provides practice details for the following elements



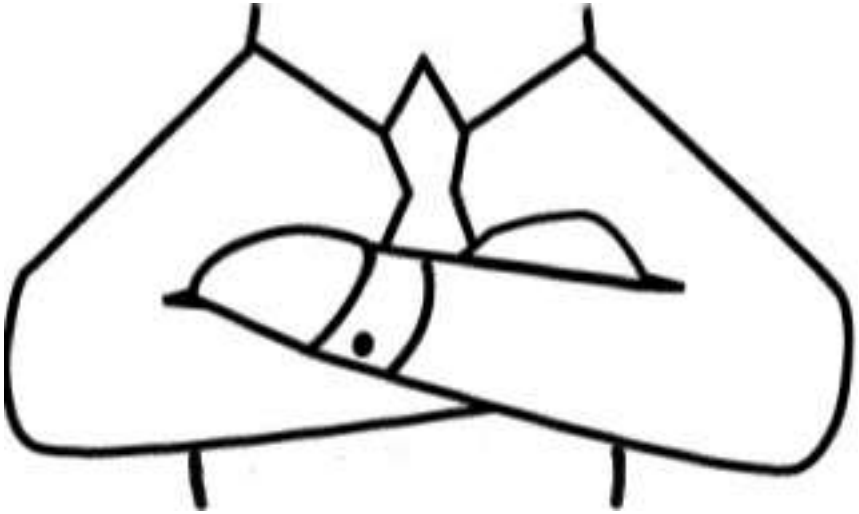
# LET'S START WITH A BIT OF *METACOGNITION* *

*** (A big word for *thinking about how you think*)**



# 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.**

**Our brain creates habits for efficiency; to free up capacity for when deliberate decision making is necessary. Unconscious thinking enables you to get through the day by taking care of routine decisions with minimum fuss.**



# OUR UNCONSCIOUS HABITS ARE FAST & POWERFUL

**Our brain avoids conscious, deliberate thinking if it can, because that kind of processing consumes more resources and has a slow reaction time. Unconscious thinking is fast and instinctive, while deliberate thinking is slow and intentional.**

**The subconscious is powerful. It can process billions of bits of information per second, while our deliberate mind can only process a few thousand per second.**







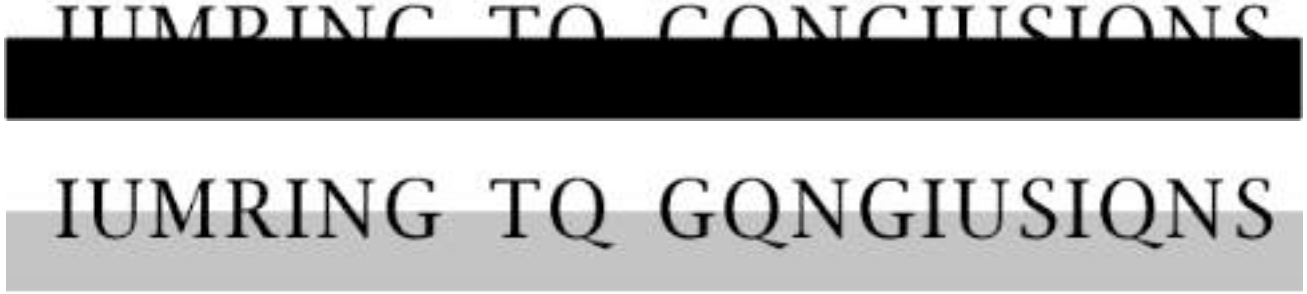


***However, a pitfall of many habits is that the past experiences that created them do not necessarily represent future situations***




# WE HAVE MENTAL STUMBLING BLOCKS!

**We have a natural, subconscious tendency to quickly draw conclusions based on cognitive factors rather than evidence**





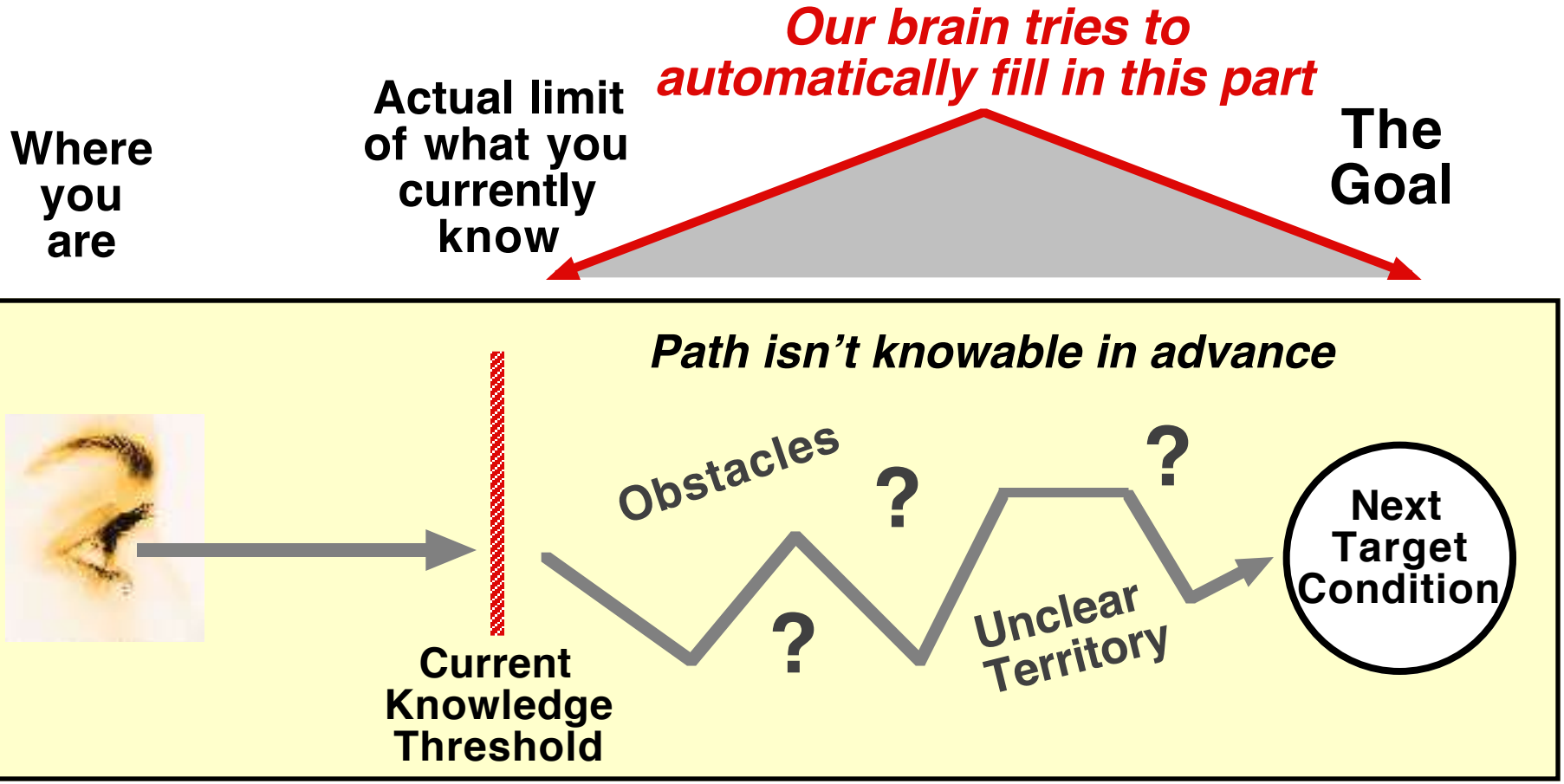

**Our automatic cognitive mechanisms serve us well in many circumstances where fast judgement is essential for survival. But in other situations they can lead to errors called *cognitive biases and logical fallicies*.**

**To navigate the world our brain instantly tries to create a coherent interpretation of reality from the inputs it receives, but it hides from us the inferences that it is making. You could call this aspect of our brains a *"belief engine driven by confirmation bias."***

**We have a blind spot when it comes to our habits of mind. Since our unconscious responses are automatic, hidden from us, and potentially biased they may not always lead us where we would like to go.**

# EXAMPLE: A NATURAL MENTAL SHORTCUT THAT THE IMPROVEMENT KATA COUNTERACTS

**The Threshold of Knowledge is difficult to spot because we don't realize our brain is automatically filling in our knowledge gaps. We often try to determine our path in advance through logic and debate, but that's not effective in complex, dynamic conditions. Once you hit a knowledge threshold you see further by conducting an experiment, not by deliberating.**

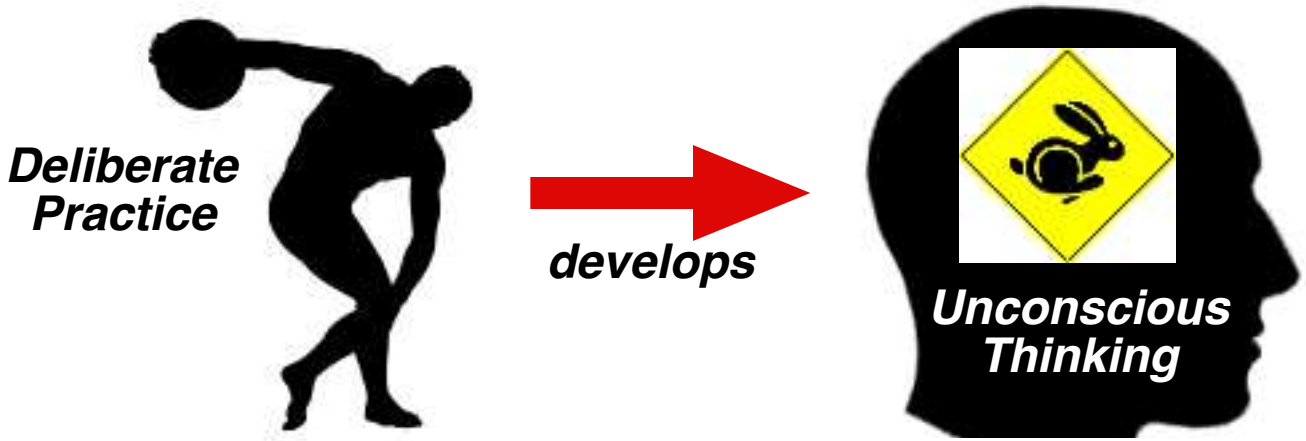


# FORTUNATELY, WE HAVE THE ABILITY TO CHANGE OUR AUTOPILOT

## Humans have the power to develop new habits. That's what the Improvement Kata & Coaching Kata are about.

**The brain is *plastic*, meaning it can be molded and formed, which allows you to learn throughout your lifetime. You can rewire your thinking and habits by deliberately (consciously) practicing a different behavior pattern.**

**Because initial practicing is deliberate it uses your slower conscious mind. But once the pattern you're practicing enters your unconscious it gets smoother and faster and becomes the normal, habitual way you operate.**




***With the right kind of practice this is a way you can change the culture of an organization, and even an entire society***

# MANAGERS ARE THE TEACHERS

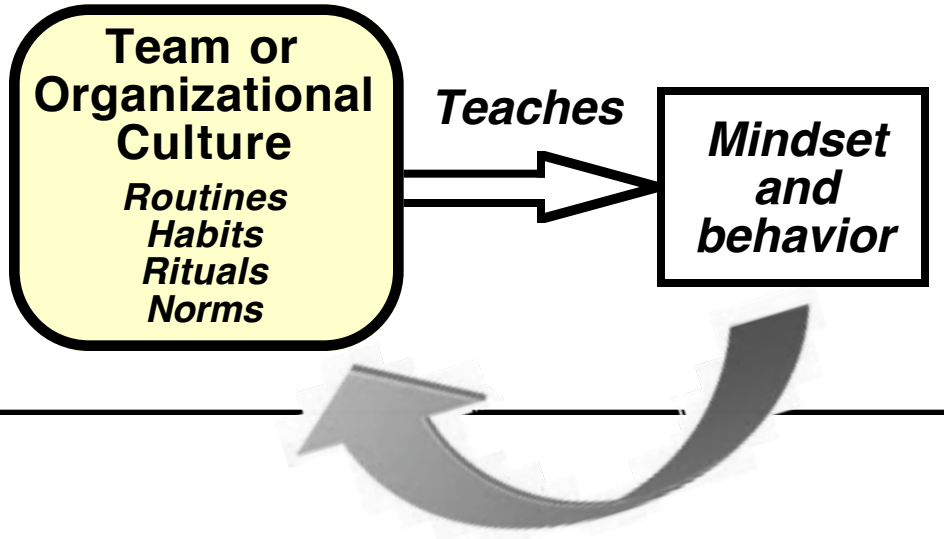
## Through its managers, a team or organization's culture perpetuates itself every day

**Note: This suggests that whatever new work habits you want to deliberately develop should over time be spread across the entire team or organization.**

**If you try to develop a new work habit only in certain areas or projects, the prevailing culture (current habits) will tend to dominate.**



**Managers automatically teach and reinforce the prevailing culture**



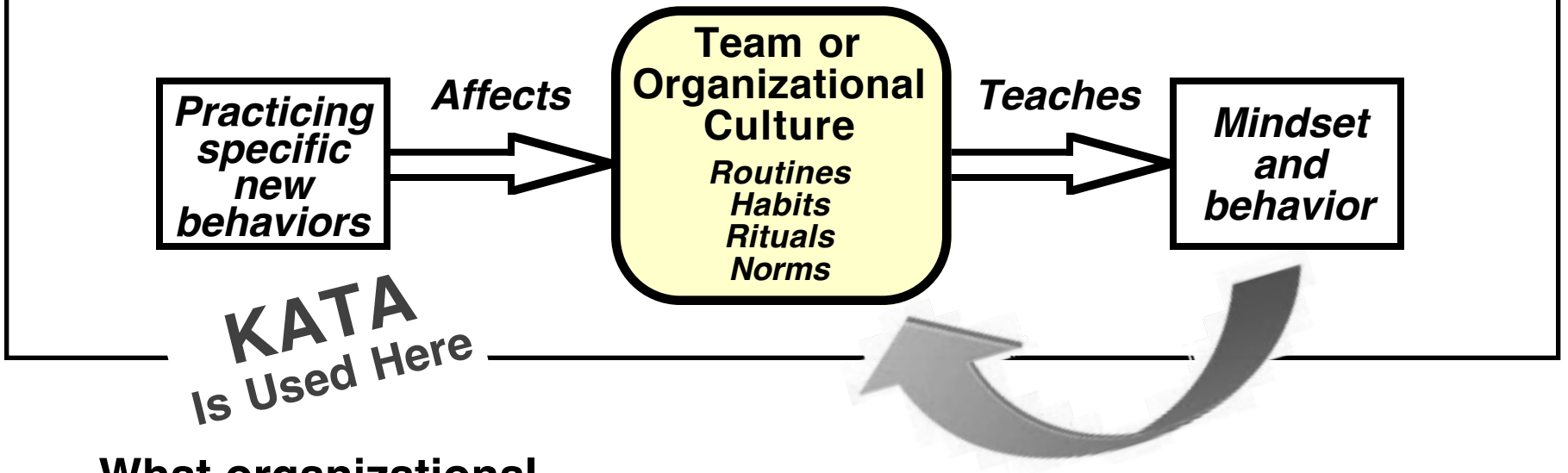

***Every time we do something, we're more likely to do it again***

# KATA GET PRACTICED IN ORDER TO SHAPE A NEW CULTURE





**Here the manager is a coach <u>deliberately</u> teaching a way of thinking & acting**




**What organizational culture, mindset and behavior do you <u>want</u>?**

**What do you <u>want</u> managers to be teaching / coaching?**

# WE CAN DEVELOP NEW SKILLS & MINDSET

**We may have grown up thinking all skill and behavior is innate -- that you're either born with it or not -- but that's not 100% correct.**

**Much of what happens in organizations and society is a consequence of the habits people acquire through practice, whether deliberately or by happenstance.**

***Constantly under construction***



# DEVELOPING EFFECTIVE HABITS FOR IMPROVEMENT, ADAPTIVENESS AND INNOVATION

***How can we be creative and effective in dynamic conditions if we tend to automatically apply old thinking & solutions to new situations?***

**The book *Toyota Kata* and the *Improvement Kata Handbook* are about working scientifically to counteract potentially harmful unconscious heuristics (rules-of-thumb), cognitive biases and logical fallicies that we automatically tend to use when dealing with problems, challenges and change.**

***Any team* can work scientifically to successfully adapt, achieve goals and meet challenges along uncertain paths with confidence, if they've practiced and learned a way of doing that.**

**The trick is to develop well-worn mental circuits not for solutions, but for a systematic, scientific way of *developing* solutions. That's what practicing the pattern of the Improvement Kata is about.**

**This content-free meta skill can then be applied to an endless number of situations. That's important because we don't know what challenges are coming in the future.**

# SUMMARY
# The Improvement Kata + the Coaching Kata = a Way of Managing

**This Handbook is about a different approach to management. The 20th Century management approach of predicting, planning and monitoring doesn't work well in complex, dynamic systems.**

**Although the Improvement Kata and Coaching Kata describe a routine for improvement, adaptation and innovation, they are actually a way of managing people every day. There's no separation between the Improvement Kata / Coaching Kata and managing.**

**The focus here is on building the Improvement Kata and Coaching Kata into the normal daily work of managers and supervisors. Managers and supervisors are thereby doing two things simultaneously... making their teams better at achieving goals as they guide their teams in working on achieving real goals.**

**Working on real goals is the environment for practicing, coaching and developing people that underlies this handbook. It's not about an extra training program. It's like free training.**



**Managers here have two interrelated goals:**

**--> Have their team achieve an objective using the Improvement Kata pattern**

**--> Develop skill within Learners, for applying the Improvement Kata pattern**

# THE IMPROVEMENT KATA / COACHING KATA DEFINITION OF *MANAGEMENT*

***"The systematic pursuit of desired conditions by utilizing human capabilities in a concerted way"***



# PART I: Getting Started

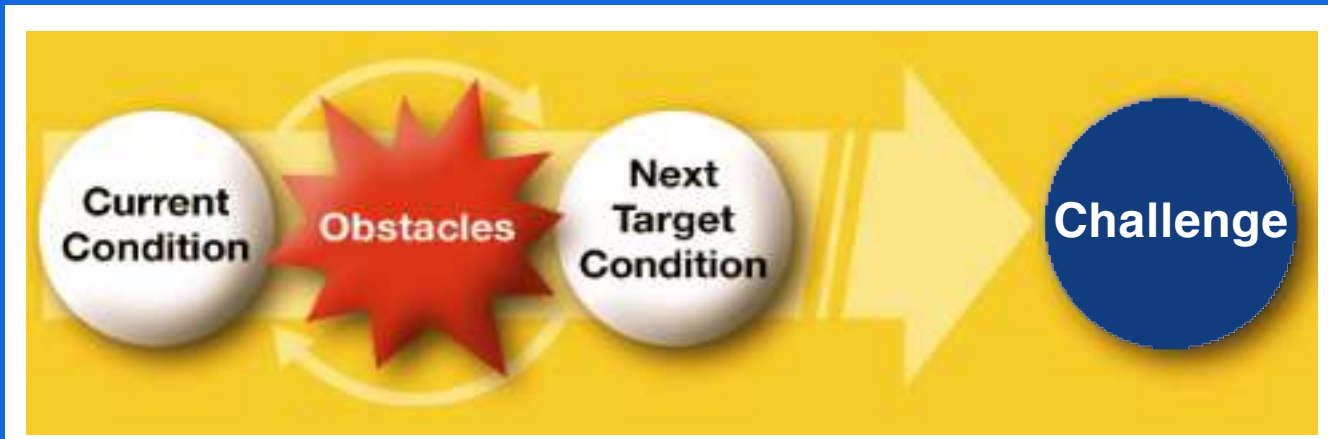
**Chapter 1. The Improvement Kata Pattern**

**Chapter 2. Guidelines for Practicing the Improvement Kata and Coaching Kata**

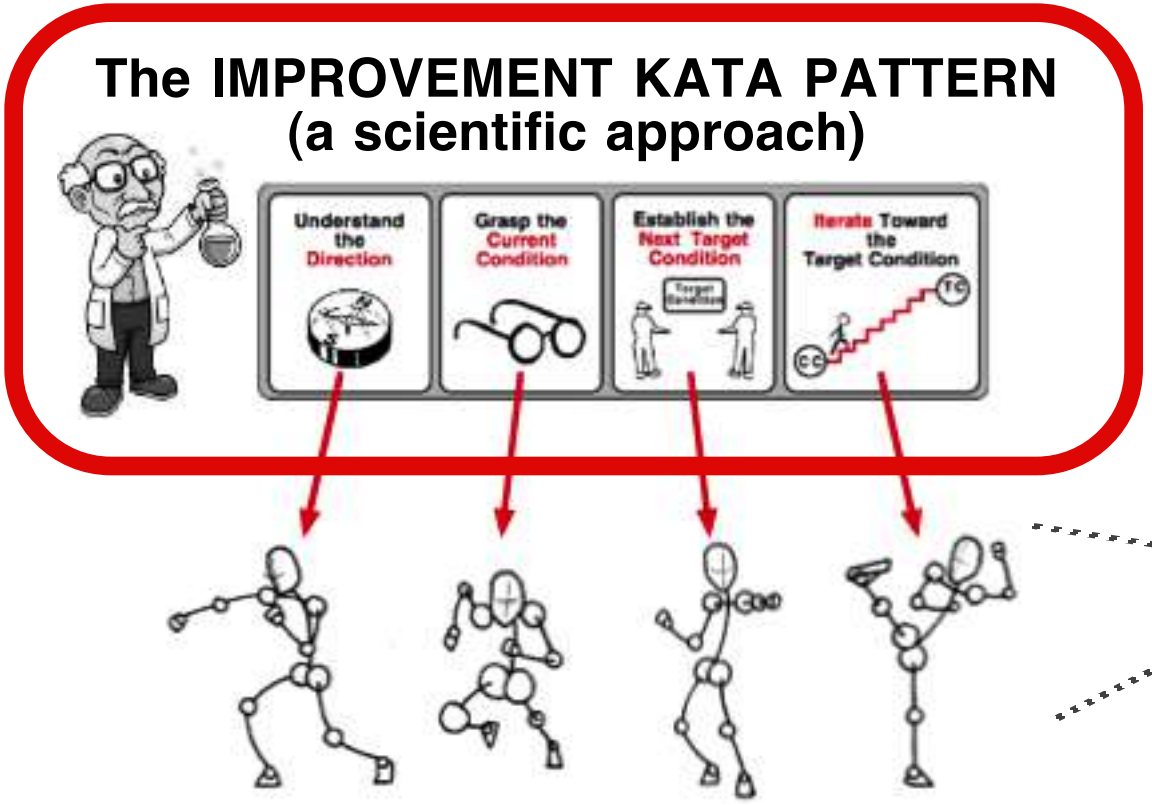
**Chapter 3. Roles and Structure for Daily Practice**

# Chapter 1

## THE IMPROVEMENT KATA PATTERN



# THIS CHAPTER GOES OVER THE IMPROVEMENT KATA MODEL




***This is the scientific <u>PATTERN</u> of thinking and acting we're trying to practice & learn***

**This Chapter**





**There are also starter practice routines for each step of the Improvement Kata, to help you learn its pattern of thinking and acting**

**The COACHING KATA is a starter practice routine, for learning how to teach the Improvement Kata pattern**

***The practice routines are covered in PART II and PART III of this Handbook***

# THE IMPROVEMENT KATA PATTERN MODELS THE CREATIVE PROCESS



**The Improvement Kata is a model of an effective, universal human pattern for improving, adapting and innovating.**

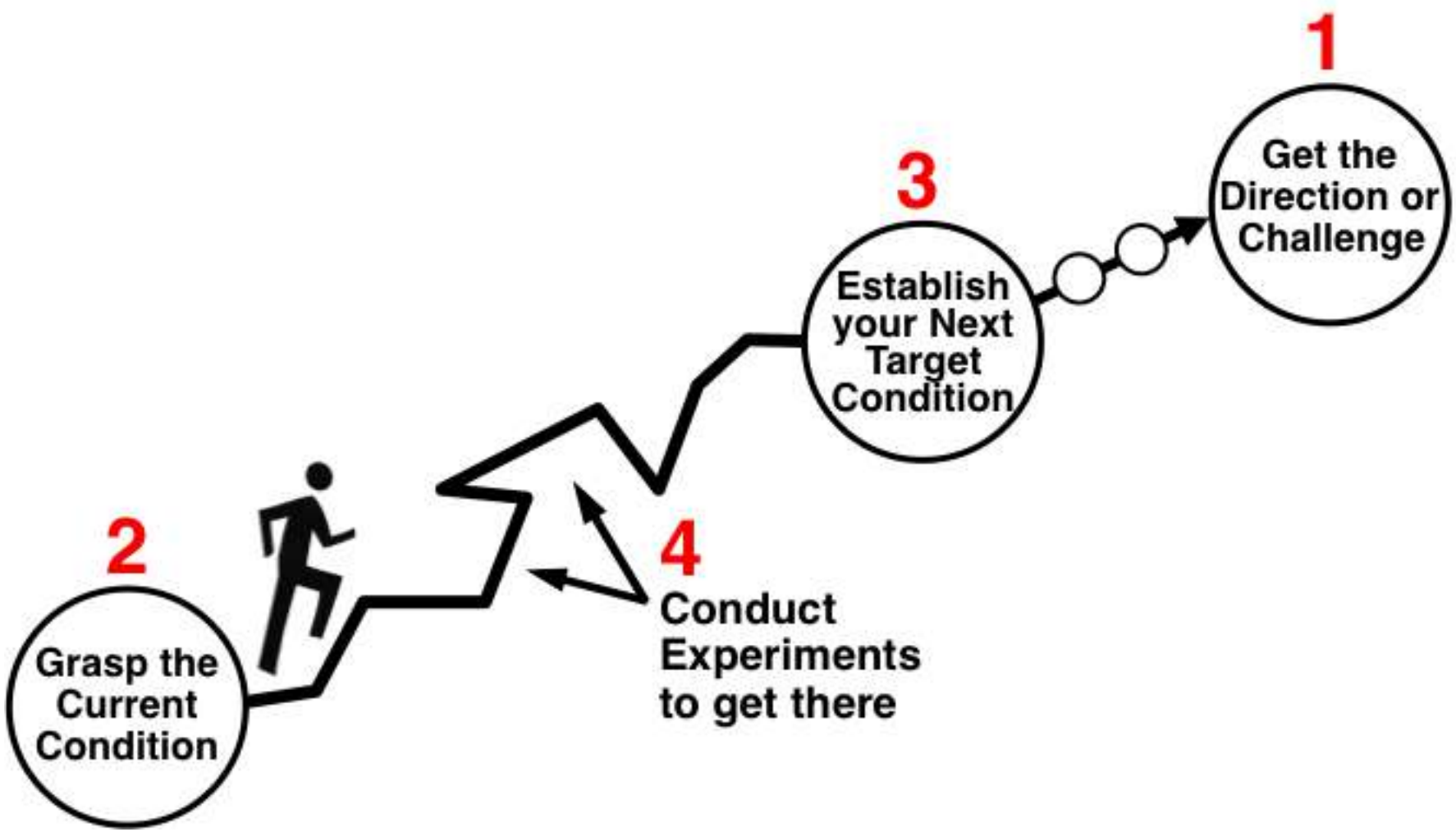
**The pattern represented by the Improvement Kata model has probably been around for as long as humans have been around.**

**Scientists & entrepreneurs use it every day.**

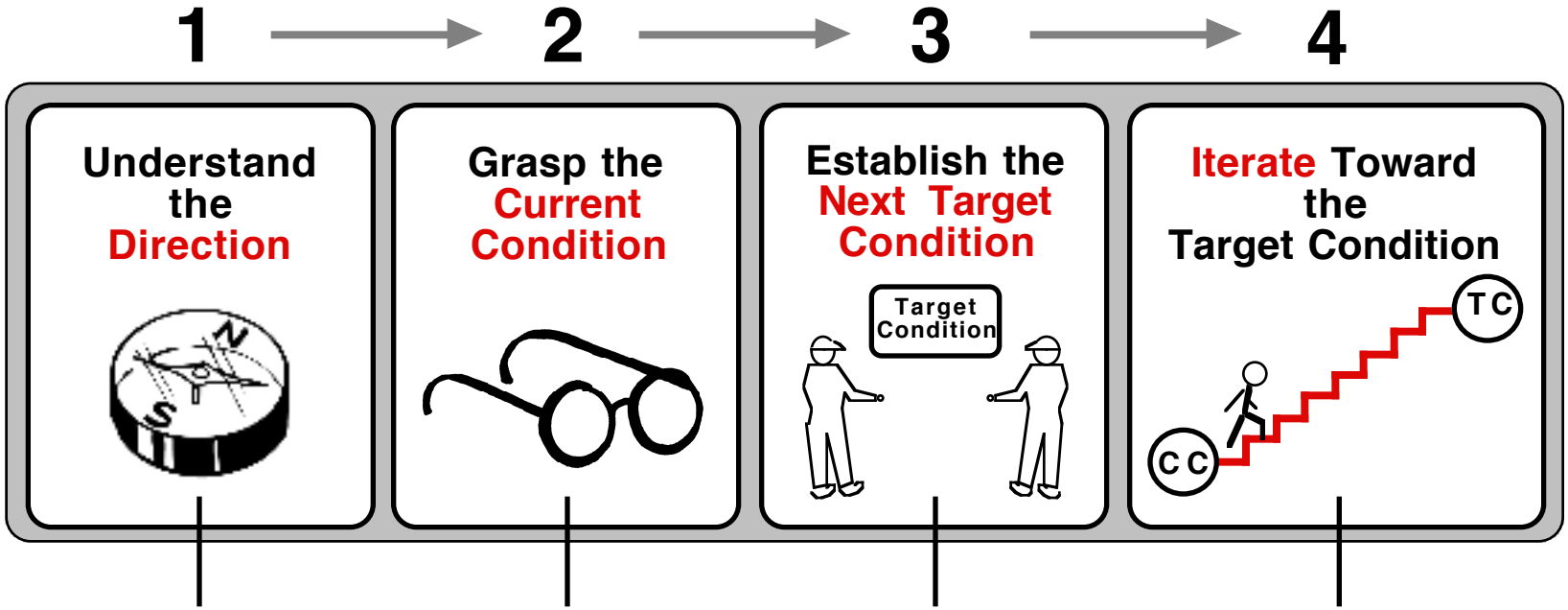
**However, this pattern is usually not the natural or default way that adults think and act. It's a learned skill.**

# THE IMPROVEMENT KATA PATTERN

**The Improvement Kata is a 4-step pattern you practice to make systematic, scientific, creative striving a habit, which makes you more effective at achieving challenging goals in complex, dynamic conditions**



# HERE ARE THE STEPS OF THE IMPROVEMENT KATA, IN SEQUENCE




**What challenge are we striving to meet?**

**What is the current way of operating?**

**What way of operating do we want to have next?**

**A step-by-step discovery process between where we are and where we want to be next.**

## HOW WE TEND TO REACT TO A PROBLEM OR HANDLE A GOAL

Whether in business, politics or daily life, we often think the best way is to **deliberate over the correct answers and arrive at a consensus**. (E.g., *"Let's have a meeting."*)

Unfortunately this unsystematic and unscientific approach is useful only in simple cases where the same path has been traveled before. It's not a good way of tapping our human learning capability and handling more complex and dynamic situations. It often leads to ineffective responses.

**Why the *deliberating* approach often fails in situations that are complex, dynamic or new:**

**--> We're debating from inside our current threshold of knowledge. You don't know what you don't yet know.**

**--> Our neural mechanisms are tuned to focus on the immediate surface aspects of situations.**

**--> Our brain tries to make sense of unfamiliar information by automatically filling in the blanks.**

**--> Complexity & unpredictability overwhelm our brain's processing resources.**

**--> We tend to state untested assumptions as facts.**



**IT'S UNSCIENTIFIC** Deliberating over answers beyond our knowledge threshold is flying blind. There's a grey zone between where you are and where you want to be next, and the path can't be deterimined in advance by logic and reason. You need to experiment. Scientists are constantly adding to knowledge.

**IT'S BIASED** We don't realize how extensively our unconscious predispositions, natural mental shortcuts and beliefs influence how we see, think and react. The brain is a great servant but a poor master.

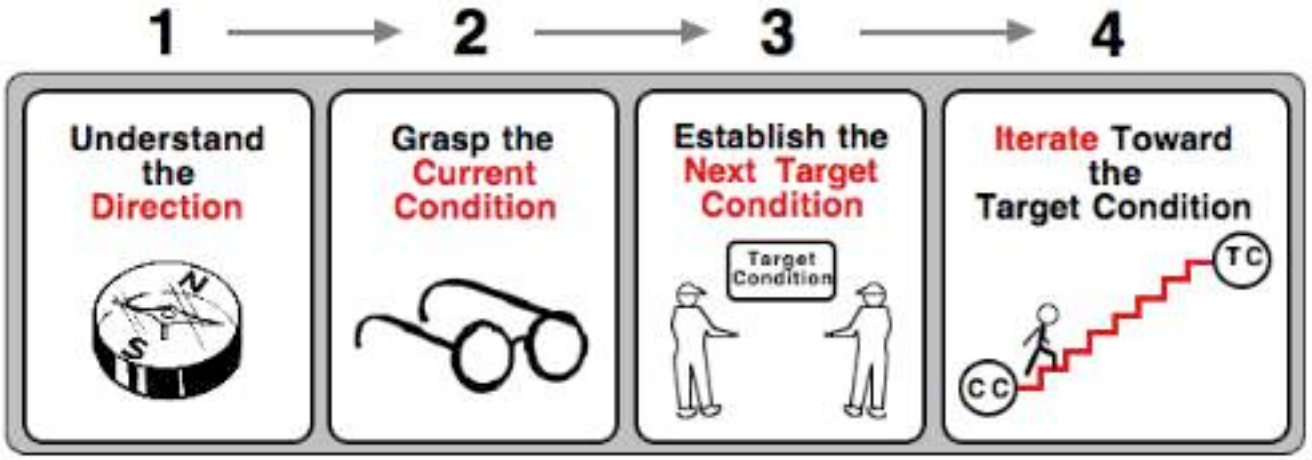
**IT'S UNSYSTEMATIC** Stabbing at problems in the hope that something will work is not a methodical procedure.

**IT'S UNCREATIVE** If you're just reacting to problems, rather than proactively striving for something, entropy wins.

***There is a more effective way of thinking and acting, but it takes practice!***



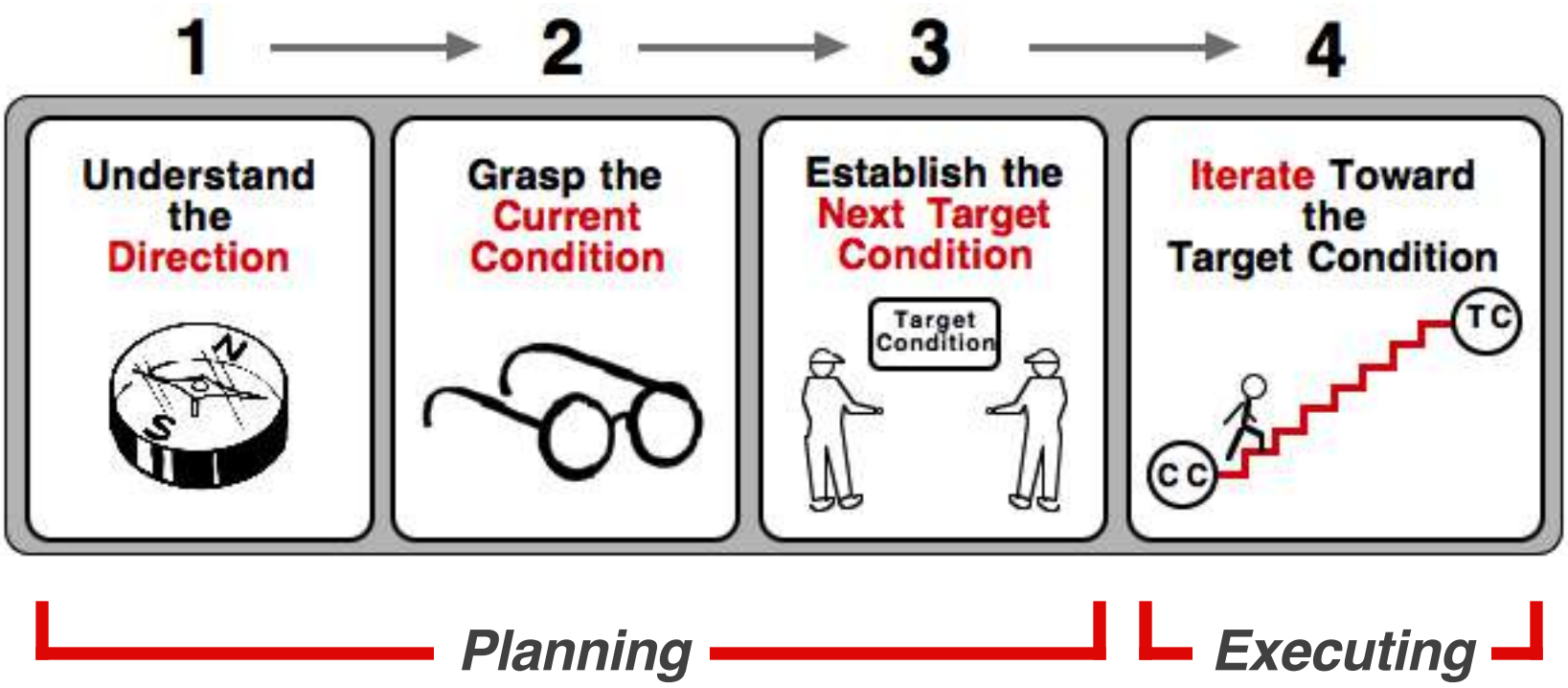
# Let's take a closer look at the four steps of the Improvement Kata pattern




*The illustrations on pages 13-18 and 20-21 are based on illustrations by Bill Costantino*

## THE FOUR-STEP IMPROVEMENT KATA PATTERN HAS TWO PHASES: A *PLANNING* PHASE AND AN *EXECUTING* PHASE

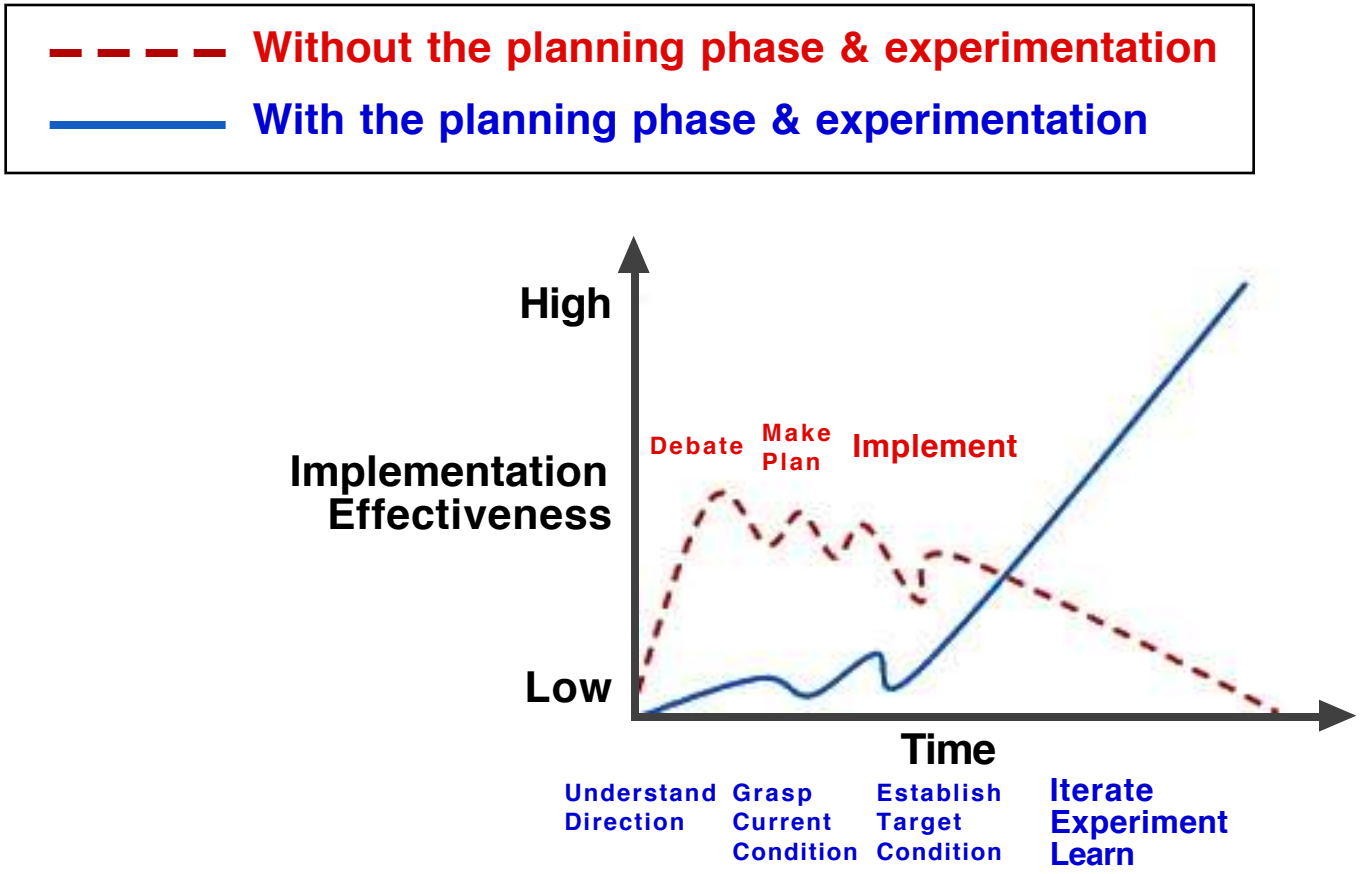
Note, however, that "planning" in this case is different from what you might think of as planning. It's not about just making an action plan. Gaining the perspective and understanding that the first three 'planning' steps of the Improvement Kata provide is a foundation for the 'executing' phase. One of the most common mistakes is trying to get into the Executing phase too soon; too hastily moving ahead based on preconceptions instead of taking time to analyze and learn more about the situation.



## THE PLANNING PHASE: GOING SLOW TO THEN BE FAST & FOCUSED

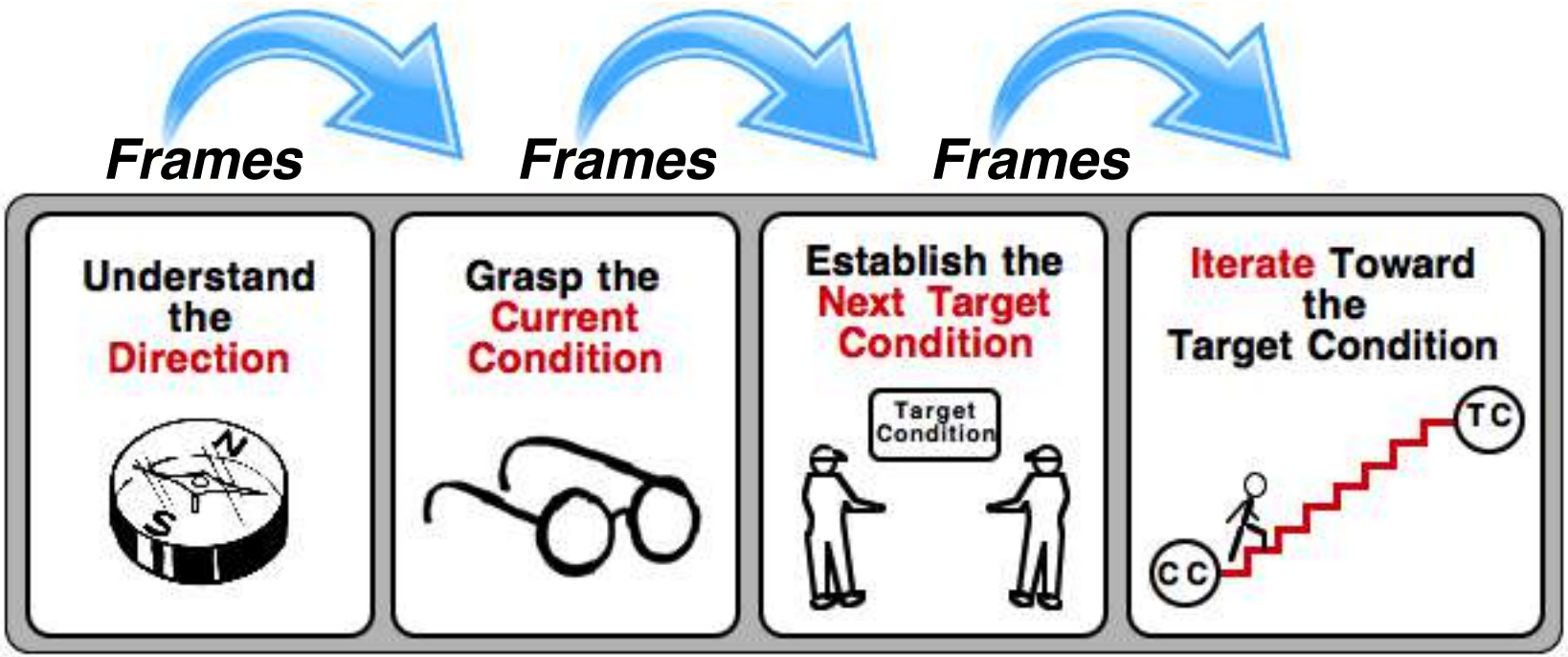
Many teams quickly get into implementation action, for a supposed time savings. But in such cases the team's effectiveness often follows the dotted red line in the graph below. In contrast, the Improvement Kata approach looks more like the blue line in the graph.

The Planning phase of the Improvement Kata involves (a) getting some clarity about the overarching challenge, (b) digging deep to better understand the current condition and then (c) establishing an appropriate next goal. This helps move you more comfortably into the zone of uncertainty where you apply your creativity by viewing the steps you take as experiments from which you learn.



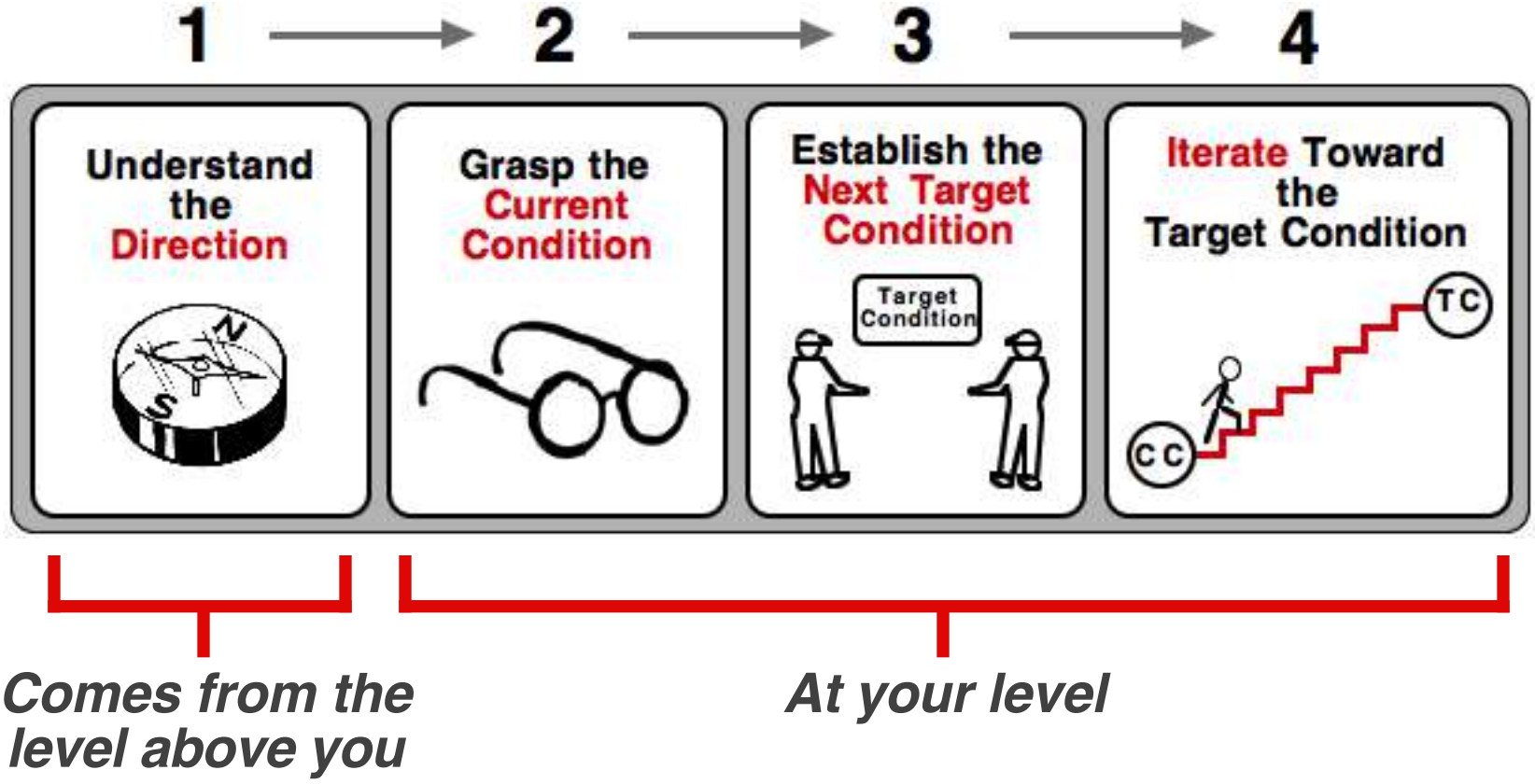
## THE IMPROVEMENT KATA PATTERN IS NESTED

Each step of the Improvement Kata pattern gets 'framed' within the context of the previous step. This framing effect is an integral part of effective problem solving.



## THE IMPROVEMENT KATA CONNECTS THE LEVELS OF AN ORGANIZATION

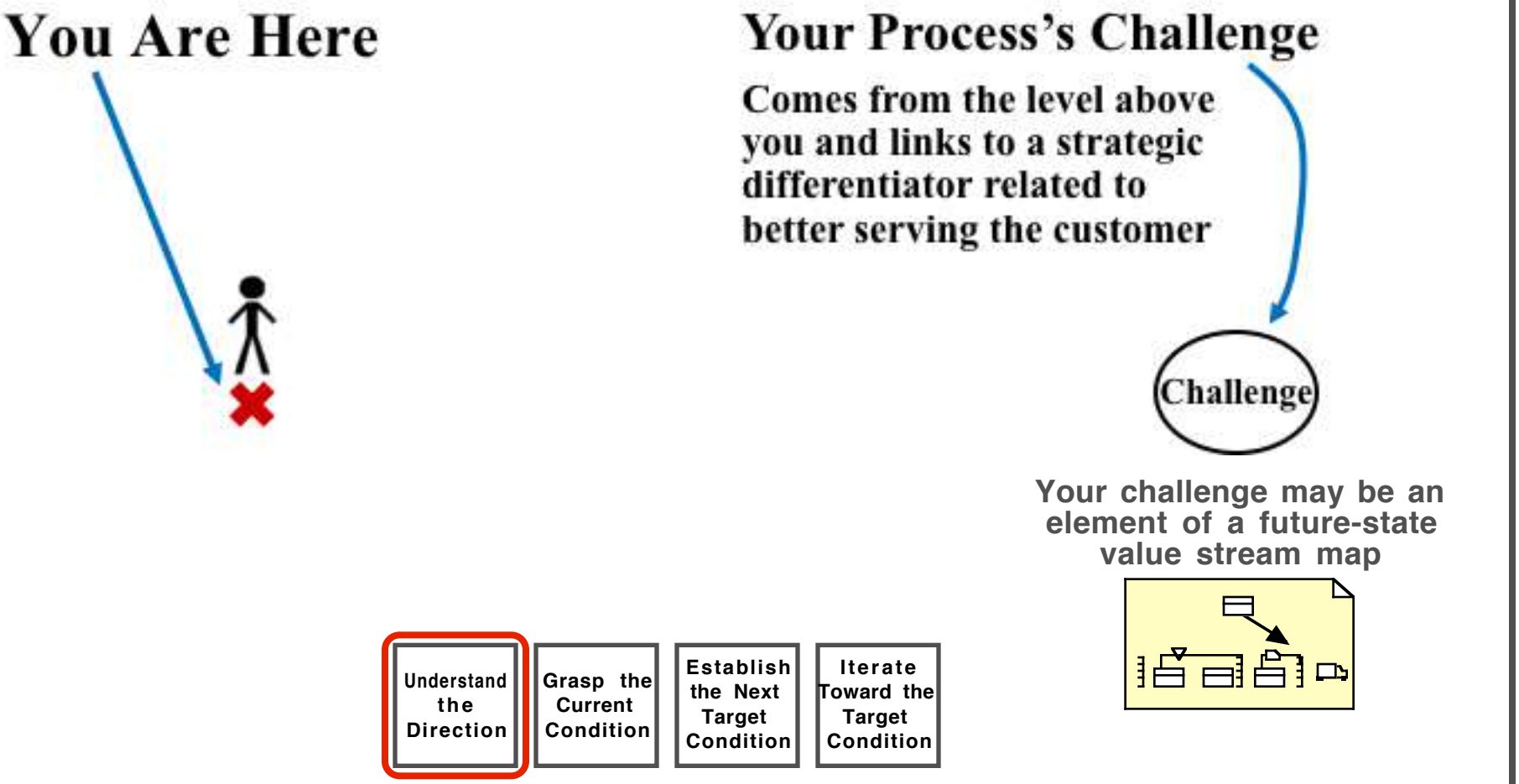
The pattern of the Improvement Kata is a scalable pattern that's utilized at each level of an organization. **STEP 1** of the Improvement Kata model ("Understand the Direction") entails understanding the Target Condition from the level above you. (Ultimately this is linked to a high-level strategic objective or challenge.) **STEP 3** of the Improvement Kata involves defining the next Target Condition at your level, in the direction that was set in the first step.



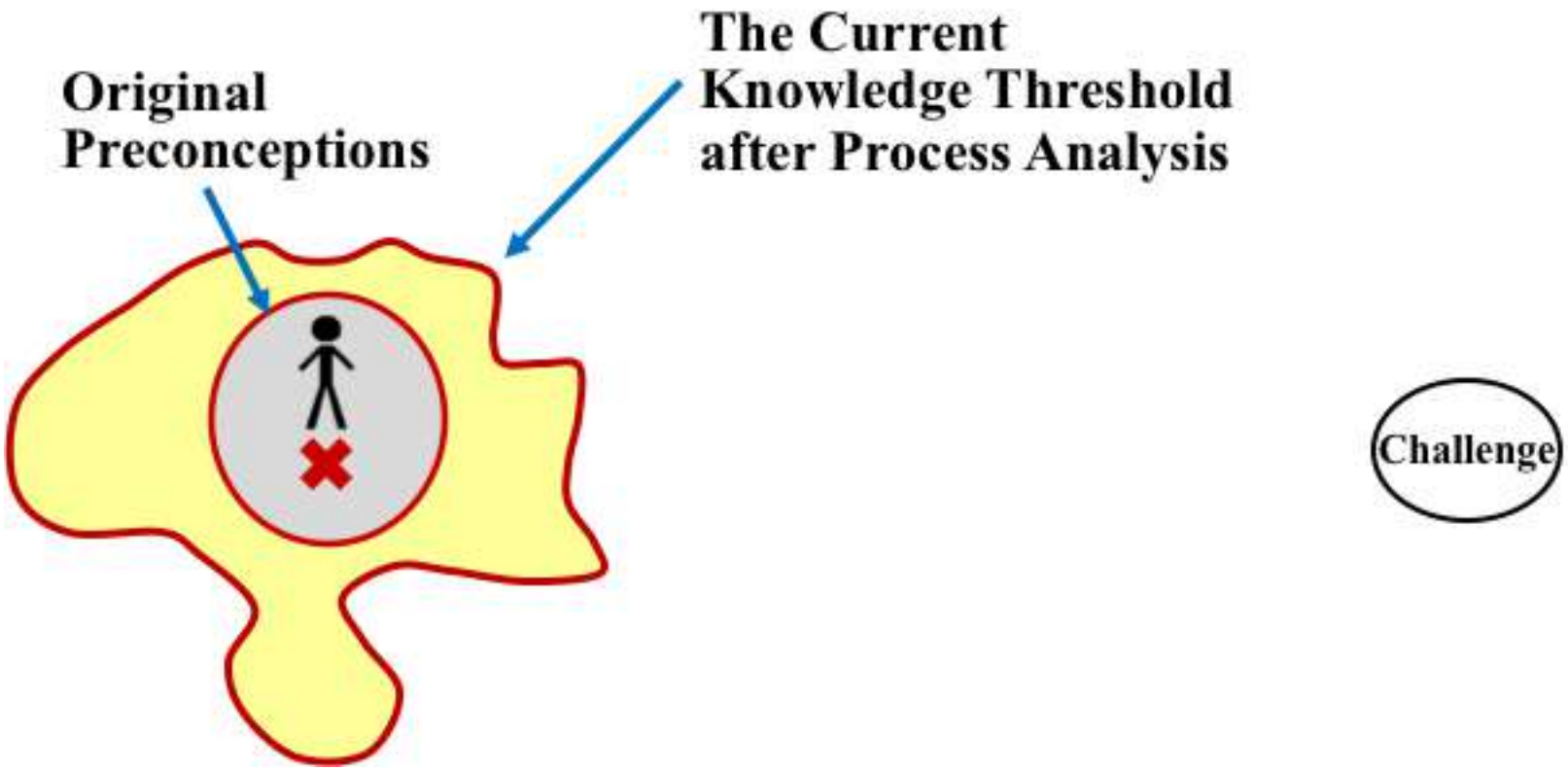
# PLANNING PHASE - *Where Do We Want to Go?*

**STEP 1: UNDERSTAND THE DIRECTION.** A challenge is set, beginning at the organization or value-stream level. This overarching challenge is a strategic differentiator that relates to better serving the customer, and may come from a future-state value stream map. It provides an overarching objective and rallying point for individual process improvement efforts inside the organization.

The challenge *at your process* is the target condition from the level above you. So the overarching challenge gets broken into successively smaller elements as you move down the organization.



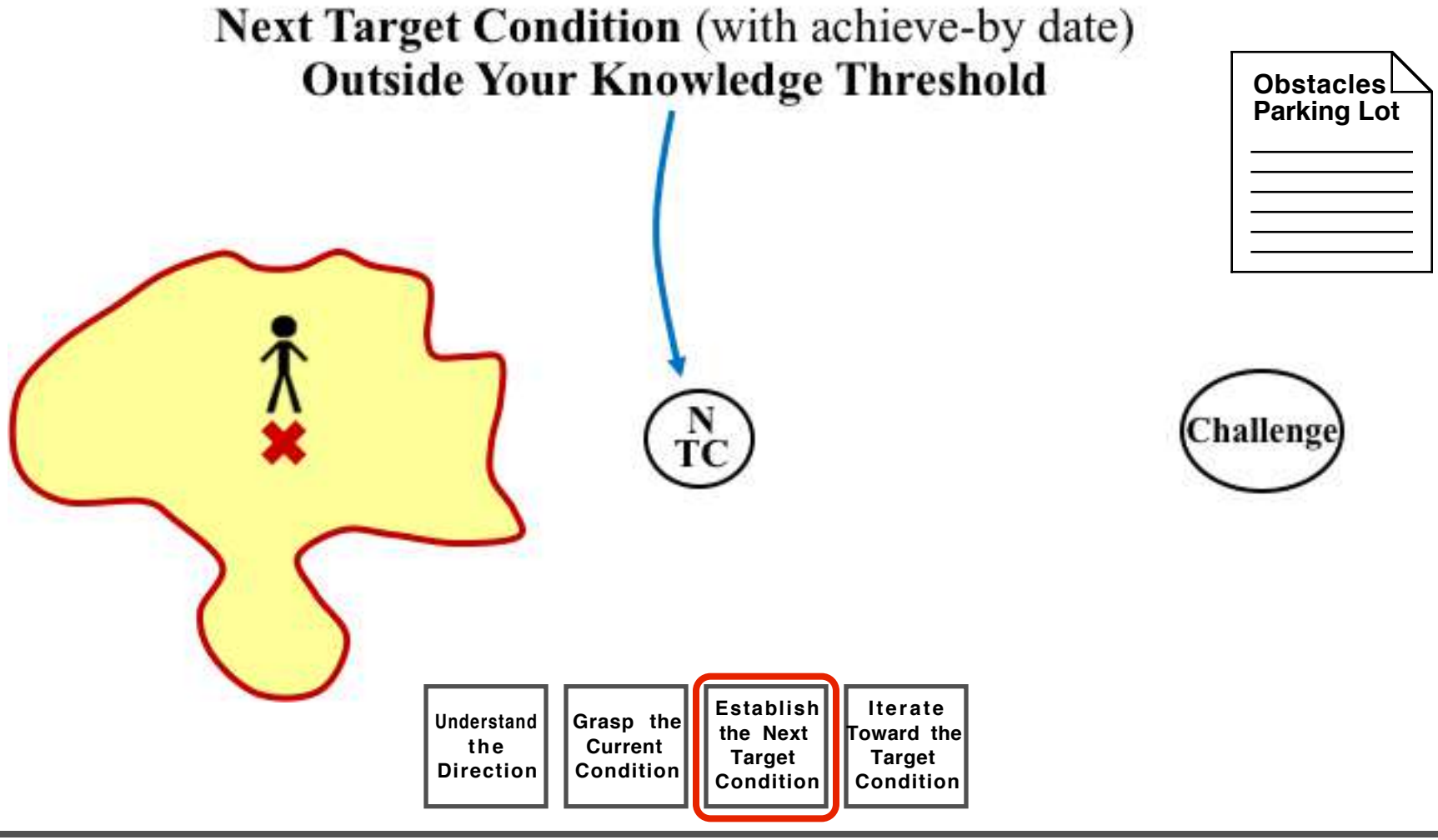
**STEP 2: GRASP THE CURRENT CONDITION.** Once the direction coming from the level above you is understood, study the current condition of your focus process in detail following the steps of the Process Analysis Kata, which helps you see beyond your preconceptions as you analyze a process. The results of this analysis are an input into defining the next Target Condition, and represent your **Current Knowledge Threshold** about the work process you're looking at.




Understand the Direction | **Grasp the Current Condition** | Establish the Next Target Condition | Iterate Toward the Target Condition

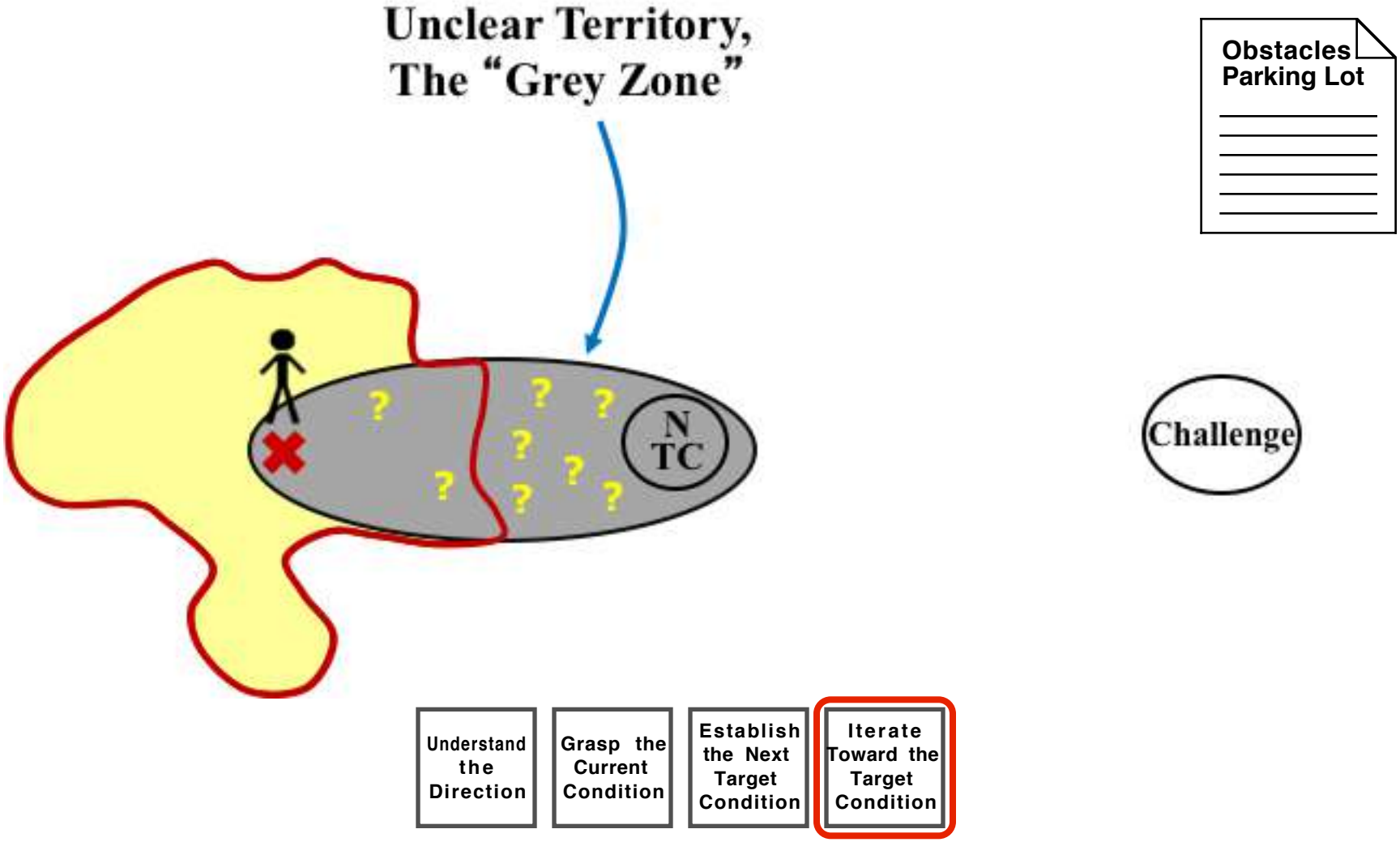
**STEP 3: ESTABLISH THE NEXT TARGET CONDITION.** The purpose of studying the current condition is to obtain the facts and data you need in order to establish a descriptive and measureable target condition at your level, in the direction of the challenge.

The target condition lies outside your current knowledge threshold and has a specified achieve-by date that's between 1 week - 3 months out. The target condition describes in some detail how you would like the focus process to be functioning on that achieve-by date. Once you have a target condition you begin to see Obstacles to achieving it, which are noted in the Obstacles Parking Lot.



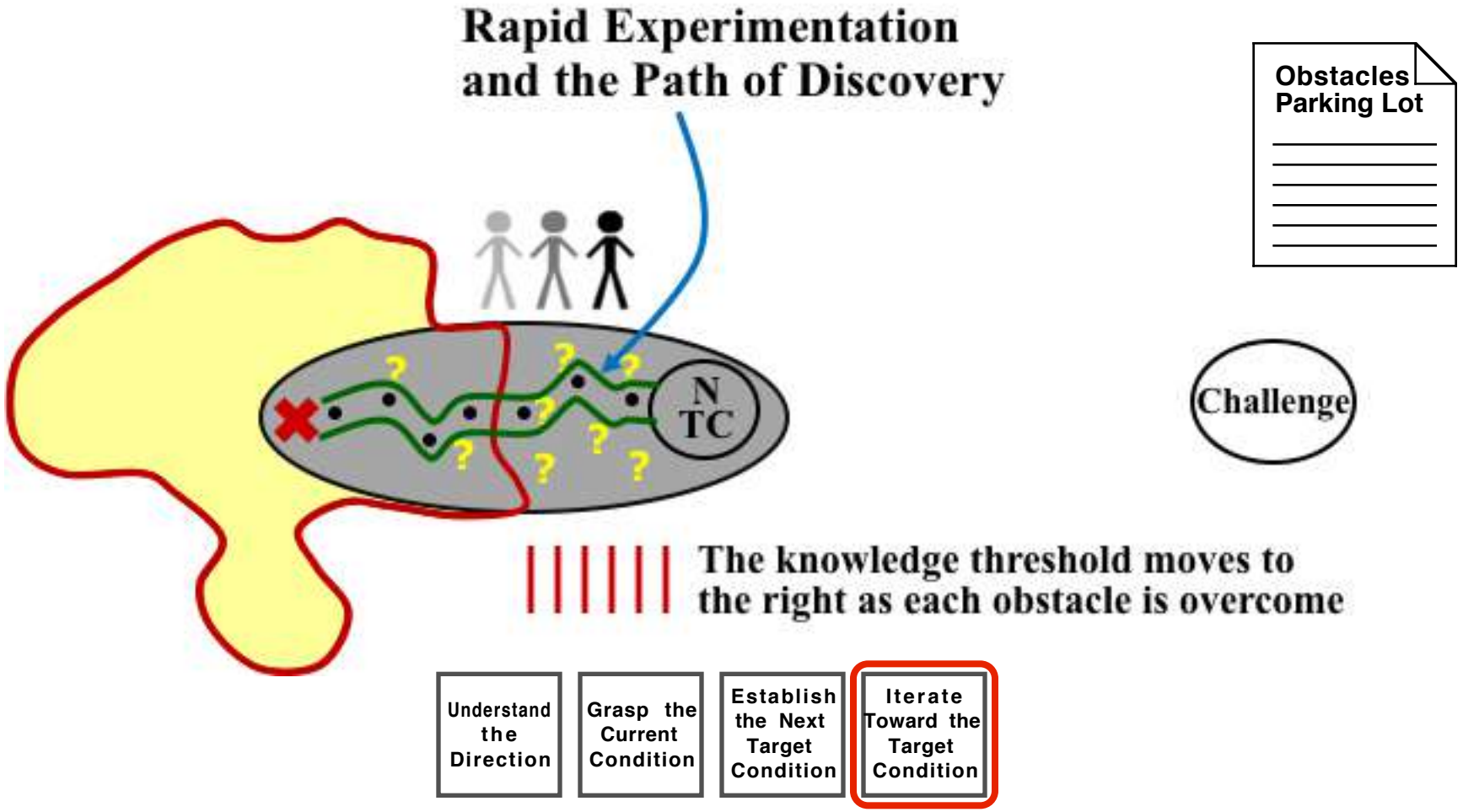
# EXECUTING PHASE - *How to Get There*

**NOW THERE IS THE GREY ZONE.** You don't know exactly how you're going to get to the target condition by its specified achieve-by date. The grey zone is a learning zone.

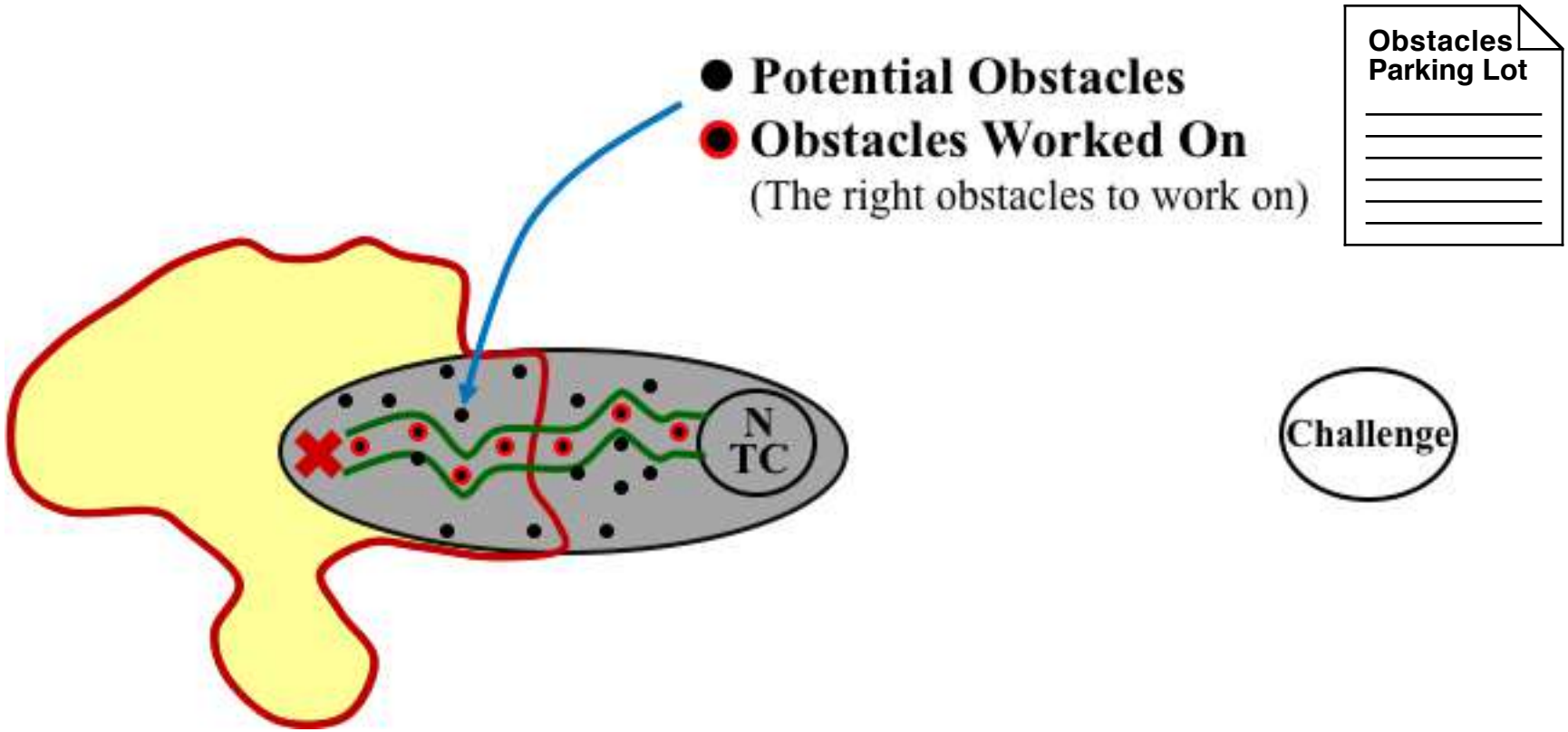


**STEP 4: ITERATE TOWARD THE NEXT TARGET CONDITION.** Two daily routines are used here: The PDCA Kata (rapid experimenting) by the **Learner**, and the Coaching-Cycle Kata (**Coach**).

More obstacles appear in this phase of the Improvement Kata, due to the learning via experiments. Many obstacles are not visible in the planning phase. The team works on one obstacle at a time. You're looking for the most direct path through the field of obstacles to the next target condition, which won't be a straight line. You're in a mode of rapid learning and discovery, adjusting your course based on facts & data gained through experimenting. The threshold of knowledge moves with each experiment.



**THERE'S NO NEED TO WORK ON EVERY POSSIBLE OBSTACLE.** You only need to overcome those obstacles that you find are preventing the process from operating in a way consistent with the next target condition. From each experiment you gain new information and adjust your next step accordingly, to iteratively find your way to the target condition by the achieve-by date. The obstacles parking lot is continually updated, revealing how flawed our preconceptions can be.



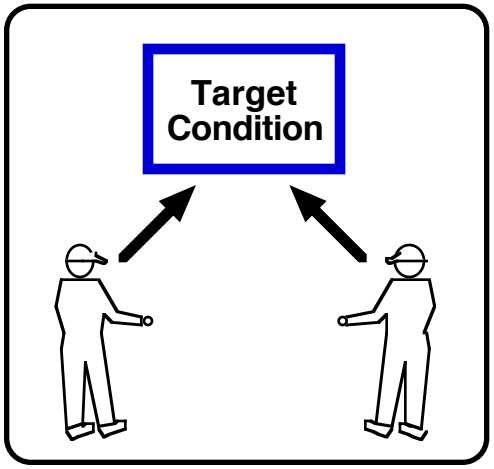

Understand the Direction | Grasp the Current Condition | Establish the Next Target Condition | **Iterate Toward the Target Condition**

## WHAT *CAN* WE IMPROVE? versus WHAT DO WE *NEED* TO IMPROVE?

Simply asking people, *"What can we improve?"* is not an effective way of continuously improving, generating teamwork and empowering people:

- Everyone's viewpoint is naturally limited and biased
- We quickly get overwhelmed with diverse action items going in different directions
- There's only limited time available each day for working on improvement

With the Improvement Kata a team instead focuses on what it *needs* to do to improve. This involves working on only those obstacles that the team finds are *actually* preventing the team from moving from its current condition to the next target condition.

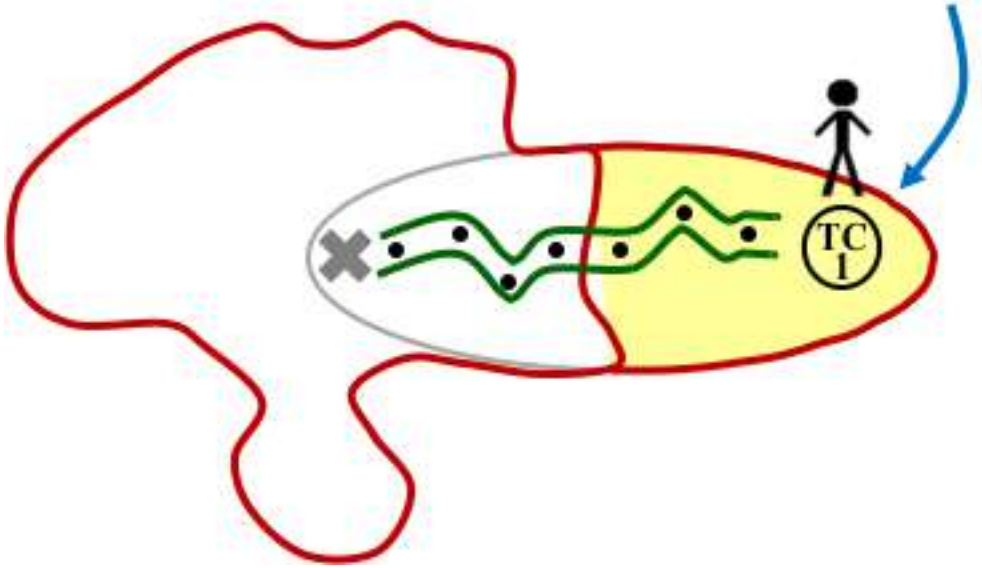



**Tackling the specific obstacles to a defined target condition is a great framework for bringing everyone's ideas into play!**

**Our human ingenuity is activated and channeled when we operate with boundaries and limits.**

**NOW YOU ARE HERE.** There is a new threshold of knowledge and a new current condition. And the Learner has gotten more skillful in applying the Improvement Kata pattern.

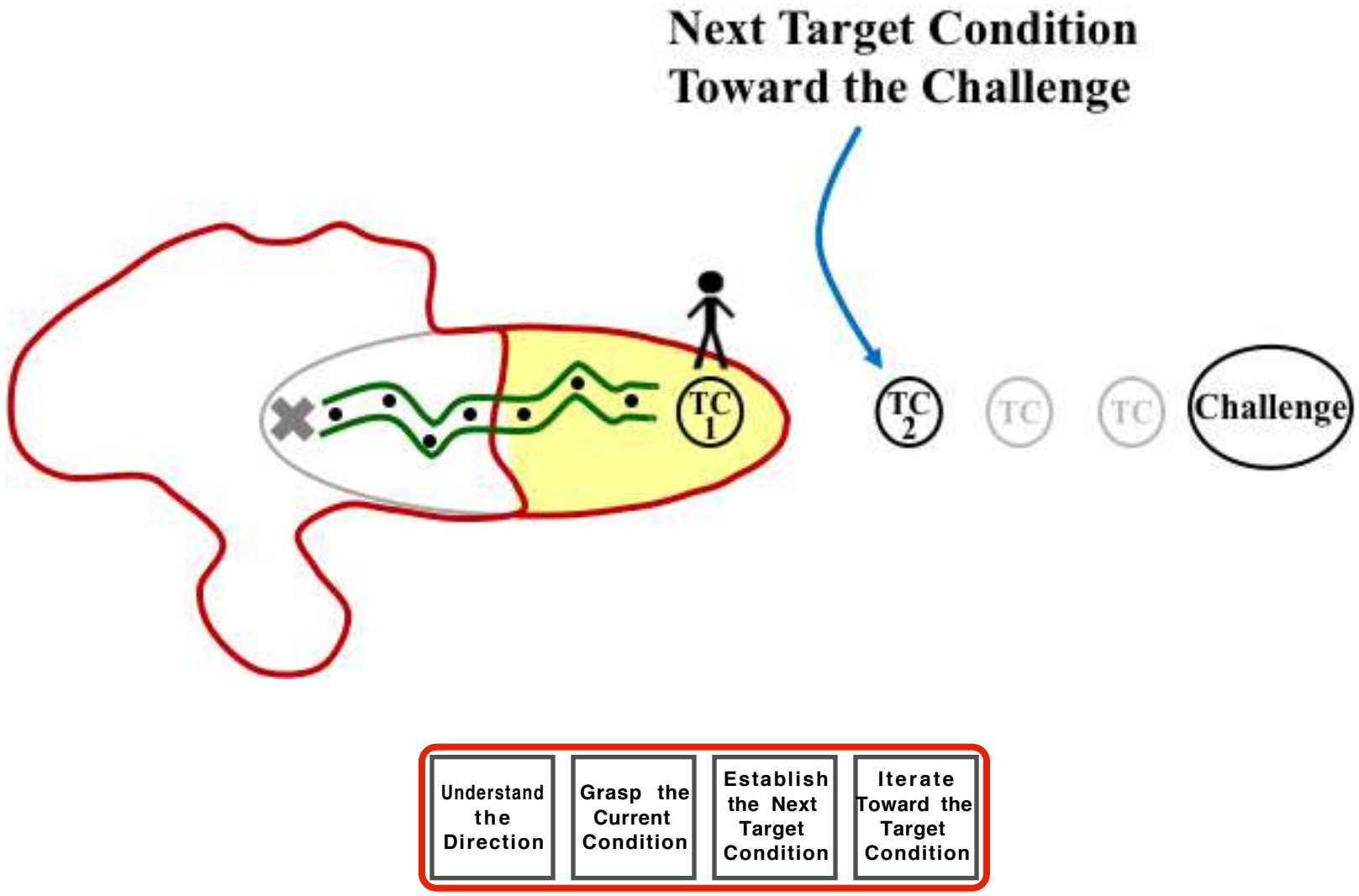
- ✓ New current state = improved performance
- ✓ Closer to the breakthrough challenge
- ✓ Expanding knowledge threshold
- ✓ Increased skill with the Improvement Kata




Challenge

Understand the Direction | Grasp the Current Condition | Establish the Next Target Condition | **Iterate Toward the Target Condition**

**REPEAT THE PATTERN.** Once the target condition is achieved or its achieve-by date is reached, the steps of the Improvement Kata are repeated. Before that, however, the Learner and Coach reflect on what was learned in the last pass through the Improvement Kata. The pattern of the Improvement Kata then repeats as the Learner sets and then strives to achieve the next target condition toward the overarching challenge. It takes a series of target conditions to reach the challenge, but they are set one after another since you don't know in advance what the all necessary target conditions will be.



## SUMMARY

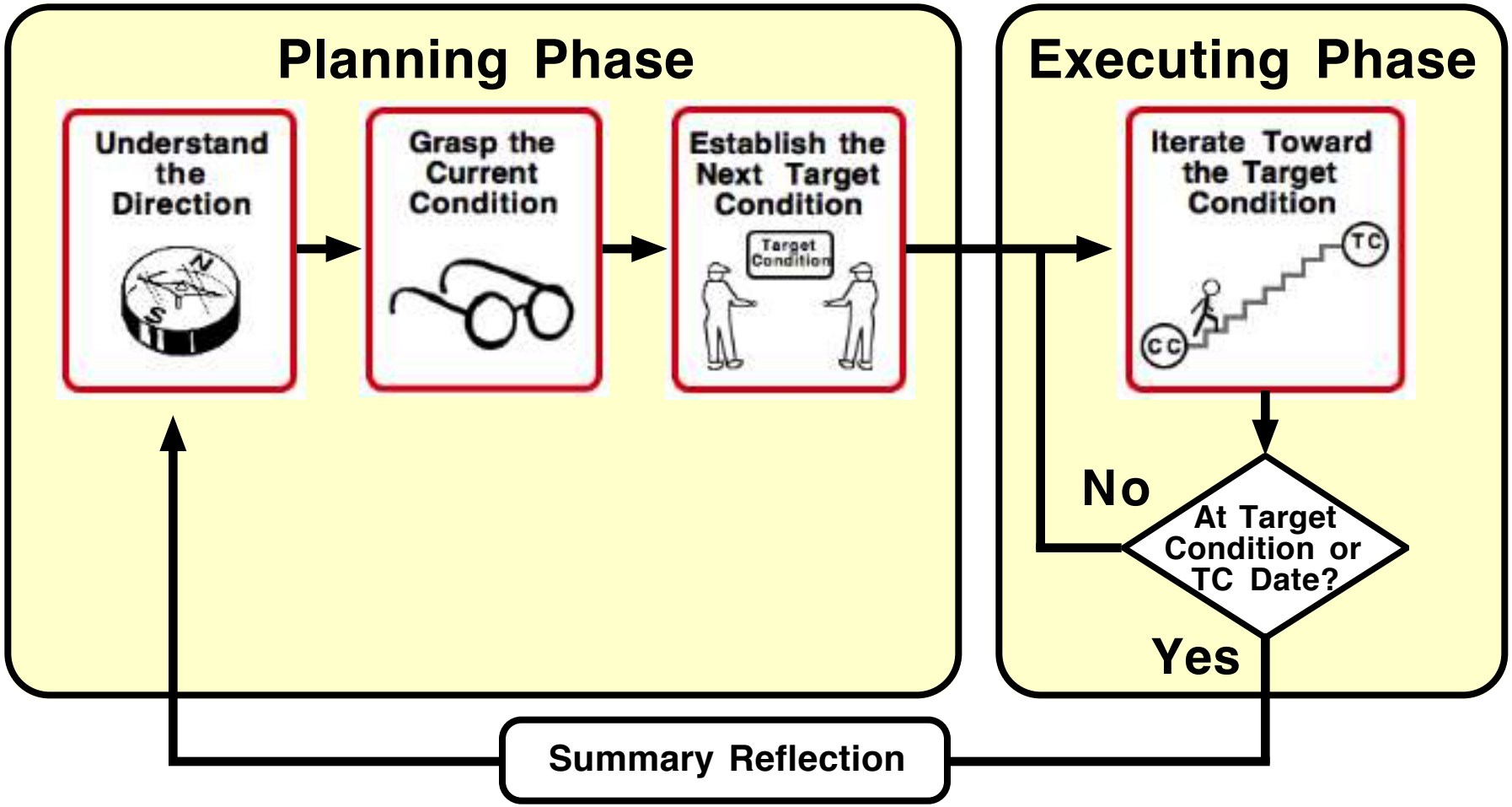



Diagram by Håkan Forss & Mike Rother



# THE IMPROVEMENT KATA IS A *META SKILL*

## It's working on how you think



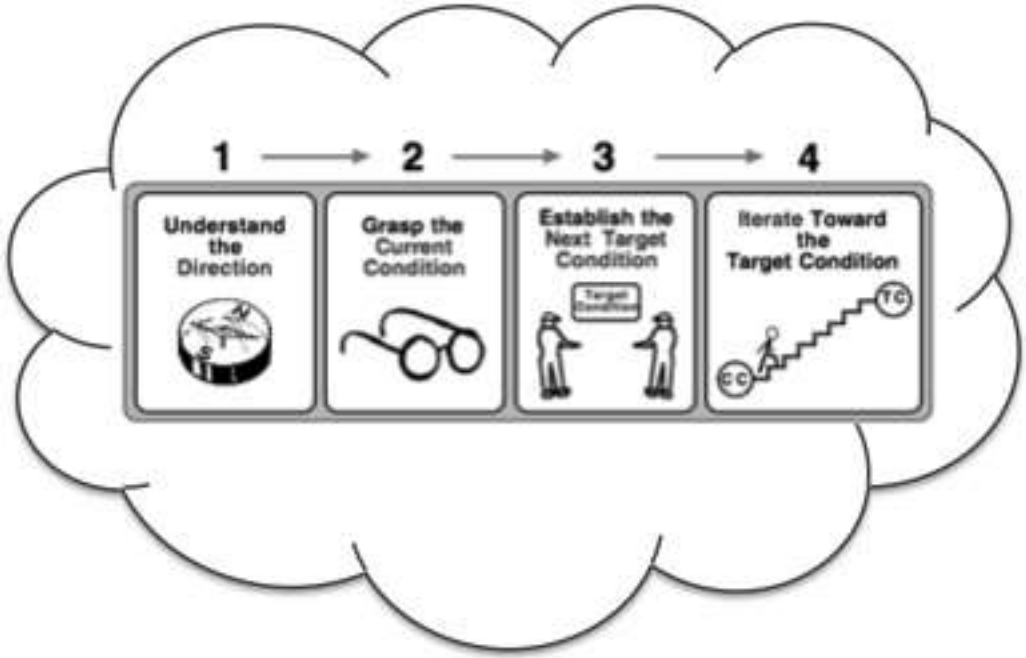
**Every organization has work routines. The pattern of the Improvement Kata is a different and particularly powerful routine because it's a *meta skill*. It's a "meta-habit" that aims to change your mental operating system so your human capabilities come to greater fruition.**

**To understand this, separate *WHAT* you're working on from *HOW* you're working on it. The Improvement Kata focuses on the HOW. That is, the Improvement Kata is a content-free pattern for *how* to go about improving, adapting and innovating.**

**Skills are usually domain-specific. You don't learn to play baseball by practicing soccer. But the pattern of the Improvement Kata is a way of working toward any objective. Practicing the scientific pattern of the Improvement Kata develops mindset and habits for achieving challenging goals. It creates a change in your organization's culture that facilitates continuous improvement.**

# IT'S A SYSTEMATIC, SCIENTIFIC APPROACH

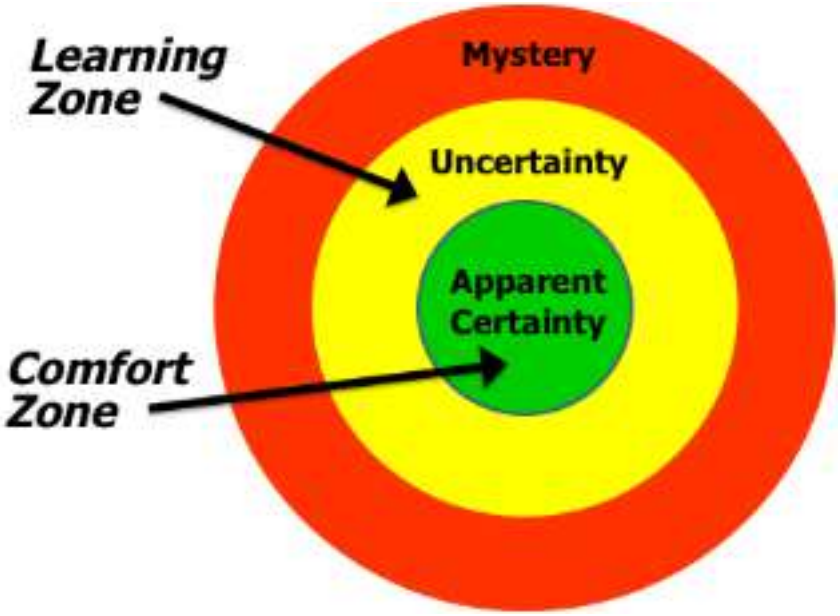
**Like any scientist, one of the few things we can *actually know* is the method we use. It's impossible to make completely accurate predictions about the future, especially in complex, interconnected systems. But with the pattern of the Improvement Kata you have a universal approach for navigating that territory.**






# THE IMPROVEMENT KATA GIVES YOU SOMETHING TO HANG ONTO WHEN THE PATH IS UNCERTAIN

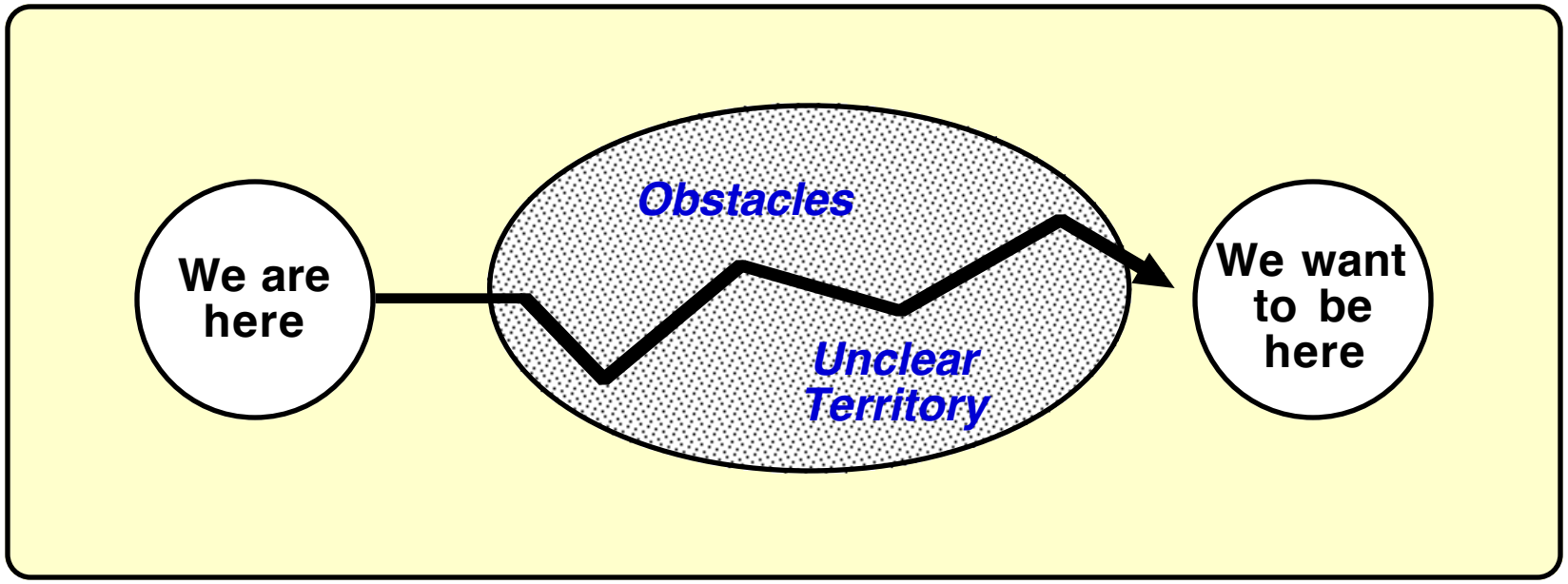
## It's a kind of security blanket






**The Improvement Kata gives you a way of having fewer negative emotions and more confidence and motivation when you navigate unclear territory. *"I've never done that before, but I know how to figure it out and find the way."* It helps you experience uncertainty more as an opportunity.**

# THE PATTERN OF THE IMPROVEMENT KATA PUTS YOU ON A JOURNEY OF PRACTICE AND DISCOVERY



# THE CHAIN REACTION WE'RE LOOKING FOR

**Practicing the scientific pattern and routines of the Improvement Kata moves people from a predictable-zone mindset to an exploratory mindset**

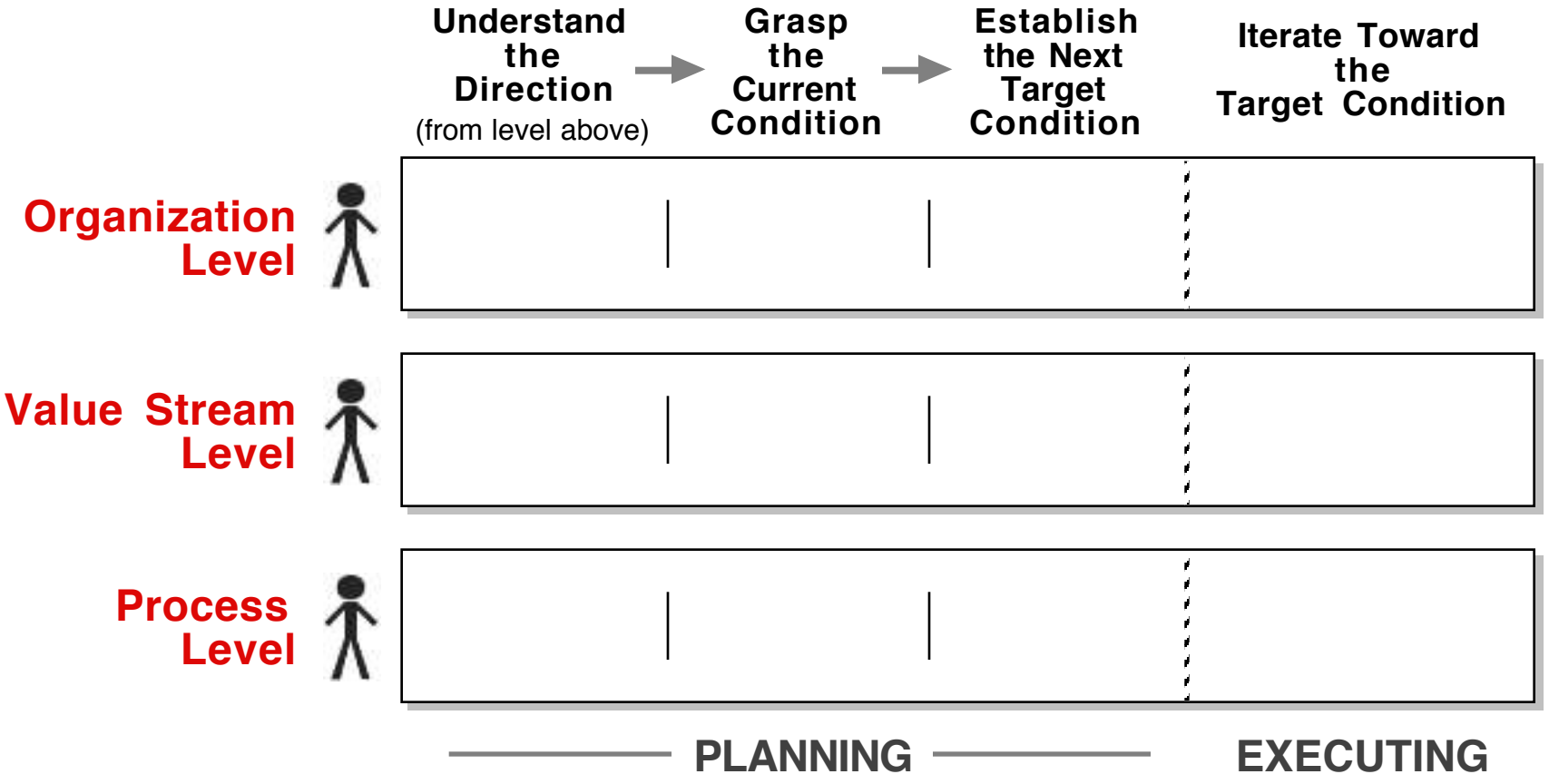
| *Increased Skill* | → | *Self Efficacy* | → | *Openness to Challenges* |
|---|---|---|---|---|
| When teams practice the scientific pattern of the Improvement Kata they become more skillful and competent at meeting challenges...<br><br>... because they learn to work iteratively and scientifically. | | As a result, they grow more comfortable with unpredictable paths  | | Which allows them to be more open to new challenges! |

**Self-Efficacy = The belief that you can master a situation**

**Self-Efficacy develops *along the way* through personal experience. Self-Efficacy is learned!**

# THE IMPROVEMENT KATA PATTERN IS USED AT ALL LEVELS OF AN ORGANIZATION

**It's a way of thinking. The content is different at each level, but the pattern is the same**



# THE IMPROVEMENT KATA IS ABOUT STRIVING FOR A NEW STATE, NOT JUST REACTING TO PROBLEMS

| Troubleshooting | Proactive Striving |
|---|---|
| • Reacting to problems. You have to do this because problems happen, but it's not enough for competitiveness.<br>• Reacting to improvement opportunities someone sees. | • A step-by-step process aimed at a desired, new target condition. Each step is taken relative to a hypothesis (prediction), and what you learn from that step influences the next step. |



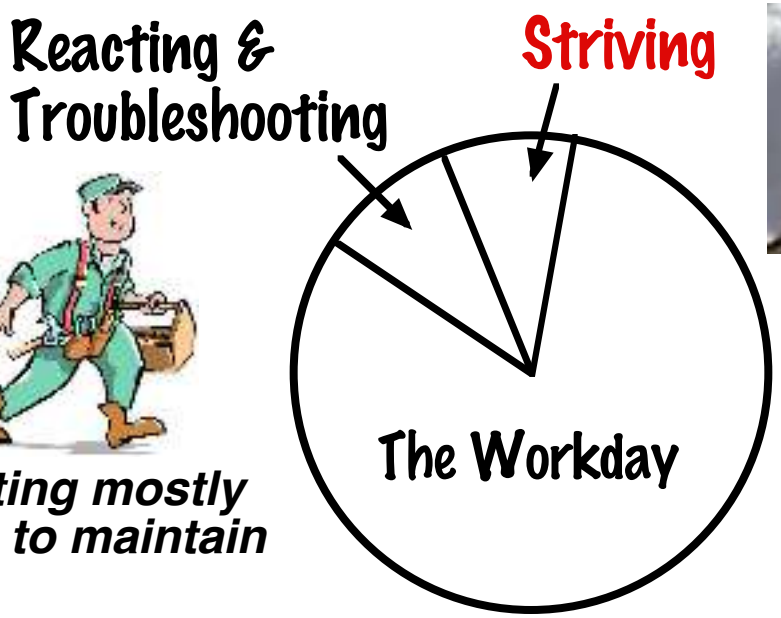




# CONTINUOUS IMPROVEMENT REQUIRES PROACTIVE STRIVING!

**Thriving in unpredictable, competitive circumstances involves systematically striving toward something, not just reacting to problems. Reacting to problems ("troubleshooting") is necessary, but alone is not sufficient for sustained competitiveness.**

**To achieve continuous improvement, adaptation and innovation a portion of everyone's workday should involve striving toward the next challenge and target condition**






***Troubleshooting mostly means trying to maintain***



***Striving brings you to knowledge thresholds and forces you to learn & adapt***

**Note: The striving activity described in this guide only takes up a small portion (a slice) of each day, and the individual steps can be small.**

# THE *ACTION OF INNOVATION*

## Meeting a challenge involves lots of small steps

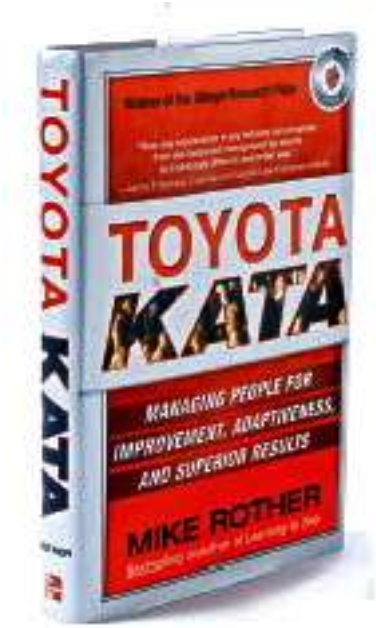
**We like to talk about our outcomes, our inventions, and tend to overlook the day-to-day enterprise of the steps that get us there; the successive target conditions and all that iteration.**

**Unlike what you may think, the *action of innovation* is the day-to-day work of iterating toward a challenging goal.**

**When you realize that progress arises from accumulation of steps, often across the organization, it makes great sense to develop the capability of people in the organization to do focused, systematic continuous improvement on their processes.**



# WHERE DOES THE IMPROVEMENT KATA PATTERN COME FROM?




**The research that led to the book Toyota Kata ran from 2004-2009. The objective was to gain a deeper understanding of how Toyota manages people in order to achieve continuous improvement and adaptation, and what it will take to develop that in non-Toyota organizations. The research was driven by these two questions:**

1. **What are the unseen managerial routines and thinking that lie behind Toyota's success with continuous improvement and adaptation?**

2. **How can other companies develop similar routines and thinking in their organizations?**

**There is a repeating pattern of thinking and behavior in Toyota managers' approach, that is different from the prevailing Western command-and-control managerial routines. Each Toyota manager has their own style of course, but if you study it enough a common pattern of thinking and acting emerges, which is evident at all levels at Toyota. I depicted the pattern of thinking and behavior with a four-step model, which I named the "Improvement Kata" after noticing a connection between Toyota's management approach and the concept of Kata (practice routines and "way of doing things") in Japanese culture.**

**The Improvement Kata pattern that distilled out of our investigations is actually similar to other models of the human iterative, creative, scientific process, such as *systems thinking, critical thinking, learning organization, design thinking, creative thinking, solution focused practice, preferred futuring, skills of inquiry, evidence-based learning*, and so on.**

# IF YOU'RE INTO "LEAN"



# THE IMPROVEMENT KATA & COACHING KATA ARE THE LESS VISIBLE PART OF LEAN

**If you teach Lean solutions without also teaching the Improvement Kata routine, you're unlikely to develop the skill and disposition for day-to-day continuous improvement that characterize Toyota and Lean**

***Visible Aspect of Lean***

Lean solutions (tools, techniques and principles) to improve quality, cost, delivery



***Less Visible Aspect***

- The Improvement Kata routine of thinking & acting
- Managers as coaches for practicing that routine



# THE IK IS TOYOTA'S FUNDAMENTAL PATTERN FOR IMPROVING, ADAPTING, INNOVATING & MANAGING

**The Improvement Kata pattern is the fundamental way of working at Toyota, and there are several Toyota practices through which this pattern gets utilized and reinforced. The research found the Improvement Kata pattern underlying all of them, and utimately it is taught to everyone at Toyota.**

**It's not surprising that the pattern that Toyota's managers teach matches models of the scientific creative process.**

## Toyota Practices:

- Daily Management
- Daily Problem Solving
- "Toyota Business Practices"
- A3
- Improvement Events
- Standard Work
- Quality Circles

***What's behind all of these***

**The Improvement Kata Pattern**

# TRYING TO COPY TOYOTA'S VISIBLE TOOLS AND ACTIVITIES DOESN'T WORK

**At Toyota the Improvement Kata pattern is lodged in its people; specifically in its seasoned coaches who guide Learners in practicing and learning this pattern of thinking and acting.**




**This means copying visible Toyota activities – such as A3s – without bringing along the enabling coaching environment is unlikely to change much. Mindset change and skill development come from correct & frequent practice of a pattern, not just from using Toyota-style tools and activities.**

**Teams and organizations outside Toyota would do well to begin with structured IK & CK routines for Learners and Coaches to practice, like those in this Handbook, and then over time develop their own activities and tools.**



# HOW DO THE LEAN TOOLS AND PRACTICES FIT IN?



**Lean tools, techniques and principles to improve quality, cost and delivery are as useful and important as ever, but they should be applied within the context of the Improvement Kata. *What are you trying to achieve?***

**Lean tools are brought in (pulled) situationally as needed. The mindset you're trying to develop is one of working iteratively to discover and do what is necessary to achieve a goal, as opposed to a mindset of pushing and implementing pre-defined solutions or tools.**

**For example, if a kanban system will help a team achieve its target condition, then at that point kanban is brought in and utilized. Teams stay focused on their next target condition.**

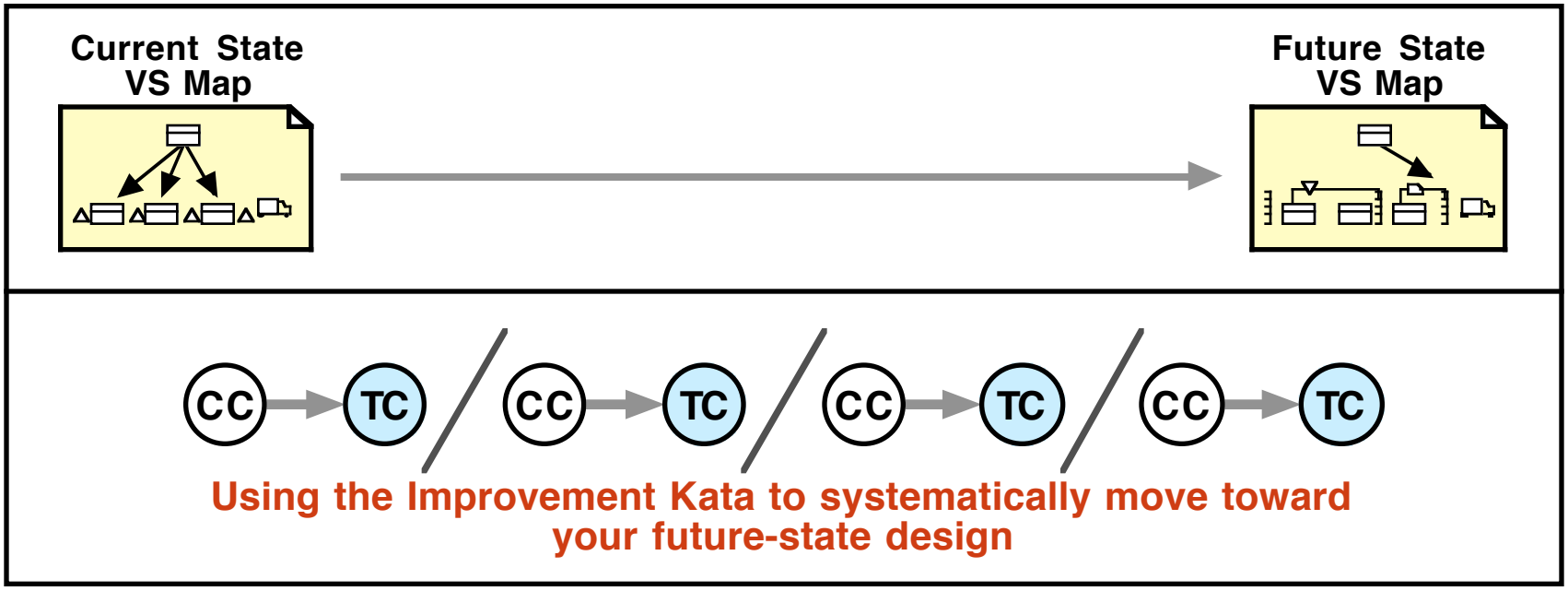
**This approach makes our efforts more meaningful and successful. It teaches us more scientific & effective habits of thinking and acting.**




# FOR VALUE STREAM MAPPERS

## The pattern of the Improvement Kata is how to achieve your future-state map!

**Don't just draw a current-state map, highlight problems and go after them. Draw a future-state map of how you want the value stream to flow, and then use the pattern of the Improvement Kata to get the value stream to function that way.**




**CC** = Current Condition, **TC** = Target Condition

# Chapter 2

## GUIDELINES FOR PRACTICING

### How to practice the Improvement Kata and Coaching Kata





# IT TAKES PRACTICE TO ACQUIRE NEW SKILLS AND MINDSET

**The Improvement Kata and Coaching Kata are an approach for teaching scientific thinking. Scientific thinking is a skill-based ability and acquiring it is like learning a sport, a musical instrument or a language. You can read a book about it, you can attend a seminar, etc., but you actually acquire scientific skill through *practice*.**

**This Handbook is about skills that get internalized in your brain's automatic systems as a sort of habit. To develop this automatic system the focus is on training through practical activity. You can't just pull out old thinking and replace it with new thinking. Something new *grows*, and eventually it replaces the old.**

**The goal of practicing the routines of the Improvement Kata and Coaching Kata is to internalize and understand their scientific pattern so you can apply it in many different situations without thought or hesitation. Eventually both Learners and Coaches should react this way in many situations every day.**



## Before we get going let's talk a little about *practicing*.

# THERE'S A LEARNING PROGRESSION

## *Able to TEACH it*

*Developing Others*

**Can instruct, coach and counsel others in practicing the skill pattern**

***At this point you <u>understand</u> the 'why' behind the skill pattern and can teach others***

## *Able to DO it*

*Self Development*

**Can successfully apply the skill pattern in a real environment**

***Skill development and mindset change begin here, when you start applying the new skill pattern yourself***

## *AWARE of it*

**Have basic knowledge from books, websites, seminars, workshops, etc.**

***Concepts and <u>knowledge</u> alone generally won't change your ability and thinking***

**In short, you first practice and learn the Improvement Kata pattern yourself, before you can teach (coach) it to others**



# 4 INGREDIENTS FOR LEARNING A NEW SKILL

**As we know from sports and music, with the following ingredients you can start to rewire your brain & acquire new skills and habits.**



② **KATA**
**Structured routine to practice**

***Structured routines so a beginner can practice fundamentals***

**COACHING** ③
**Corrective feedback**

***Feedback to ensure the Learner practices the correct patterns***

① **PRACTICE**
**Daily**

***Repetition***

**MASTERY** ④
**Overcoming obstacles**

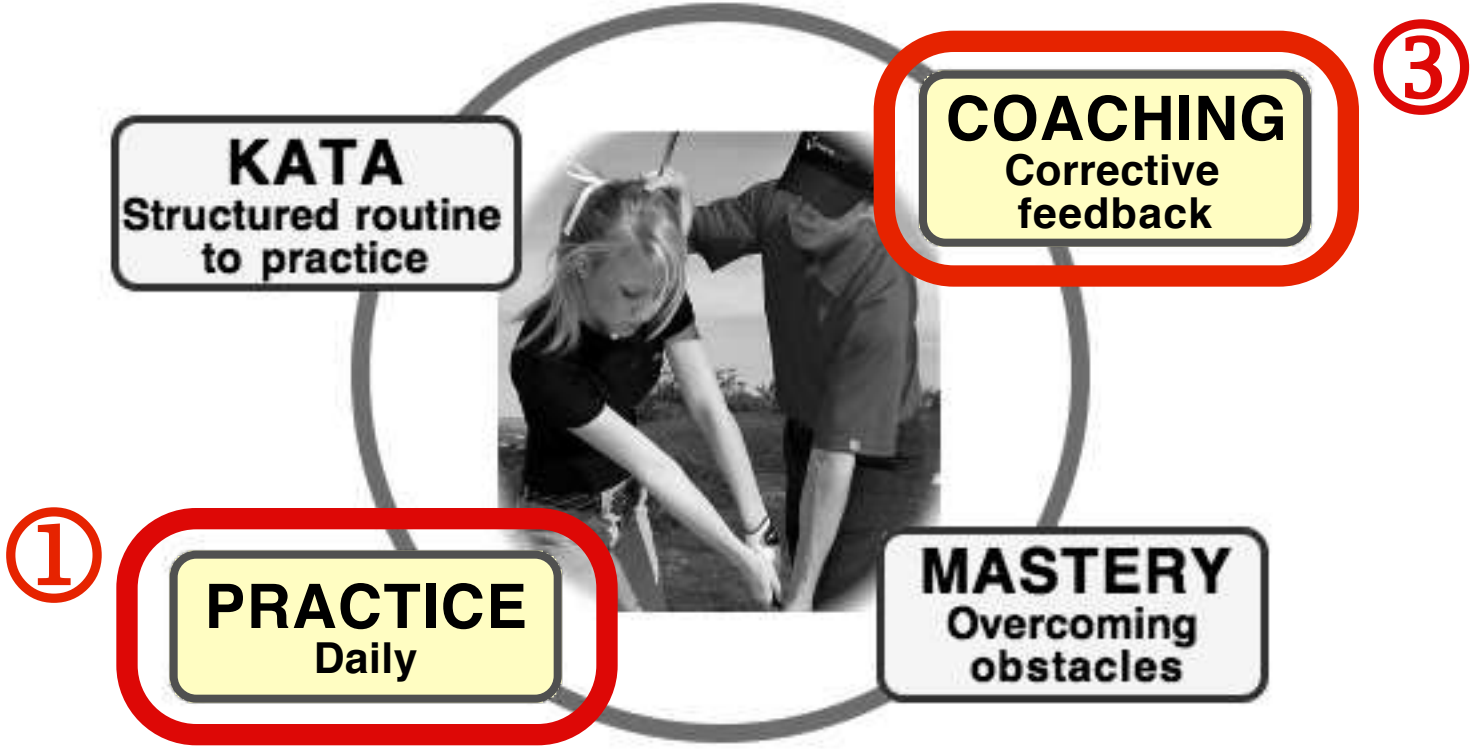
***Interest and motivation on the part of the Learner***



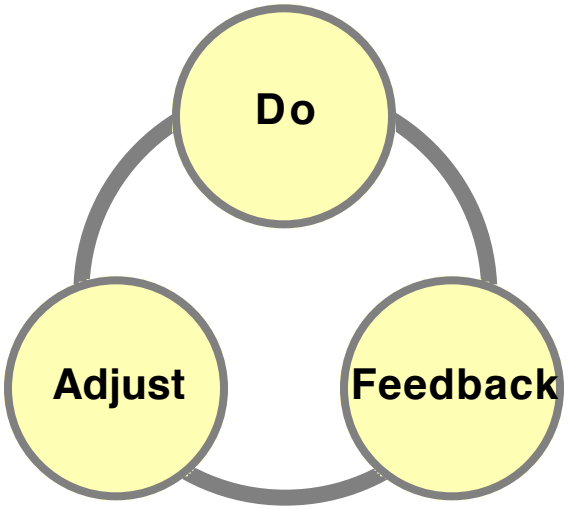

# THIS IS ABOUT SOMETHING CALLED *"DELIBERATE PRACTICE"*

**Deliberate practice is not just repetitions, but practice that follows a pattern of:**

**Action -> Feedback -> Adjustment -> and Action Again**



# DELIBERATE PRACTICE




- ❑ It's practice designed specifically to improve performance over time.
- ❑ It's practice that involves continual evaluation of your weaknesses and targeting specific weaknesses, rather than repeatedly doing what you already know how to do.
- ❑ It's practice that requires a coach. Observation and specific feedback on your current performance is critical to understanding what to work on and acquiring new skill.
- ❑ It's practice where you don't move on to the next part of the routine you're trying to learn until you master the part you're currently working on.

# GET BETTER BY WORKING ON THE ERRORS

**Practice is practice right? Nope. How well you master the Improvement Kata pattern depends a lot on *how* you practice, not just repeating the steps of the Improvement Kata a large number of times.**



**<u>Practice aimed at remedying specific weaknesses</u> is more important than raw number of hours. To make satisfying progress in practicing the kata explained in this Handbook you should:**

**(A) Regularly seek to understand your current weaknesses, through feedback from your coach**

**(B) Target certain ones (you can't work on everything at once!)**

**(C) Invent specific tasks in your practice to address that targeted deficiency**



**Understanding and working on your errors "scaffolds" future performance by showing you what to concentrate on and practice next. It gradually gets easier.**

**Address your mistakes as they occur. You and your coach should identify the error, and then rehearse that part until it's corrected. Only then proceed to the next segment.**

***An amateur trains until he gets it right.***
***A professional trains until he can't get it wrong.*** ~ Unknown

# THIS = PRACTICING IN THE "LEARNING ZONE"

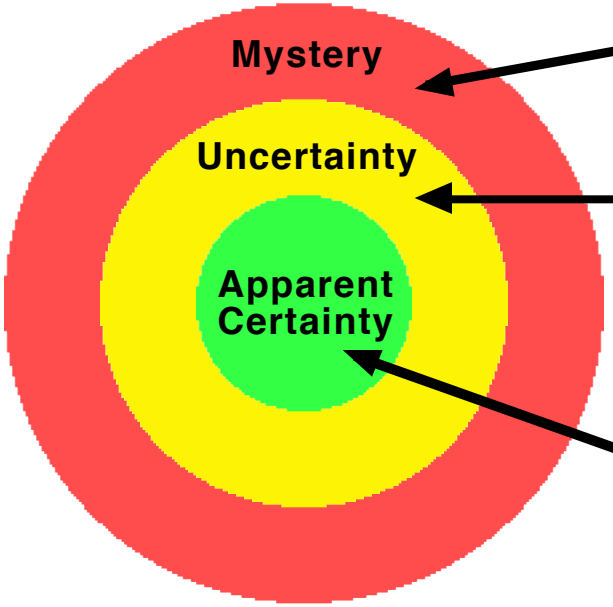
## As your skill and comfort zone expand, keep revising your practice in order to stretch yourself beyond that zone

**A key part of your IK/CK practicing is that it should lie in your *learning zone*. As shown in the diagram below, your learning zone is skills and abilities that lie just beyond the *comfort zone* of your current abilities.**

**No real learning takes place when you practice activities in your comfort zone, since these are skills and activities you've already mastered and can easily do.**

**Similarly, attempting to practice skills that fall in the *panic zone* is unproductive because you haven't yet acquired the prerequisites for those skills.**

***Your Coach should design practice tasks slightly beyond your current capabilities***




**Panic Zone**
**These are skills and activities far beyond the Learner's current abilities**

****LEARNING ZONE****
**These are skills and activities one step beyond those the Learner can already do comfortably and correctly. In this zone the Learner is pushing beyond his/her current abilities.**

**Comfort Zone**
**These are skills and activities the Learner already knows how to do. Your brain is the master of this zone. There is no need for change.**

## *What this means for the Coach:*

# FOCUS AND GIVE *SPECIFIC* FEEDBACK

**The Coach could give all sorts of feedback to each Learner, but if the Learner doesn't focus on improving a specific part of their practice then it becomes less 'deliberate practice' and more just repetition**

**Feedback is essential to deliberate practice but it should be specific, purposeful feedback. The Coach's feedback should involve a corrective adjustment; i.e., specific behavioral actions that need to be undertaken to achieve the next, specific practice goal.**

> ***"You need to draw better block diagrams,"*** **is poor feedback.**
> ***"Practice drawing block diagrams to show the flow of work, not the physical layout of the process,"*** **is good feedback.**

**Observe or question the Learner —> Compare what you see and hear to the desired way of working (specified by the kata) —> Give feedback and a specific next practice goal —> Repeat**



**Note that although you're developing team and organizational capability, the coaching is done one-on-one. One Coach can coach several Learners, but will do so one Learner at a time.**

*What this means for the Learner:*

# ENJOY THE LEARNING PROCESS

**In order to move beyond the plateaus you'll inevitably reach, you need to be motivated enough to tackle your mistakes**

**It's not that the best IK/CK practitioners make fewer errors, it's that when errors occur they're not afraid to work on correcting them.**

**Struggle is a predictable part of the learning process and progress over time is what's important, not any particular win or loss. The best IK/CK practitioners derive motivation from their desire to master the IK/CK activity and the periodic feeling that one is getting better at it.**

**In fact, once you have some proficiency in the IK/CK, the obstacles and uncertainty you face can become the activity's very appeal.**




# THE LEARNER SHOULD HAVE OR DEVELOP A POSITIVE EMOTION ABOUT PRACTICING

**Mastery experience is a powerful source of self efficacy. The Learner should periodically be thinking *"I am getting better,"* so s/he has the positive emotions about practice that are required for practicing to get better.**



# THE LEARNER'S MOTIVATION IS IMPORTANT

## *I think I'm getting better*

**How do you internalize a thinking and behavior pattern like the Improvement Kata? Brain research is clear: To develop new habits you need to practice new routines and experience a periodic sense of mastering them. The Learner's emotions play a significant role. *You gotta wanna*, otherwise a new pattern won't imprint no matter how much you practice it.**

**However, you can't make someone commit by telling them to commit. Either the Learner comes into it already interested and wanting to learn, or that kind of postive emotion has to develop as they begin practicing, through gaining some mastery.**

**It's the responsibility of the Coach to give the Learner procedural guidance that makes the Learner periodically (not constantly) feel a sense of progress:**

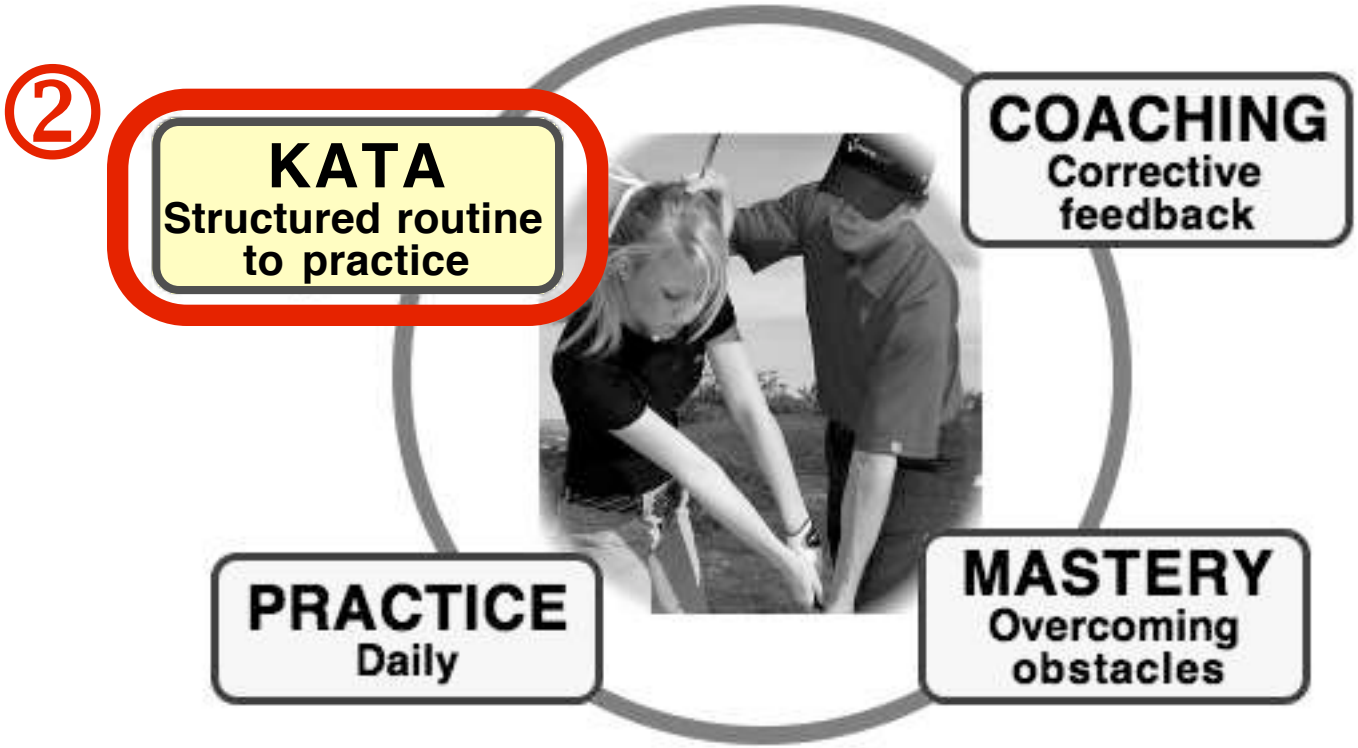
- **--> The Learner should experience successes in overcoming obstacles to learning the Improvement Kata pattern.**
- **--> The Learner should experience successes in overcoming obstacles and achieving a challenging target condition through applying the Improvement Kata pattern.**






# START YOUR PRACTICE USING KATA

**Whenever you learn a new skill you're a beginner in that area, which means starting with some repetitious exercises**





# KATA MAKE IT EASIER FOR US TO ADOPT A NEW WAY OF WORKING

**Most beginners acquire new skills better when they start with some structured routines to practice. This is especially true if you want to develop a shared set of skills and common mindset across a *team or organization*.**

**There have been many calls for applying greater scientific thinking in business, politics, education and daily life, but concepts that don't come with concrete practice routines are by themselves unlikely to lead to change. They may be good ideas, but they lack a way of operationalizing them, which makes them, *"Concepts without a Kata."***

**This Handbook provides Starter Kata for each of the four steps of the scientific Improvement Kata model and for teaching (Coaching) IK practice. Once you've practiced these starter routines enough to internalize their patterns and understand the 'why' behind them, you can build on that foundation and adjust your practice to suit your organization's situation and purpose.**

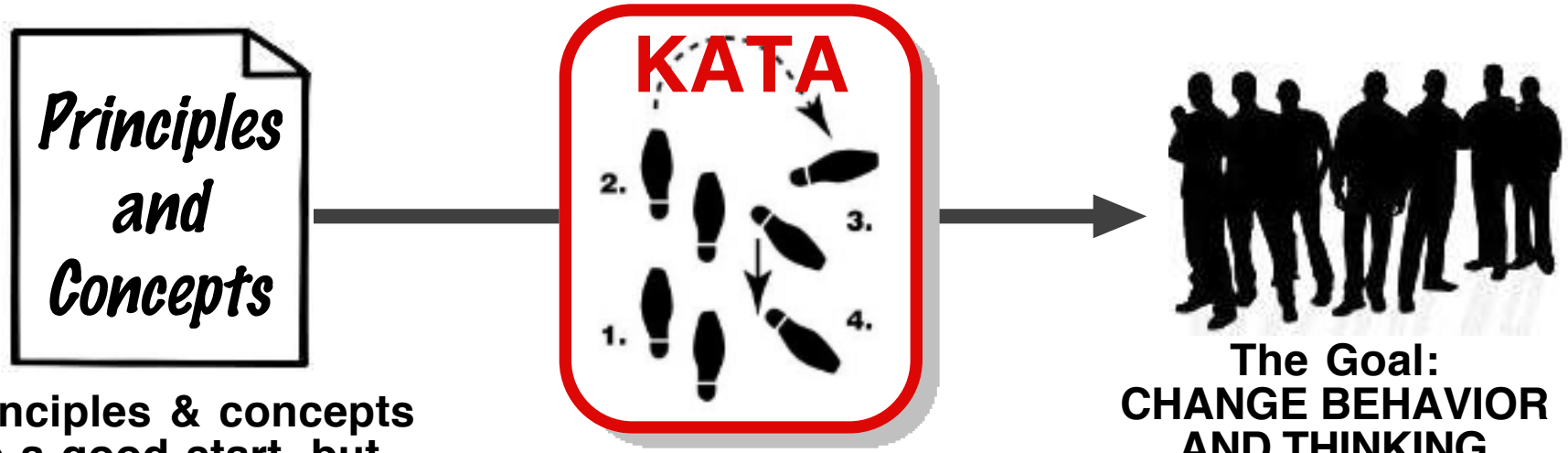
# THE ROLE OF KATA

(1) Kata help beginners start to acquire a new skill by providing step-by-step routines to practice. Think of them as "Starter Kata." The beginner's thinking is conditioned in a new way by the pattern of the Kata.

(2) Kata give the Coach a way to gage the Learner's performance (a point of comparison) and provide corrective feedback.

(3) Kata give you a way of developing a common mode of thinking and acting across a team or organization, by providing shared routines to teach and practice.

(4) Perhaps most important, Kata are an effective way to translate principles & concepts into something teachable!




Principles & concepts are a good start, but alone they don't change your habits.

Change comes from repeated experiences with a new pattern.

The Goal:
CHANGE BEHAVIOR AND THINKING
To create new habits, skills and culture in your team or organization.

# KATA PRACTICE GETS FLEXIBLE AS YOU GET MORE SKILLFUL

## Your use of each Kata will tend to go through these three stages*

### STAGE 1: FOLLOW (Practice the Kata exactly)

**As a beginner you try to execute the practice routines without modification, so you can absorb their fundamental patterns. This may feel awkward at the start but as you go through repetitions it should become more flowing. Concentrate on how to do the task, without worrying too much about the underlying theory.**

### STAGE 2: DETACH (Personalize your practice)

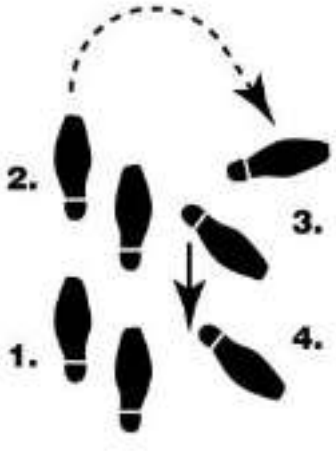
**Once you've acquired the basic patterns you can branch out. Don't think the goal is to stay with the rigid forms of Stage 1, because then your practice will become too formulaic. Once the basic forms have been absorbed into "muscle memory" and can be executed successfully ("proficiency" level) you can start to make modifications to your practice. You now appreciate and use Kata because you understand the technical wisdom -- the *why* -- within them, and can thus start to adapt the patterns to different situations. Remember, *knowledge ≠ understanding*.**

### STAGE 3: FLUENCY (Intuitive operating)

**At this stage you've absorbed the patterns of the Kata to such an advanced level that you can be creative and unhindered -- spontaneous and efficient -- while still working within the principles. You don't have to focus consciously on basics anymore, which makes you quicker and frees brain capacity for handling a greater range of situational inputs. At this stage you create your own approaches (within the principles) and can readily adapt what you've learned to individual circumstances.**

*Real life doesn't pass through such discrete stages, but it's a useful way to depict the progression.

# STAGE 1 = FOLLOW THE KATA EXACTLY




**The first stage of practicing a new pattern is to *do it as described*. Try to copy the pattern exactly; to replicate the routine in a deliberately precise way. The pattern may feel wrong or unnatural, but resist the temptation to change it at this point. That feeling is a normal part of learning something new!**

**We often dislike going through this deliberate phase at the beginning. It seems slow or illogical and we think it's not working. This is a mistake that can lock you into your current skillset. Once the pattern enters your unconscious and becomes more habitual it will get faster, smoother and easier. Think of your early practice as *going slow to get fast*.**

**As your proficiency increases you'll come to understand the purpose behind the steps. At that point you can be more open and develop your own style, so long as it continues to incorporate the purpose.**

# TWO ERROR MODES!

## *THE "PERMANENT BEGINNER"*

**A person unwilling to start with structured practice routines.**

**This person wants to be skilled or to Coach right away, or to change the Kata pattern. They resist taking the time and effort to internalize the Kata's pattern through practice, thinking they know better.**

**Everyone does not need to become an Expert in the skill; some proficiency is sufficient for most people. But anytime anyone is learning a new skill they're a beginner in that area and probably need to start with some structured practice.**

## *THE "IMPLEMENTER"*

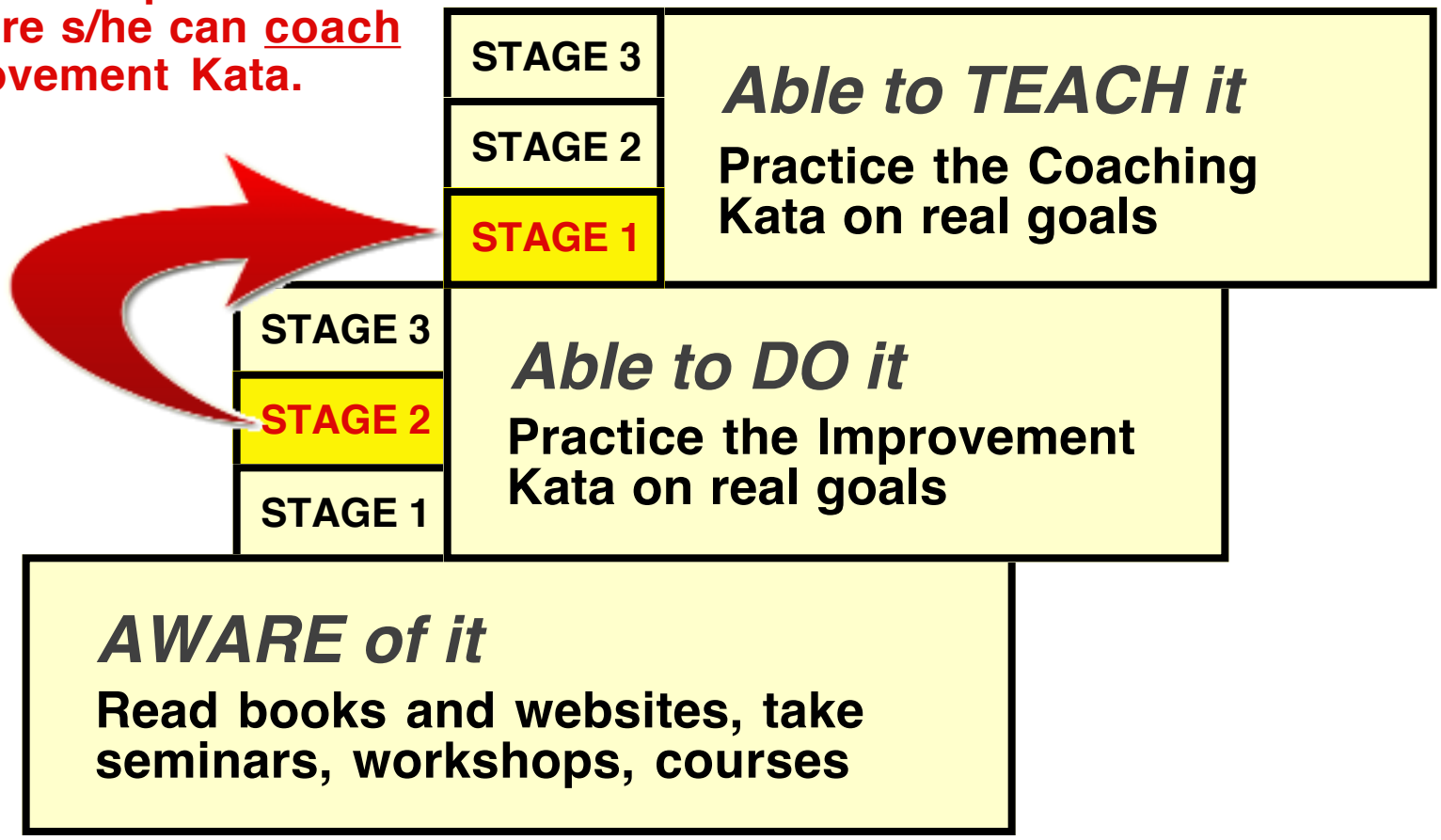
**A person who rigidly sticks with a structured practice routine permanently or too long.**

**This person mistakenly tries to apply and deploy the Improvement Kata practice routines as a turn-key problem-solving methodology. The IK is a set of practice routines for developing a pattern of thinking.**

**The practice routines of the Improvement Kata and Coaching Kata are part of a *skill-development process.* They are initial practice techniques ("Starter Kata") to help you develop the habit of approaching problems, goals and challenges in a scientific way.**

# THE PROGRESSION OF IK/CK PRACTICE

**DEMONSTRATED STAGE 2 PROFICIENCY in the Improvement Kata is ideally required to begin to practice coaching. The Coach needs to have personal experience with applying the Improvement Kata before s/he can coach the Improvement Kata.**




**STAGE 3: FLUENCY (intuitive operating)**
**STAGE 2: DETACH (Personalize your practice)**
**STAGE 1: FOLLOW (Practice the Kata exactly)**

# OVER TIME YOU CAN ALSO TAILOR THE IMPROVEMENT KATA PRACTICE ROUTINES TO SUIT YOUR ORGANIZATION

**Every organization is unique, and each ultimately requires slightly different practice routines.**

**However, the first stage of your practicing is to try to do the routines presented here exactly. If you practice daily and gain proficiency you'll absorb the scientific logic behind these routines. Then, at that point, you can adapt them to your situation.**

**By initially setting limits on practice improvisation you'll acquire a sense for the essence, which then equips you to apply the Improvement Kata pattern to diverse situations skillfully.**

# HOW LONG DO YOU HAVE TO PRACTICE EACH KATA EXACTLY BEFORE YOU CAN START TO VARY IT'S ROUTINE?



**The answer to this question depends on each Learner's progress. The idea is to reach "proficient" level before significantly varying the routine.**

**In general this may take 2 months of daily practice for each Kata. Of course, you will be practicing several Kata in that time.**

**One guideline is that a Learner will need to work on at least three successive Target Conditions and conduct at least 25 experimenting cycles to establish basic competency with the Improvement Kata pattern.**

**Beyond this initial practicing, whenever you want to train another beginner or want to refresh some basics, you go back to the Kata again.**

# THIS HANDBOOK PROVIDES PRACTICE ROUTINES FOR THE STEPS OF IMPROVEMENT KATA AND COACHING KATA

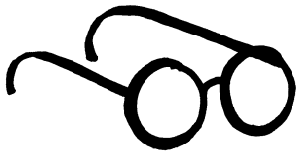
## IMPROVEMENT KATA

LEARNER

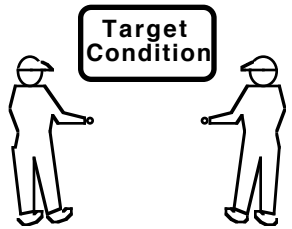
**Understand the Direction**



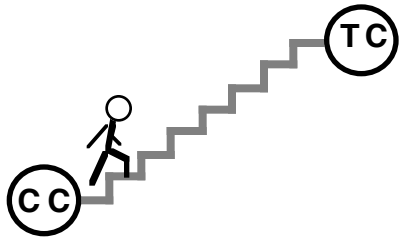

**Grasp the Current Condition**



**Establish the Next Target Condition**




**Iterate Toward the Target Condition**

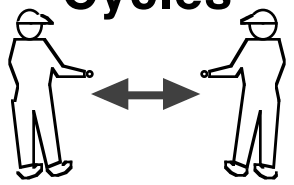



## COACHING KATA

COACH

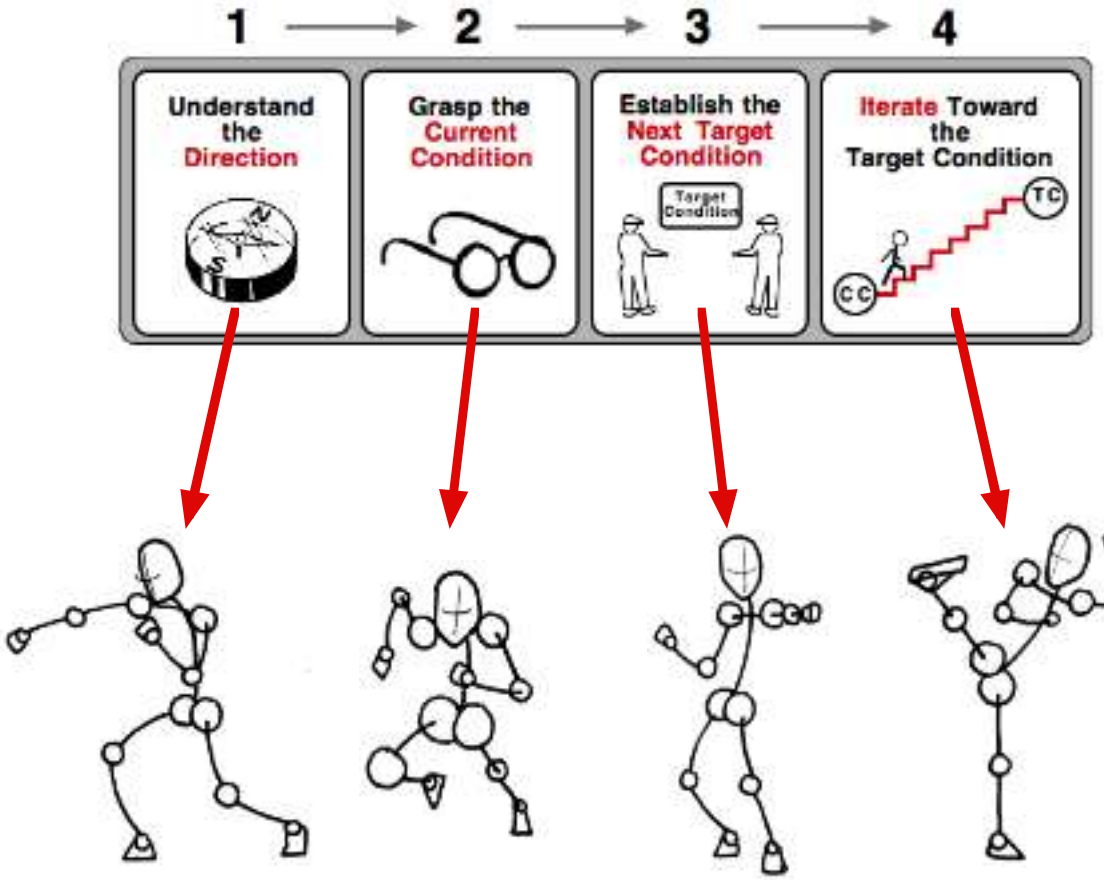
**'Planning' Coaching Cycles**

**'Executing' Coaching Cycles**



# NOTE THE DISTINCTION

**The scientific pattern of the four steps of the Improvement Kata is a universal model**




**Coached practice of the specific practice routines (Kata) for each step is how you start to operationalize and internalize that pattern**

**The practice routines for the Improvement Kata & Coaching Kata are teaching routines to shift your underlying thought patterns. The idea is that as the scientific pattern of thinking becomes more habitual, you can move in the direction of *"this is just how I think and do things."***

# WHERE YOU'LL FIND THE KATA INSTRUCTIONS

**A Kata for Setting the Challenge (Step 1)**

**A Kata for Grasping the Current Condition (Step 2)**

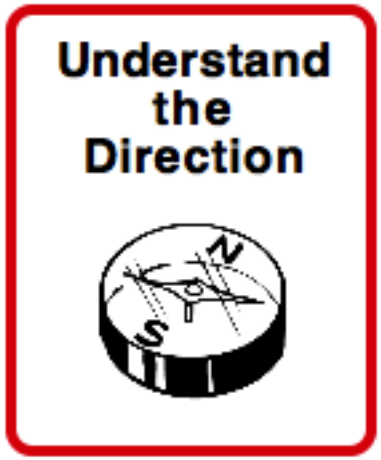
**A Kata for Establishing a Target Condition (Step 3)**

**A Kata for Iterating to the Target Condition (Step 4)**

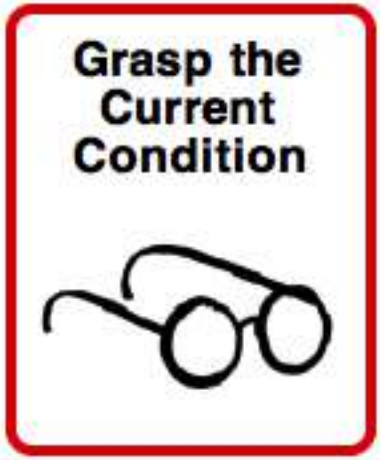
**A Kata for Coaching**



# THE KATA YOU'LL BE PRACTICING




① **Understand the Direction**. The Improvement Kata pattern operates with an overarching sense of direction or goal. Understanding the "challenge" is important because your practicing should be related to the real-world business needs and objectives of your organization. Improvement Kata / Coaching Kata practice is more effective when it involves meeting actual challenges and goals. These are not theoretical exercises.

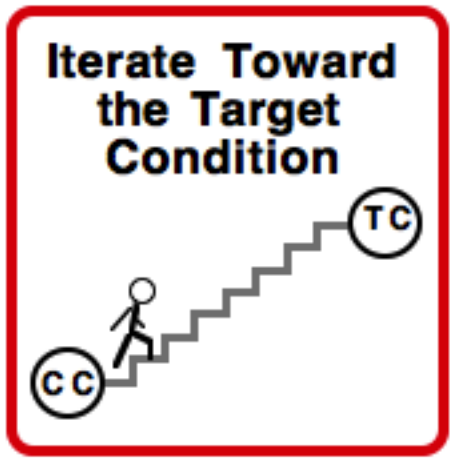



② **Grasp the Current Condition**. Once the direction coming from the level above you is understood, you need to develop an understanding of the current (starting) condition at your level and process. Where are you today?

You'll practice this by following a systematic series of five steps called Process Analysis. Process Analysis is a routine or kata that allows anyone to quickly grasp the key characteristics of a process that define its capability and current pattern of work. The analysis is conducted through direct observation and simple, pencil & paper analysis tools.




③ **Establish the Next Target Condition**. Once the Current Condition is adequately understood, you develop a descriptive next Target Condition for your process, which includes a specified achieve-by date. Where do you want to be next on the way to the longer-term challenge? The Target Condition is an objective that will stretch you and require experimentation, discovery and new learning in order to be achieved.




④ **Iterate Toward the Target Condition**. In this step you conduct experiments against obstacles to gain further knowledge and improve the process in the direction of the Target Condition. You'll practice by using a pencil & paper tool to plan, record and reflect on each experiment as you strive to reach the Target Condition on time.




⑤ **Daily Coaching Cycles** come into play as the Learner works iteratively toward the Target condition. This is a systematic routine for a structured dialog between the Coach and Learner, whereby the Coach provides procedural guidance and corrects the Learner's practice as necessary.




# CONCLUSION

# EVENTUALLY YOUR ORGANIZATION CAN DEVELOP ITS OWN IMPROVEMENT KATA

**Once enough people in your organization become proficient in the routines of the Improvement Kata (a 'critical mass') you can either stick with using the practice routines in this Handbook for teaching beginners in your organization, or evolve from them your own Kata for teaching beginners.**

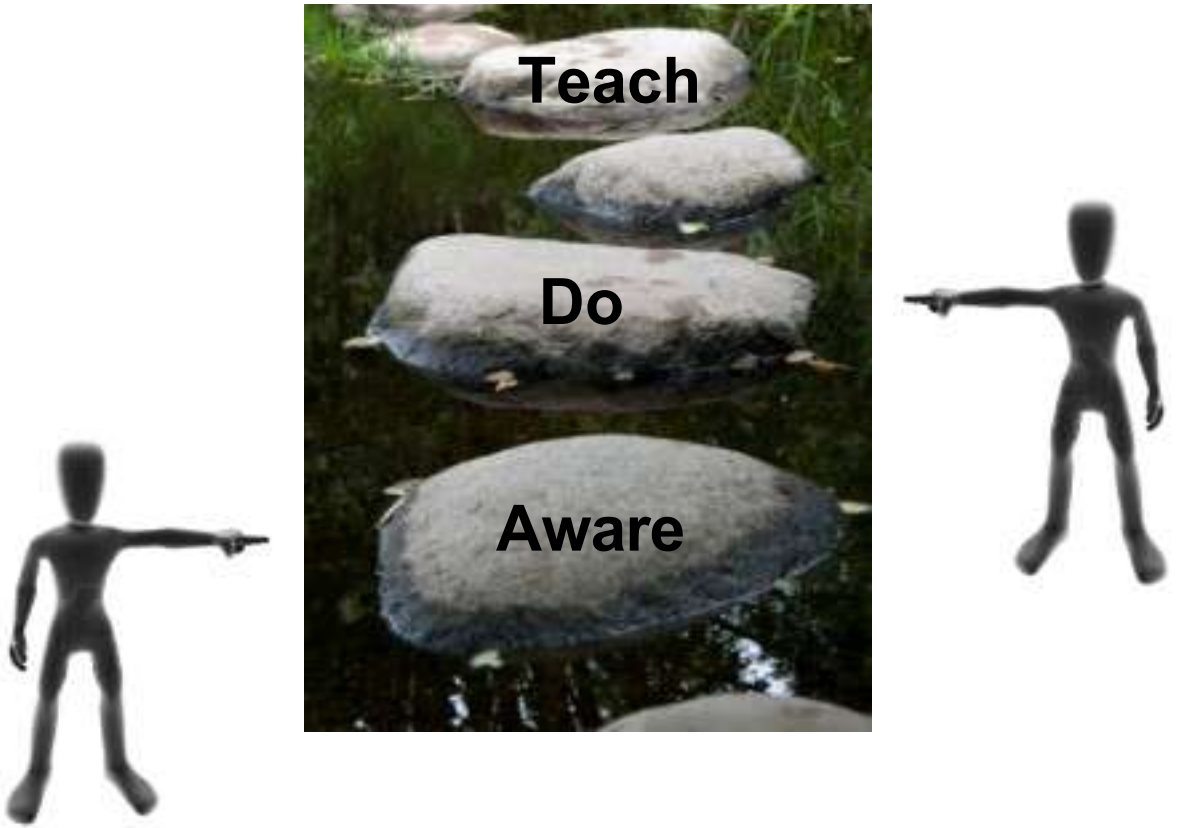
**The key is to first reach to a point where enough people understand the scientific pattern of the Improvement Kata deeply. Then you will be in a good position to make decisions about exactly what Kata to use for practice in your organization.**

**The basic pattern and scientific approach of the Improvement Kata should always remain, however. Make it your own, but the basic core should be recognizable.**

# YOUR NEXT STEP

**As a next step it's a good idea to familiarize yourself with the contents of this Handbook, by going over the whole Handbook.**

**Then move back to Part II and follow the instructions to begin the practice / learning process for each step of the Improvement Kata.**



# WHAT WILL BE YOUR PATH?

## For practicing and internalizing the routines of the Improvement Kata and Coaching Kata



**How much practice will be required depends on how you practice (see the *Practice Tips* at the end of this chapter) and your predispositions.**

**You have an opportunity! The never-ending need for improvement and evolution gives you and your team a perfect opportunity to keep honing your skills. The elegant trick is that while you're practicing the Improvement Kata you're applying it to real goals, always to the best of the current level of your and your team's abilities.**



# CHAPTER APPENDIX

- **Nine Guidelines for Deliberate Practice**
- **Skills Assessment**



# NINE GUIDELINES FOR DELIBERATE PRACTICE

1) **Get an Overview of What You're Trying to Learn**
2) **Get a Coach for Corrective Inputs**
3) **Be Enthusiastic About Practicing**
4) **Break the Skill Pattern into Pieces, and Practice Only One or Two Pieces at a Time**
5) **Adopt Some 'Beginner Mindset'**
6) **Deliberately Follow the Prescribed Pattern Exactly at First**
7) **Practice a Little Every Day**
8) **Practice on Something Real**
9) **Practice at the Edge of Your Capability**

These guidelines are based on *The Talent Code* by Daniel Coyle, *Talent is Overrated* by Geoff Colvin, *Human Memory: Theory and Practice* by Alan Baddeley and the Bjork Learning and Forgetting Lab at UCLA.

| Practice Guideline | Details |
|---|---|
| 1) Get an Overview of What You're Trying to Learn | • Get a picture of the parts of the Improvement Kata and how they come together as a whole in correct performance of the skill.<br>• Explain the coaching method to the Learner beforehand, so s/he can understand what is taking place. |
| 2) Get a Coach for Corrective Inputs | • You'll need periodic input and guidance from someone who observes you, detects your errors and gives you advice on how to correct them.<br>• An experienced Improvement Kata coach may or may not be available. If not, grab someone else who is practicing the Improvement Kata and coach one another.<br>• Once you master the Improvement Kata you can coach others. |

| | |
|---|---|
| **3) Be Enthusiastic about Practicing** | • If you can develop passion for what you're learning it will help you devote yourself to practicing the Improvement Kata pattern even when it presents difficulties.<br>• It's normal that there will be plateaus when it seems like you aren't making progress. Take a break for a few days or go back to some basics. Listen to your coach for advice. |
| **4) Break the Skill Pattern into Pieces, and Practice Only One or Two Pieces at a Time** | • Kata are usually practiced in pieces, until the whole sequence is learned. This is called *chunking*.<br>• Do not try to master too many chunks at once. The Coach should determine what the learner is ready to practice next. |

| | |
|---|---|
| **5) Adopt Some 'Beginner Mindset'** | **Caution! The more you are already familiar with a topic, the less you may be open to learning something new about it. Closing your mind in this way can condemn you to remaining only a beginner in the new skill area.**<br><br>**A first step for any Learner is to acknowledge that whenever we want to adopt a new way of thinking and acting, for a while we're going to be a beginner in that particular area. Without resigning our ego to starting with some practice we're destined to remain at beginner level.**<br><br>**Once you've internalized the desired pattern you can refine your own interpretations and don't need to practice the Kata exactly any more. The resulting capability and habits are the goal, not the Kata itself.**<br><br>**The Kata don't go away entirely though. Just like professional athletes and musicians, even advanced students periodically practice some basics under guidance of a coach. It's like keeping a tool sharp.** |

## 6) Deliberately Follow the Prescribed Pattern Exactly at First

**The first stage of practicing is to try to copy the pattern exactly; to replicate the kata in a deliberately precise way. The pattern may feel wrong or unnatural at first, but resist the temptation to change it at this time.**

**Initial practicing* is deliberate and uses your conscious mind, which is slow. Once the pattern enters your unconscious and becomes a normal, habitual way of working it gets faster, smoother and easier. Think of your early practice as *going slow to get fast*.**

**We often dislike going through this deliberate phase at the beginning, and its slowness can lead us to think it's not working. That's a mistake that can lock you into your current skillset.**

**As your proficiency increases you'll see the purpose behind the steps. At that point you can be more open and develop your own style, as long as it continues to incorporate the purpose, and coach others.**

* *Have beginners practice on processes that are easy to understand and where it is easy to see how to apply the Improvement Kata pattern.*

*This is like training in music and sports, where beginners don't start on a difficult piece.*

## 7) Practice a Little Every Day

**Make practicing part of normal daily work, not a special event.**

*Note: This may lead you to shift emphasis away from periodic training or improvement efforts led by Lean staff, trainers or consultants, to daily practice and improvement that's coached by your line managers. That's a healthy development!*

**According to neuroscience, to develop new habits and maintain them it's generally better to train for a short time frequently than in massed training sessions. Many skills are best learned when practice sessions are short and frequent.**

**A key to teaching these skills is to teach them as an everyday occurrence; not as part of a curriculum, but as a daily routine using what people are normally doing to help them learn and apply the skills. Be sure to make practicing the Improvement Kata part of every workday.**





## 8) Practice on Something Real

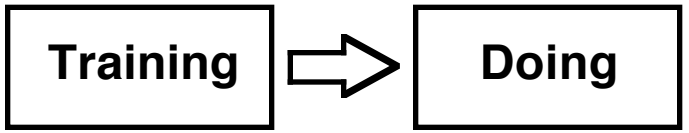
**Combine training & doing by practicing on real goals.**

**In sports and music, training and performance are typically separated. But this is not financially workable in business.**

**In the model of practice presented in this Handbook, the Learner does two things simultaneously: Strives for a real target condition + practices the pattern of the Improvement Kata.**

**Improvement Kata practice is more likely to generate mindset change when the Learner is striving for a *real* Challenge and Target Condition, because the Learner is focusing on something meaningful and their emotions are involved.**

***Not this***




***But this (combined)***



## 9) Practice at the Edge of Your Capability

*The difficulty-level of the next Target Condition should be just a bit beyond the Learner's current skill level.*

- **Learning a skill requires making small errors and then working to correct those points.**
- **Target those aspects of the skill pattern that currently give you the most difficulty. Deliberate practice aimed at remedying weaknesses is a better predictor of expertise than raw number of hours.**

***"When most people practice, they focus on the things they already know how to do. Deliberate practice is different. It entails considerable, specific, and sustained efforts to do something you can't do well—or even at all. Research across domains shows that it is only by working at what you can't do that you turn into the expert you want to become."***

From: The Making of an Expert, by K. Anders Ericsson, Michael J. Prietula, and Edward T. Cokely, Harvard Business Review, July 2007




# SKILLS ASSESSMENT

# AN IMPROVEMENT KATA SKILL-LEVEL SCALE

## Note that this scale measures Improvement Kata skill level or degree of habit formation, not the person

**You can use this proficiency scale to help assess a Learner's growth and readiness to Coach. It's a guideline to give you behaviors to look for as Learners develop their capability.**

| Stage | Level | Description | Standard of Work | Autonomy |
|---|---|---|---|---|
| 3 | ***Expert*** Not everyone reaches this level | No longer relies on rules / guidelines / maxims<br>Grasp of situations & decision making intuitive<br>Vision of what is possible | Excellence achieved with relative ease | Able to take responsibility for going beyond existing standards and creating own interpretations |
| 2 | ***Proficient*** | Has unconscious understanding and applies the IK routine more on "auto pilot." Deviates from the strict kata to fit the situation. Sees what's most important in a situation.<br>High degree of self-efficacy with the IK pattern. | Fully acceptable standard achieved routinely | Able to take full responsibility for own work, and coach others |
| | ***Competent*** | Has standardized and routinized procedures<br>Sees actions partially in terms of LT goals<br>Can prioritize | Fit for purpose, though may lack refinement | Able to achieve most tasks using own judgement |
| 1 | ***Advanced Beginner*** | Actions are based on the kata<br>Situational perception still limited<br>All aspects are given equal importance | Straightforward tasks likely to be completed to an acceptable standard | Able to achieve some steps using own judgement, but coaching needed for overall task |
| | ***Novice*** | Strict adherence to the Kata. Little situational perception & discretionary judgement.<br>Has to purposely concentrate on the IK routine.<br>Low self-efficacy in applying the IK routine. | Unlikely to be satisfactory unless closely coached | Needs close coaching and instruction |

Scale adapted from the Dreyfus Model of Skill Acquisition
Dreyfus, Stuart E., *Formal Models vs. Human Situational Understanding: Inherent Limitations on the Modelling of Business Expertise*, Berkeley, 1981

# FROM *NOVICE* TO *PROFICIENT*

## You don't need to reach 'Expert' level with the Improvment Kata

**Generally you're practicing in order to get from 'Novice' level to 'Proficient' level. Not everyone reaches 'Expert' level, and you can be fully capable without it.**



| Stage | Level | Description | Standard of Work | Autonomy |
|---|---|---|---|---|
| 3 | ***Expert*** Not everyone reaches this level | No longer relies on rules / guidelines / maxims<br>Grasp of situations & decision making intuitive<br>Vision of what is possible | Excellence achieved with relative ease | Able to take responsibility for going beyond existing standards and creating own interpretations |
| 2 | ***Proficient*** | Has unconscious understanding and applies the IK routine more on "auto pilot." Deviates from the strict kata to fit the situation. Sees what's most important in a situation.<br>High degree of self-efficacy with the IK pattern. | Fully acceptable standard achieved routinely | Able to take full responsibility for own work, and coach others |
| | ***Competent*** | Has standardized and routinized procedures<br>Sees actions partially in terms of LT goals<br>Can prioritize | Fit for purpose, though may lack refinement | Able to achieve most tasks using own judgement |
| 1 | ***Advanced Beginner*** | Actions are based on the kata<br>Situational perception still limited<br>All aspects are given equal importance | Straightforward tasks likely to be completed to an acceptable standard | Able to achieve some steps using own judgement, but coaching needed for overall task |
| | ***Novice*** | Strict adherence to the Kata. Little situational perception & discretionary judgement.<br>Has to purposely concentrate on the IK routine.<br>Low self-efficacy in applying the IK routine. | Unlikely to be satisfactory unless closely coached | Needs close coaching and instruction |

# A PLANNING & ASSESSMENT FORM FOR IMPROVEMENT KATA SKILL

**Coach and Learner <u>together</u> can use the form on the next page to plan and track the Improvement Kata skill development of the Learner over periods of time.**

**How the form might be used:**



Able to Coach

- **For any kata the Learner is practicing indicate the current skill level with a filled-in circle and the date.**
- **For any kata the Learner is practicing indicate the next target skill level with an open circle and the target date.**

**The form becomes a bar chart from left to right.**

**Determining a person's overall skill level is, of course, a somewhat subjective judgement. It's also not the most important factor in getting more skillful.**



**More important than an overall skill-level assessment is that in their daily coaching cycles the Coach and Learner decide on what small aspect(s) of the kata pattern the Learner should work on improving next.**



| Learner: | | | Coach: | | |
|---|---|---|---|---|---|
| | STAGE 1 PRACTICING | | STAGE 2 PRACTICING | | STAGE 3 |
| | *Novice* | *Advanced Beginner* | *Competent* | *Proficient* | *Expert* |
| **Description** | Strict adherence to the Kata. Little situational perception & discretionary judgement.<br>Focuses on the routine.<br>Low self-efficacy with IK. | Actions based on the kata<br>Situational perception still limited<br>All aspects are given equal importance | Has standardized and routinized procedures<br>Sees actions partially in terms of long term goals<br>Can prioritize | Unconscious understanding. Applies IK on 'auto pilot.' Sees what's most important & fits actions to situation.<br>High self-efficacy with IK. | No longer relies on rules / guidelines / maxims<br>Grasp of situations & decision making intuitive<br>Vision of what is possible |
| **Standard of Work** | Unlikely to be satisfactory unless closely coached | Straightforward tasks likely to be completed to an acceptable standard | Fit for purpose, though may lack refinement | Fully acceptable standard achieved routinely | Excellence achieved with relative ease |
| **Autonomy** | Needs close coaching and instruction | Able to achieve some steps using own judgement, but coaching needed for overall task | Able to achieve most tasks using own judgement | Able to take full responsibility for own work, and coach others | Able to take responsibility for going beyond existing standards and creating own interpretations |
|  | | | | | Not everyone |
|  | | | | | reaches this level |
|  | | | | | Not everyone |
|  | | | | | reaches this level |

# A COACHING KATA SKILL-LEVEL SCALE

| Coach: | | | 2nd Coach: | |
|---|---|---|---|---|
| **Stage** | **Level** | **Description** | **Autonomy** | **Assessment & Planning** |
| **3** | ***Expert***<br>Not everyone reaches this level | • Intuitive grasp of coaching based on deep, practiced understanding<br>• Direct, yet supportive<br>• Coaching conversations are natural; learner doesn't notice being coached<br>• Sought after for coaching advice | 2nd Coach needed occasionally | Not everyone reaches this level |
| **2** | ***Proficient*** | • Clear perception of learner's gaps or weaknesses<br>• Uses coaching to guide: adapts to the situation, asks meaningful questions<br>• Ability to assess learners preferred learning style (auditory, visual, kinesthetic)<br>• 2nd Coach capability | 2nd Coach needed periodically | |
| | ***Competent*** | • Capable of sensing learners uncertainty level and knowledge threshold<br>• Consistently coaches learner with a repeatable pattern<br>• Coaching embedded in normal daily work | | |
| **1** | ***Advanced Beginner*** | • Narrow "development perception"; recognizes need for 2nd coach<br>• Becoming comfortable providing feedback to learner<br>• Beginning to observe and listen more (vs. talk and advise)<br>• Asks some probing questions to gain insight | Must have a proficient 2nd Coach at each coaching cycle | |
| | ***Novice*** | • Rigidity in asking questions / uses closed ended questions<br>• Lack of discipline to follow a pattern and recognize its importance<br>• Focuses on results (command and control)<br>• Not able to hear and identify when learner has hit a Threshold of Knowledge | | |

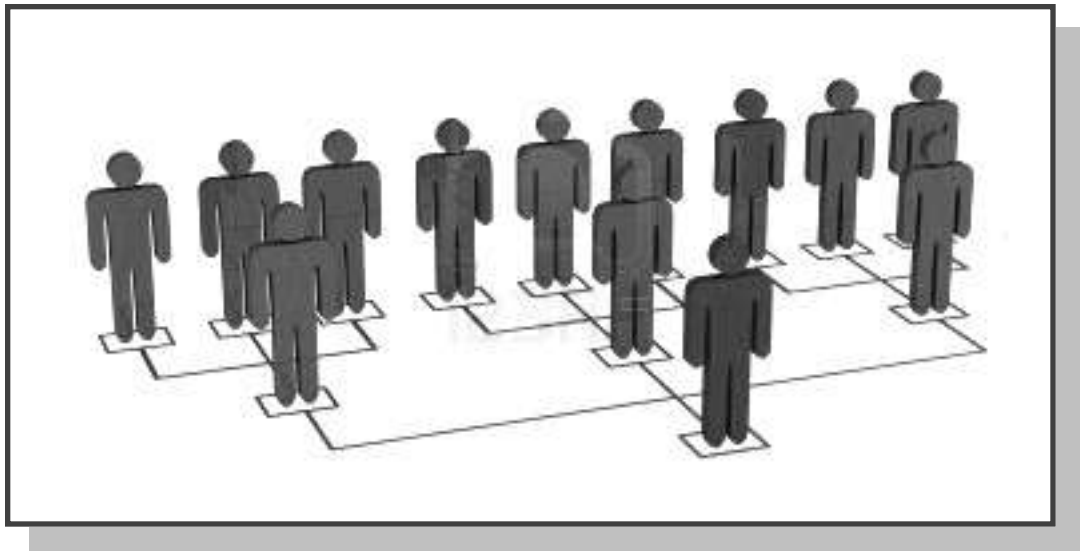
**You can use this proficiency scale to help assess a Coach's growth and readiness to be a 2nd Coach. It's a guideline to give you behaviors to look for as Coaches develop their capability. It's also helpful in focusing conversations with Coaches about their perceived versus actual capability.**

**Most important is that the Coach and their 2nd Coach decide on what small aspect(s) of the Coaching Kata the Coach should work on improving next.**

Scale by Yvonne Muir, Jennifer Ayers & Julie Simmons

# Chapter 3

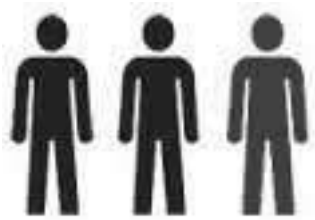
## ROLES AND STRUCTURE FOR DAILY IK PRACTICE



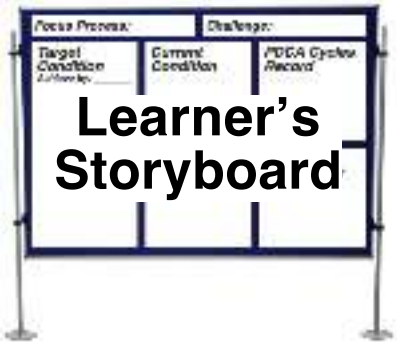
# THIS CHAPTER PROVIDES GUIDELINES ON THE FOLLOWING TOPICS

## This chapter explains the setup for the practicing that's described in PART II and PART III of this Handbook

**The Basic Roles**



**The Learner's Storyboard**




**Selecting the Focus Process**



**Deploying IK Practice in an Organization**



# IT'S ABOUT DEVELOPING A DAILY COACH/LEARNER PROCESS IN YOUR ORGANIZATION

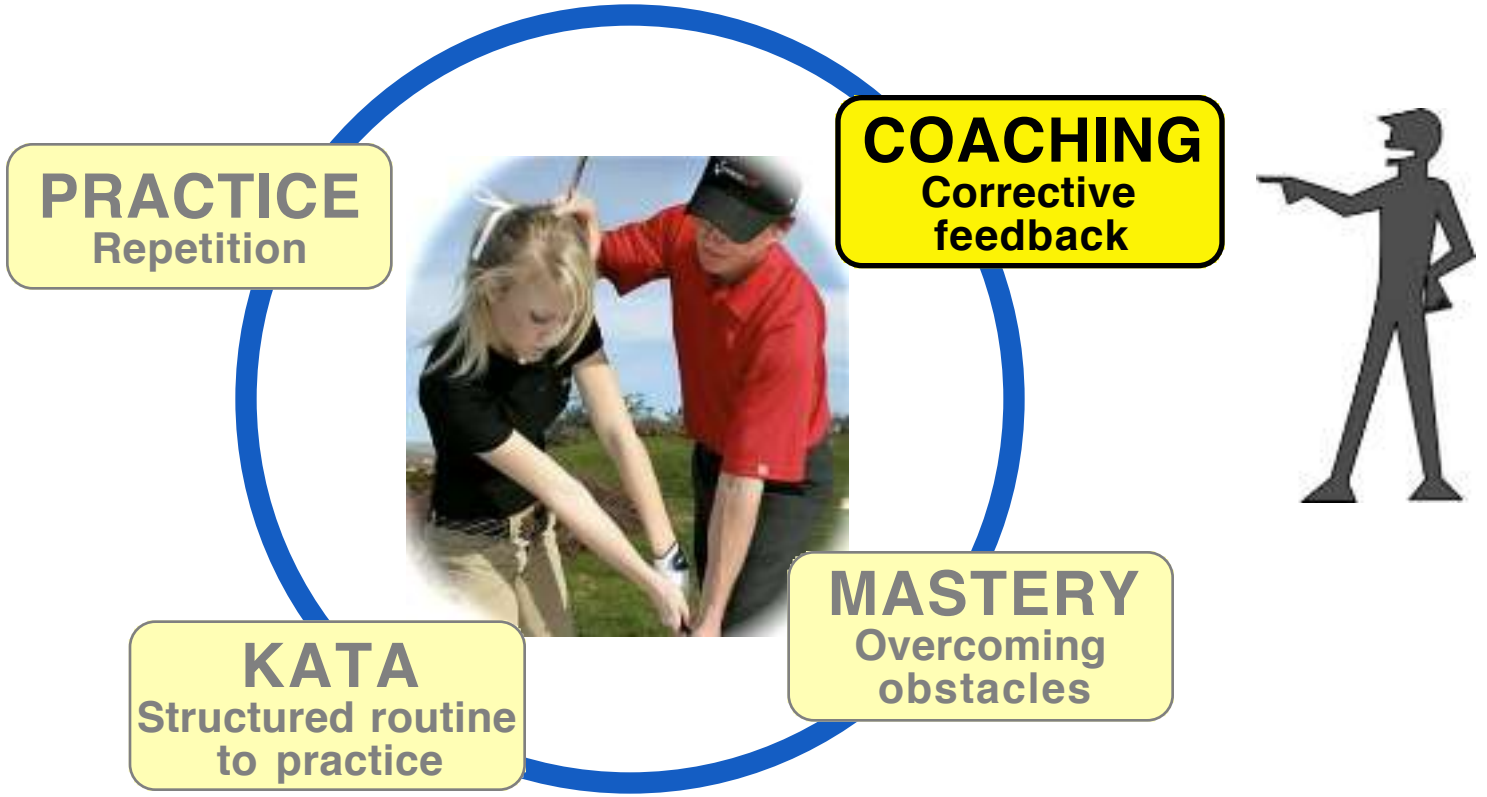
**To coach people in practicing the Improvement Kata pattern on real processes in everyday work, with the goal of making it part of the culture**



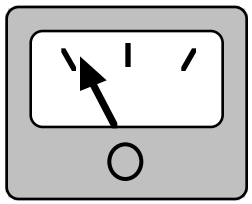
**The routine of the Improvement Kata isn't complicated, but it can be difficult to practice because it's not intuitive/natural and we're not used to it, so we tend to default to the familiar.**

**As in sports and music, practicing a skill should be done under periodic observation and guidance of an experienced coach. Without coaching we lose our way and don't practice the right pattern, or practice ineffectively. Without coaching, a change in the our mindset -- in our brain's wiring -- is unlikely to occur.**

# COACHING IS A KEY VARIABLE IN KATA PRACTICE




**Practice with corrective feedback is an important part of effective skills training.**



**If the Learner is not learning the Improvement Kata or if the target condition is not being reached, examine the coaching.**

# (1) The Basic Roles



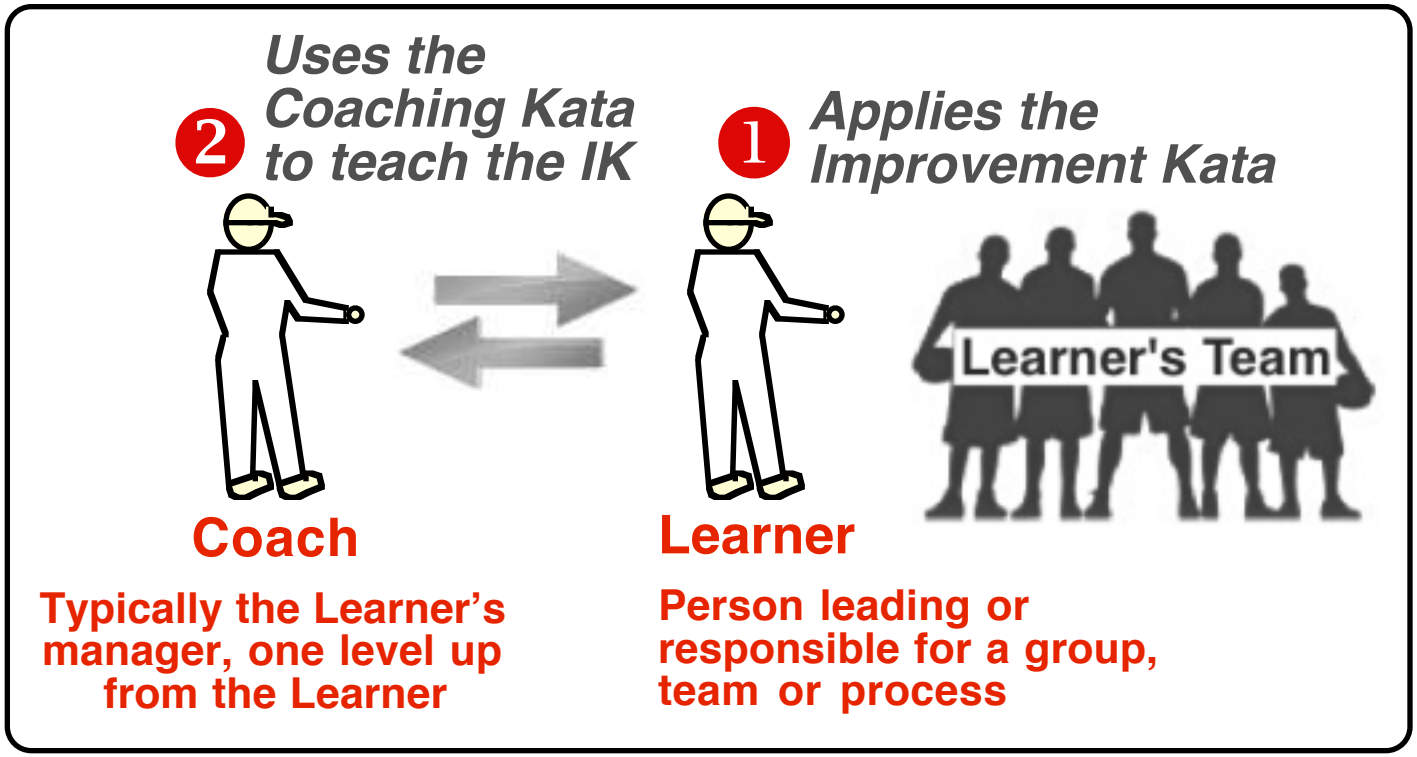
# THE TWO CORE ROLES ARE *COACH & LEARNER*

- These two roles usually mirror a reporting relationship, with the Coach being the Learner's manager, not a staff person. (There can be exceptions.) That is, when the Improvement Kata is used up-and-down an organization these two roles cut *across* each level of the organization.
- Coaching is done one Learner at a time. A Coach (manager) may have several Learners, but coaches them at different times.
- The practicing gets integrated into the Coach and Learner's normal daily work.

**TERMINOLOGY**

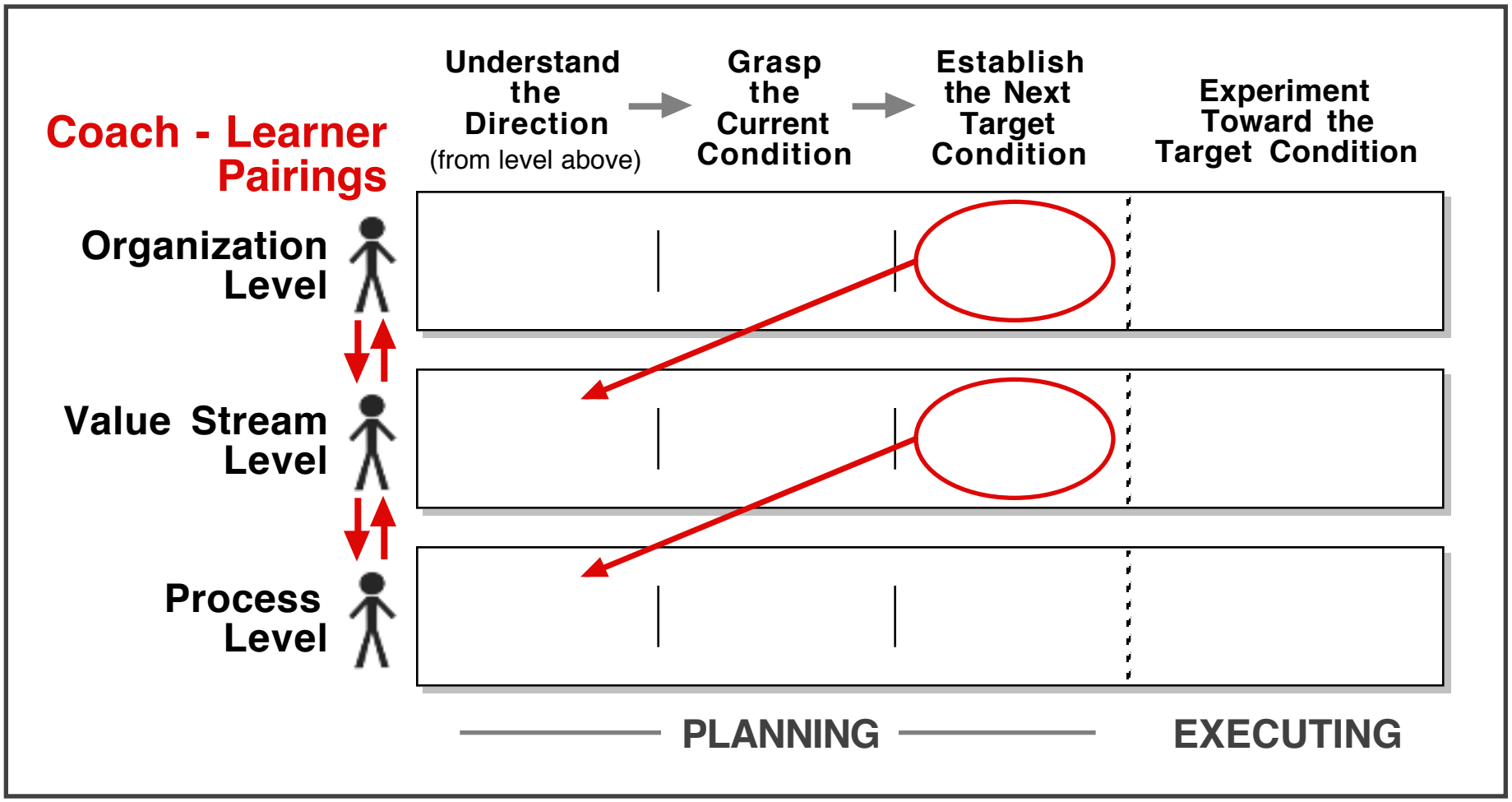
**This Handbook refers to *Coach & Learner***

**Some organizations use *Mentor & Mentee* or *Coach & Coachee***



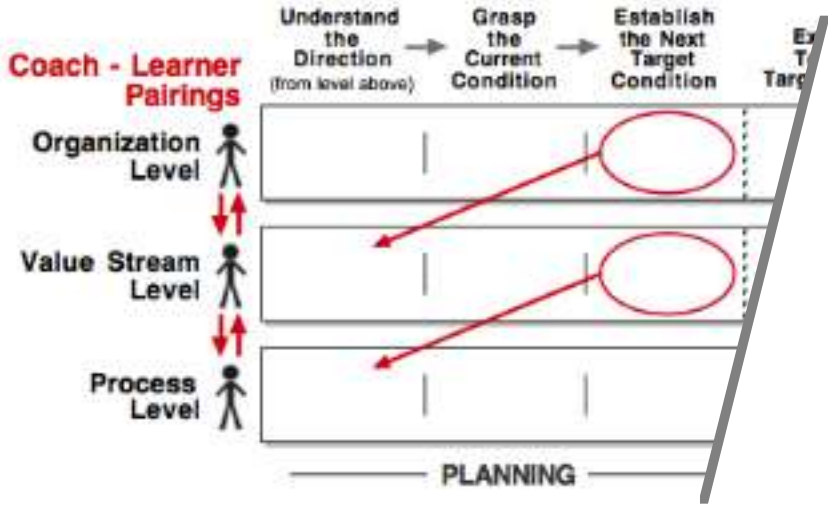
# COACHING ACROSS THE ORGANIZATION'S LEVELS

**The Coach / Learner pairing repeats across each level of the organization, with each Learner applying the Improvement Kata at their level and coaching the level below. Notice how the *Target Condition* from the level above becomes the *Direction* for the level below.**




Based on an illustration by Emiel van Est

# IT'S "NESTED" COACHING



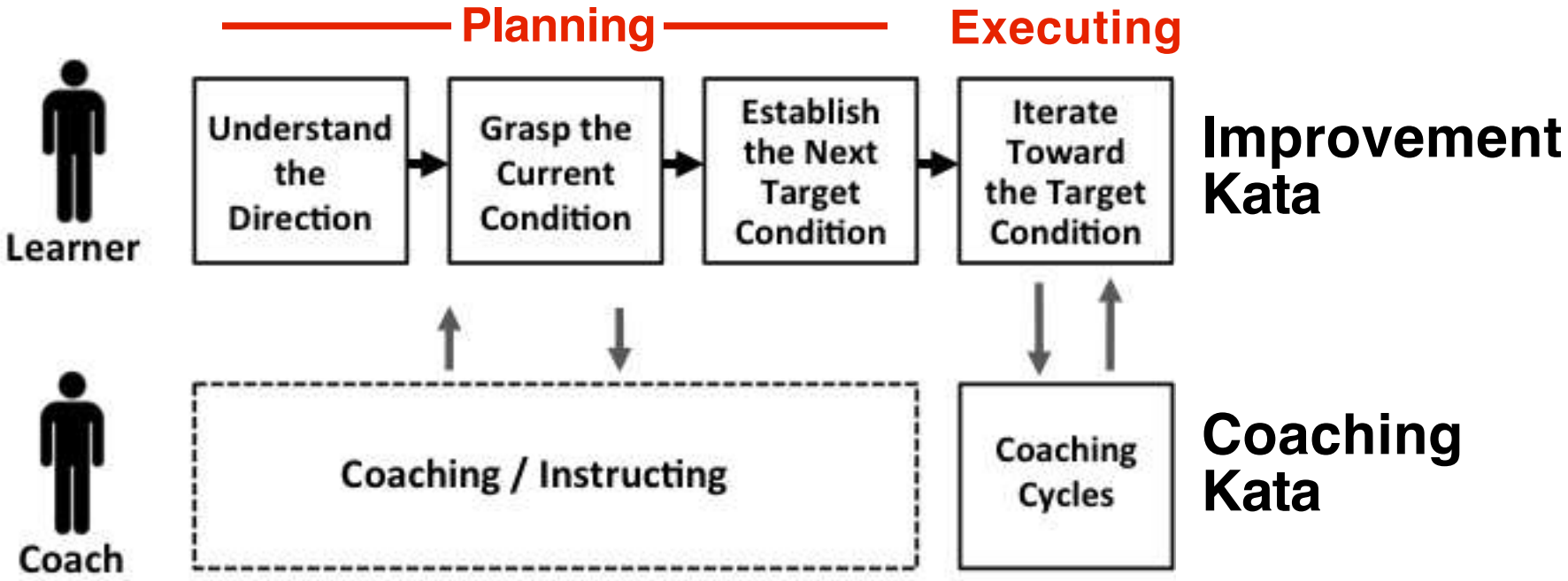

**Through nested coaching & storyboards from the senior level... to the value-stream level... to the process level, each Learner has responsibility for improvement at their process/level and for coaching the next level down. Each Leaner focuses on their next target condition, which is driving improvement that links back to the business strategy.**

**The coaching cycles that happen from the senior level down focus on an improvement theme that each Learner has a piece of.**

**In addition, a process owner has other things in their process that they cannot let slip and may have improvement objectives for those as well. A kata-proficient process owner will also apply the Improvement Kata pattern to those topics. The Improvement Kata is a meta pattern that gets applied to any goal.**



# THE COACH WILL ACCOMPANY THE LEARNER THROUGH THE ENTIRE IK PROCESS

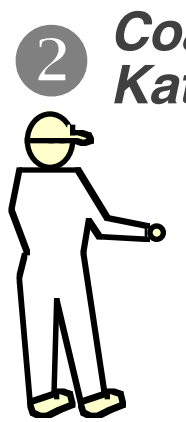


# TWO DIFFERENT FOCAL POINTS

**The Coach's goal is to increase the Learner's skill in applying the Improvement Kata pattern.**

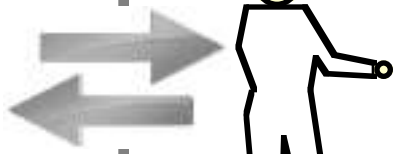
**The focus here is developing the Learner's ability to meet challenging objectives using the Improvement Kata pattern, by engaging and guiding the Learner in practicing the pattern.**

**The Coach must have experience applying the Improvement Kata**

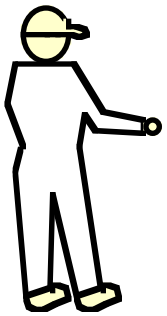


**2 *Coaching Kata***

**Coach**



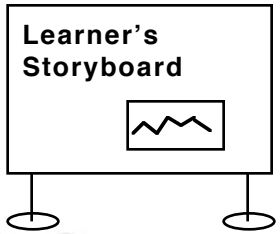
**1 *Improvement Kata***



**Learner**

**The Learner's goal is to use the pattern of the Improvement Kata to achieve a target condition.**

**The focus here is using the pattern of the Improvement Kata to achieve a target condition at the Learner and Learner's team's level in the organization.**







***Focus here is on developing the Learner's IK skill***

***Focus here is on improving a process by using the IK pattern***

# KEY POINT ABOUT THE LEARNER AND THE COACH

**There is a special overlap of responsibility between the Coach and the Learner. They're in it together.**



**The Learner is responsible for the doing.**

**The Coach is dependent on the Learner for achieving the desired results, but can only give procedureal advice to the Learner. Why? Because the solutions aren't known yet, and because giving solutions short-circuits the Learner's skill development.**

**A Coach can't go into the field and play, s/he can only develop the players.**

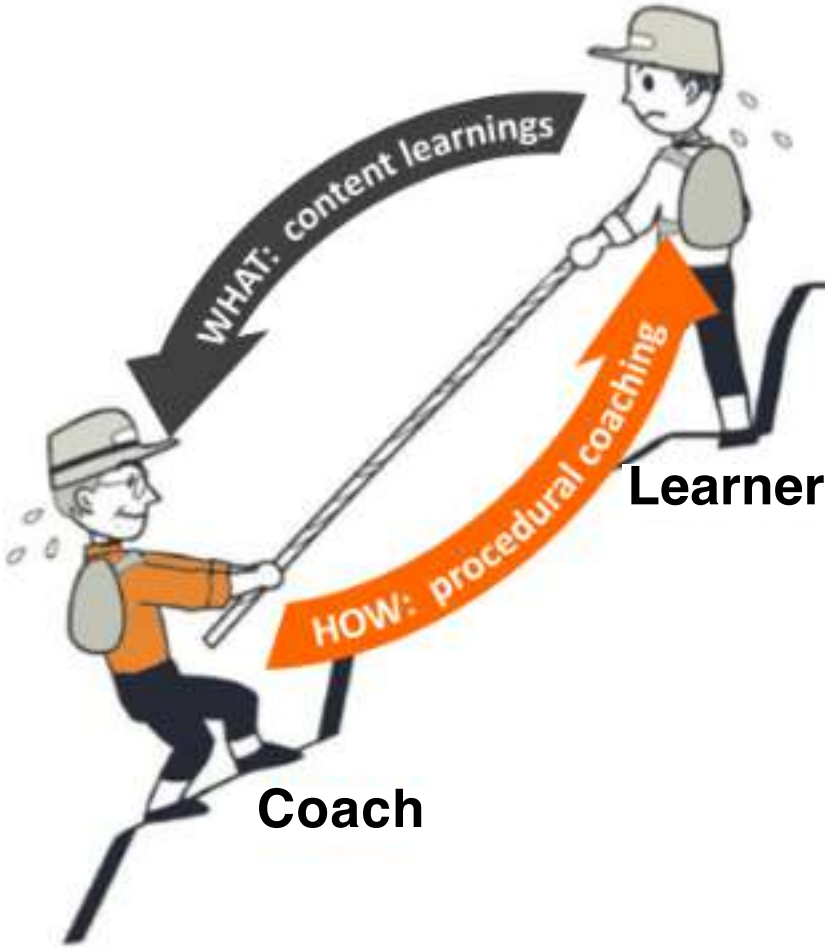
**This overlap creates an interdependence between the Coach and Learner, like two runners in a three-legged race. The Coach is as dependent on the Learner as the Learner is on the Coach.**

**The Learner works on the steps to the target condition (the *what*), while the Coach works on *how* the learner is approaching it.**

# THE INTERDEPENDENCE BETWEEN COACH & LEARNER

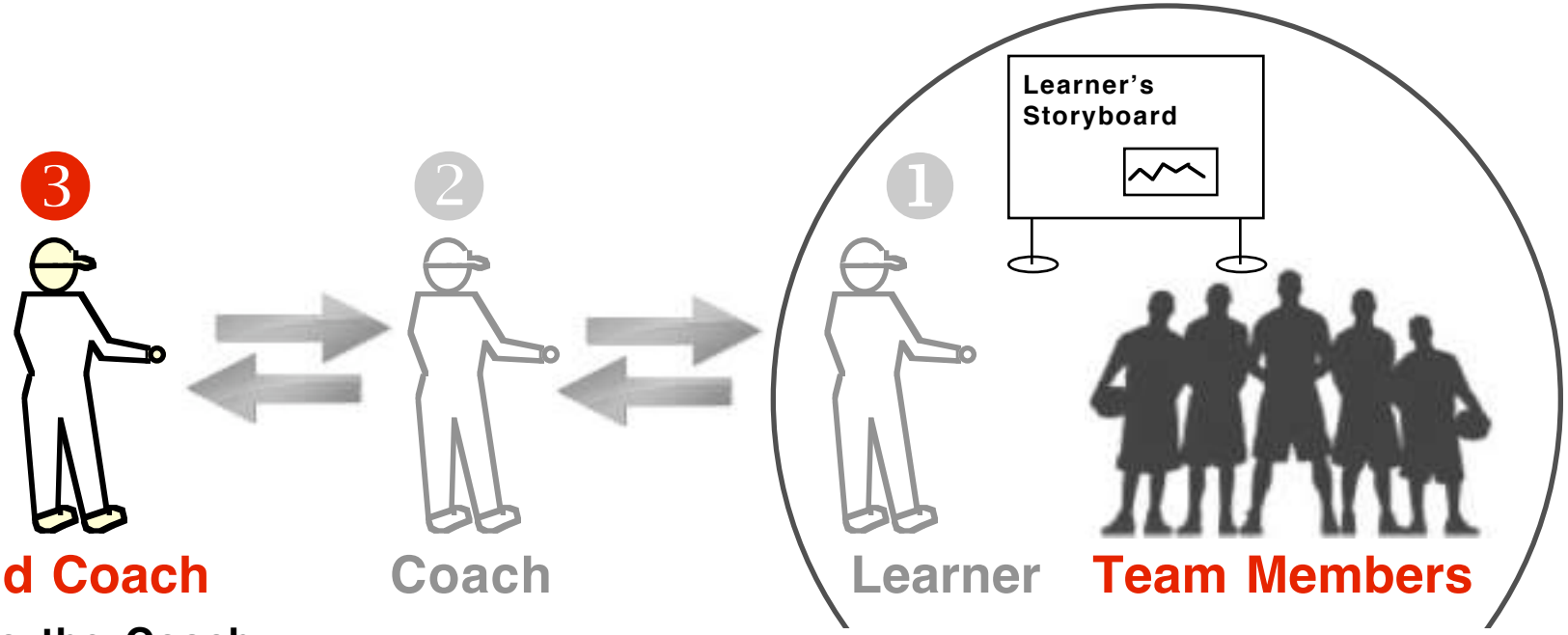
**The Coach guides the Learner on *procedure,* but is dependent on the Learner to take steps toward the target condition along an unknown path. The Learner pulls the Coach and the team forward on the learning path to the target condition.**

**The Coach guides primarily the process, not the content, of the Learner's actions. The Coach asks procedural questions and gives procedural guidance...**




**...the Learner works toward the target condition and shares learnings from the last step on the path. The Learner will often be ahead of the Coach on the content of what's being worked on.**

# TWO MORE ROLES:
# *2nd COACH & TEAM MEMBERS*




**Coaches the Coach**

**The 2nd Coach is typically one level up in the hierarchy from the Coach, although a 2nd Coach can also be a peer or a staff specialist, such as a Lean staff person.**

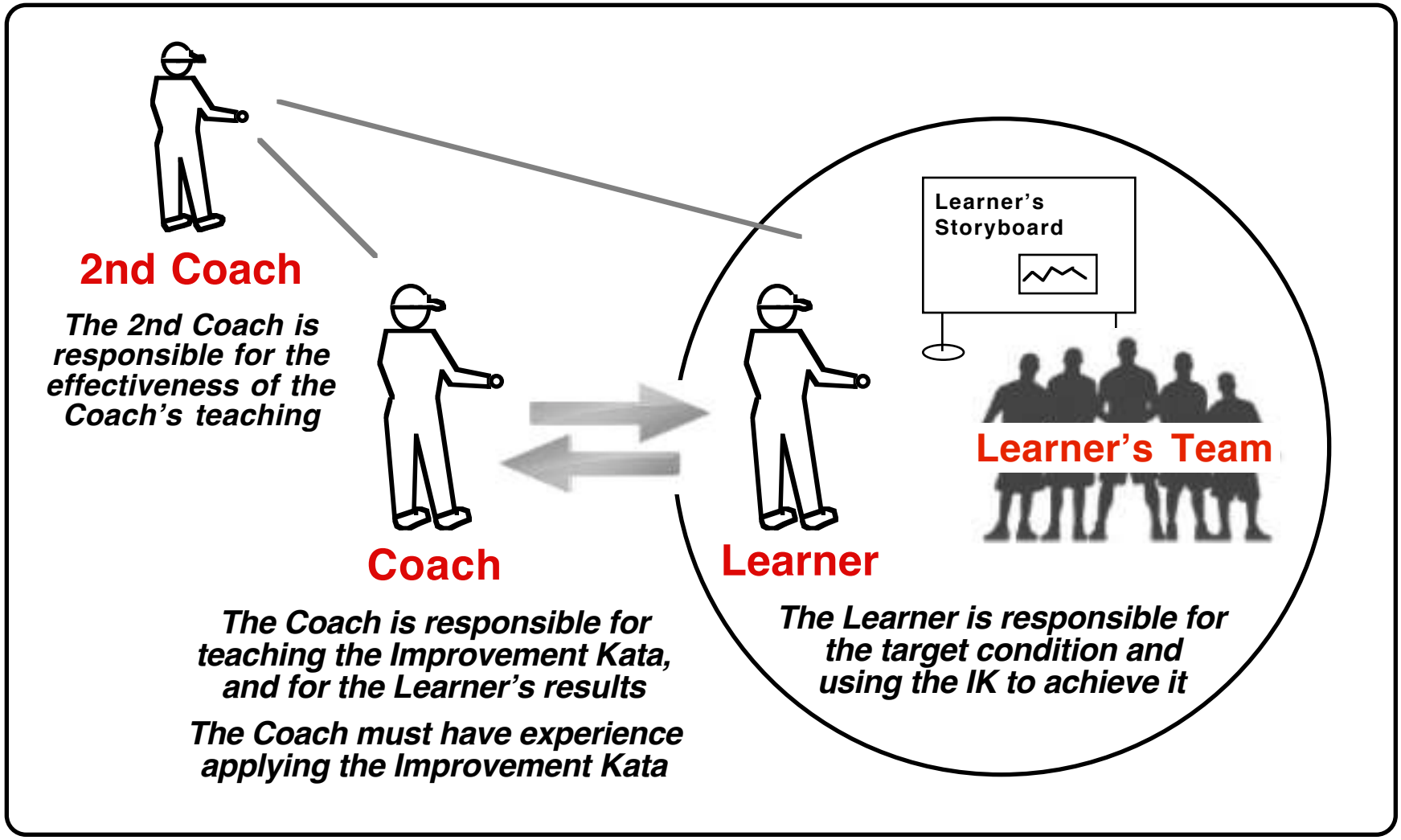
**Like the Coach, the 2nd Coach must have personal experience with applying the Improvement Kata.**

**The Learner is the manager of the Team Members. At a minimum, the Team Members are involved in:**

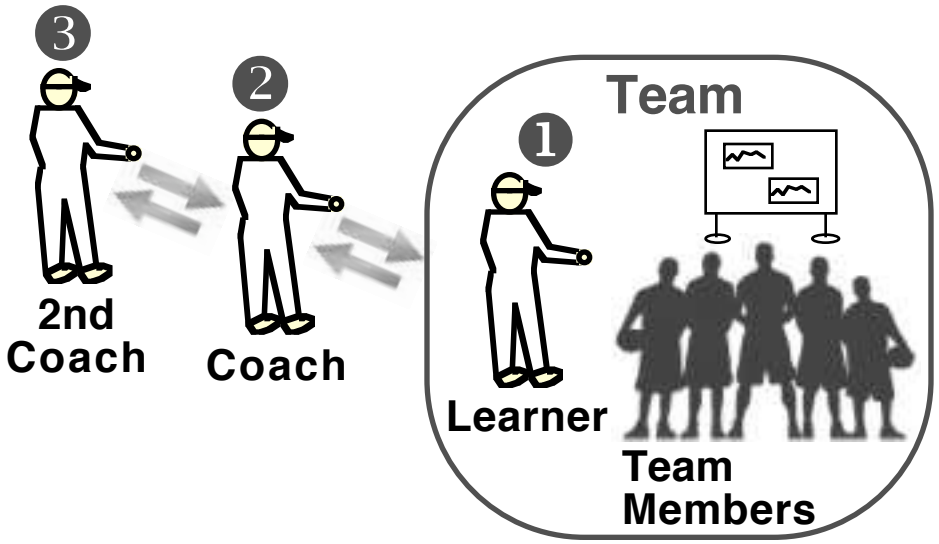
**--> Understanding the current work process in order to establish the target condition.**

**--> Working to break through obstacles on the way to the target condition.**

# ROLE RESPONSIBILITIES



# ROLE TASKS

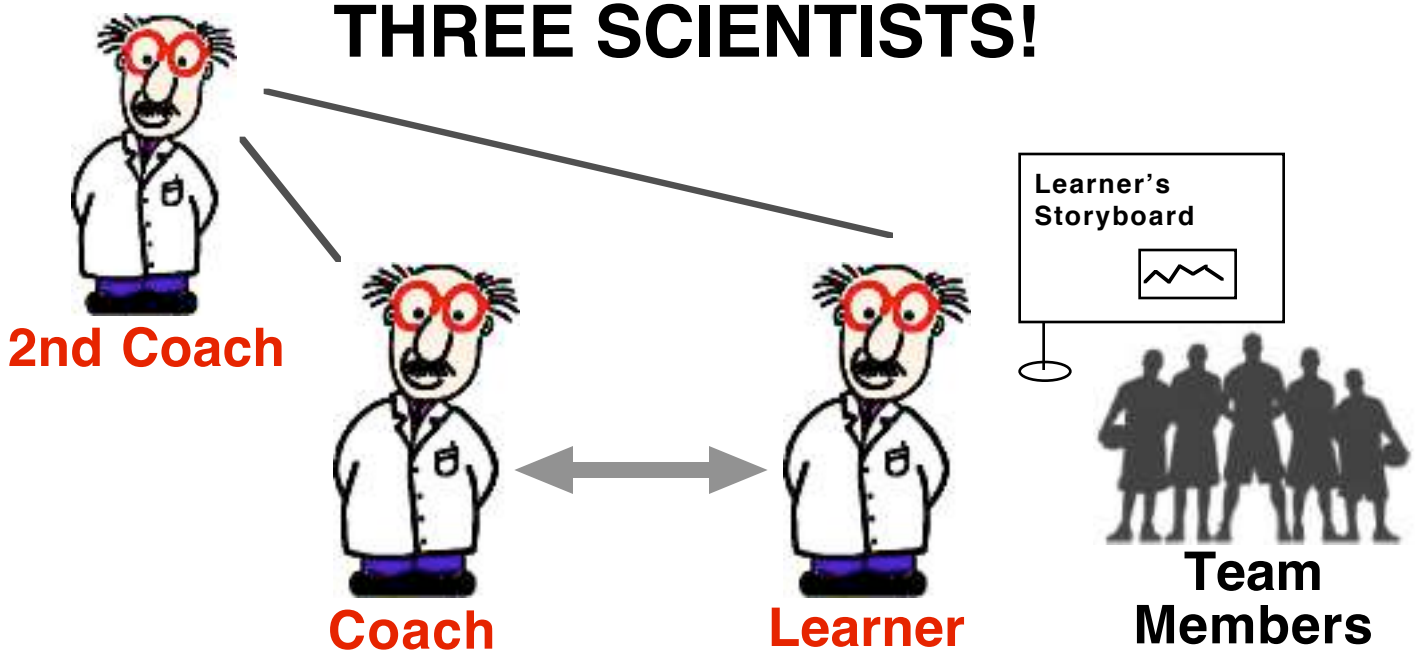



***LEARNER:***
Applies the Improvement Kata at the level for which they are responsible. The Learner grasps the current condition, designs the next target condition and works toward it by conducting experiments with PDCA and developing solutions to obstacles, all in daily dialog with the Coach and the Team Members. The Learner is responsible for the *doing*.

***COACH (The Teacher):***
Ensures the Learner is working scientifically according to the Improvement Kata pattern. Conducts coaching cycles daily using the 5 Coaching Kata questions. The coach's job is to develop the learner by guiding the learner on Improvement Kata procedure, not to improve the process. The Coach is responsible for the Learner's *results*.

***2nd COACH (Coaches the Coach):***
Observes coaching cycles between the Coach and Learner . Gives feedback to the Coach to help the Coach develop his or her coaching skills.

# THREE SCIENTISTS!




- The **Learner** is trying to be scientific in striving toward the Challenge, by using the Improvement Kata as described in Part I. The Learner is looking for cause-and-effect between steps taken and progress toward the current target condition.

- The **Coach** is trying to be scientific in having the Learner practice and internalize the pattern of the Improvement Kata, following the Coaching Kata described in this section (Part II). The Coach is looking for cause-and-effect between the Learner's approach and progress toward the current target condition.

- The **2nd Coach** is trying to be scientific in helping the Coach practice and learn effective coaching skills. The 2nd Coach is looking for cause-and-effect between the Coach's actions and the Learner's skill growth in applying the Improvement Kata pattern.

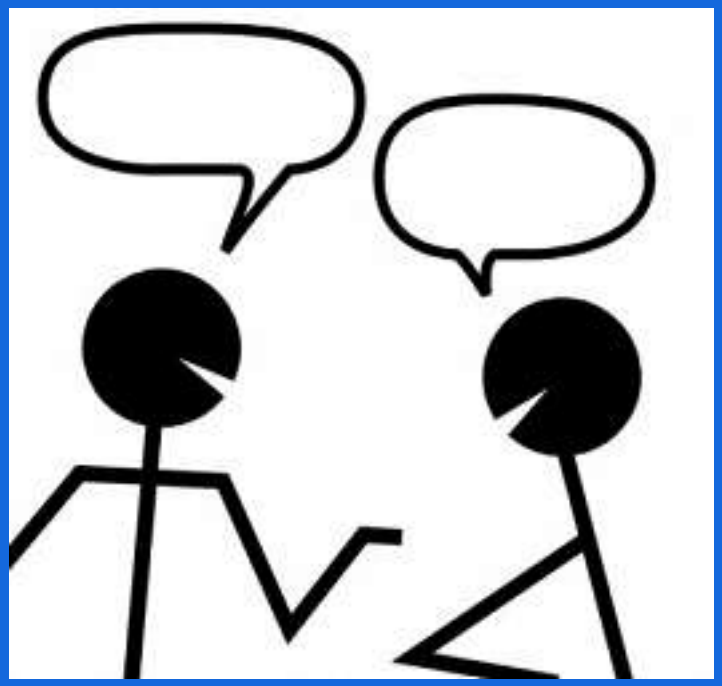
# THIS IS FREE TRAINING

**Since the coaching is done by a line manager while the Learner works on a real goal, it's done without hiring extra staff and there's no extra cost or application delay for the Learner's capability development.**

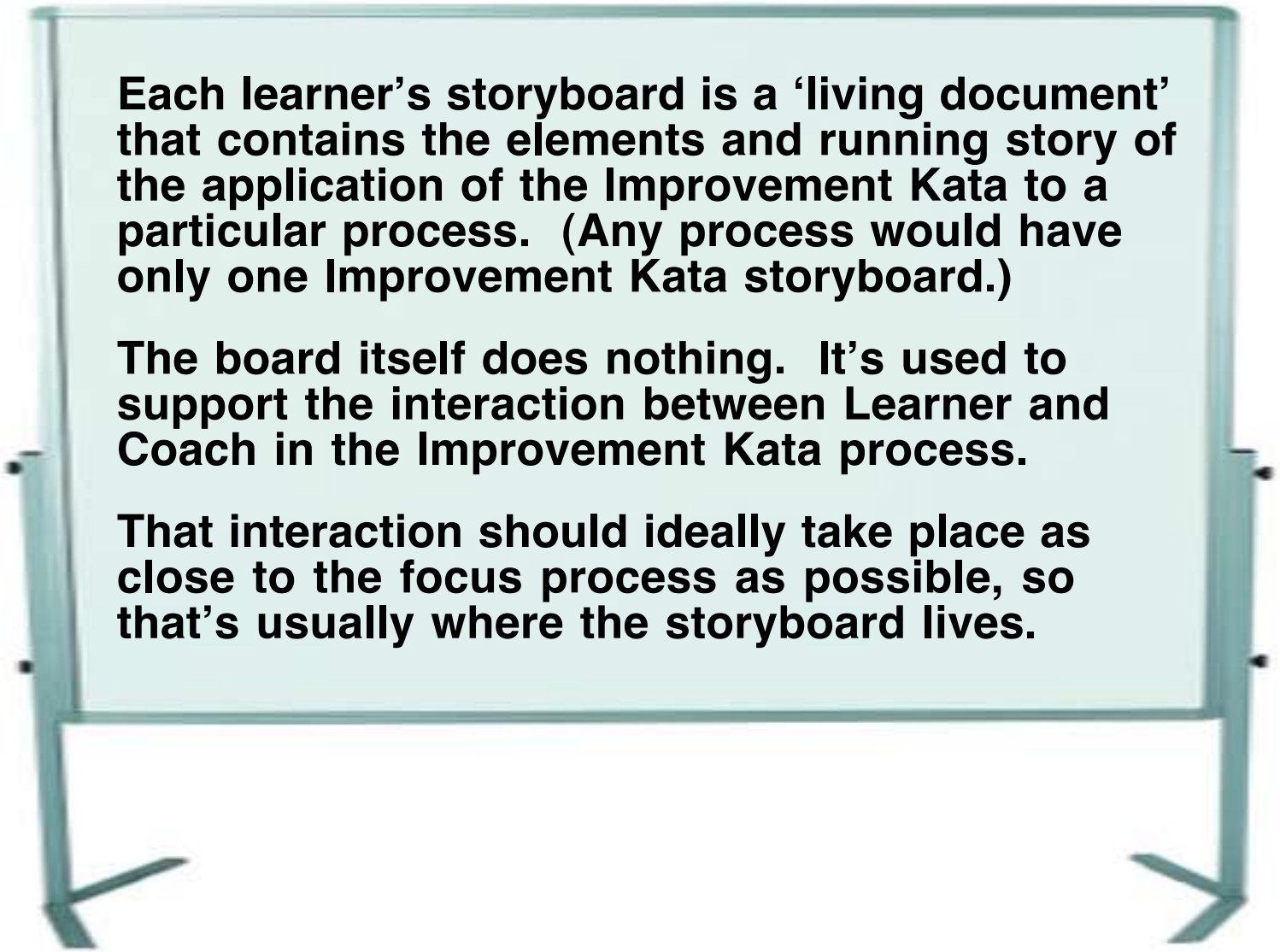





# (2) The Learner's Storyboard



# EACH LEARNER HAS A STORYBOARD



**Each learner's storyboard is a 'living document' that contains the elements and running story of the application of the Improvement Kata to a particular process. (Any process would have only one Improvement Kata storyboard.)**

**The board itself does nothing. It's used to support the interaction between Learner and Coach in the Improvement Kata process.**

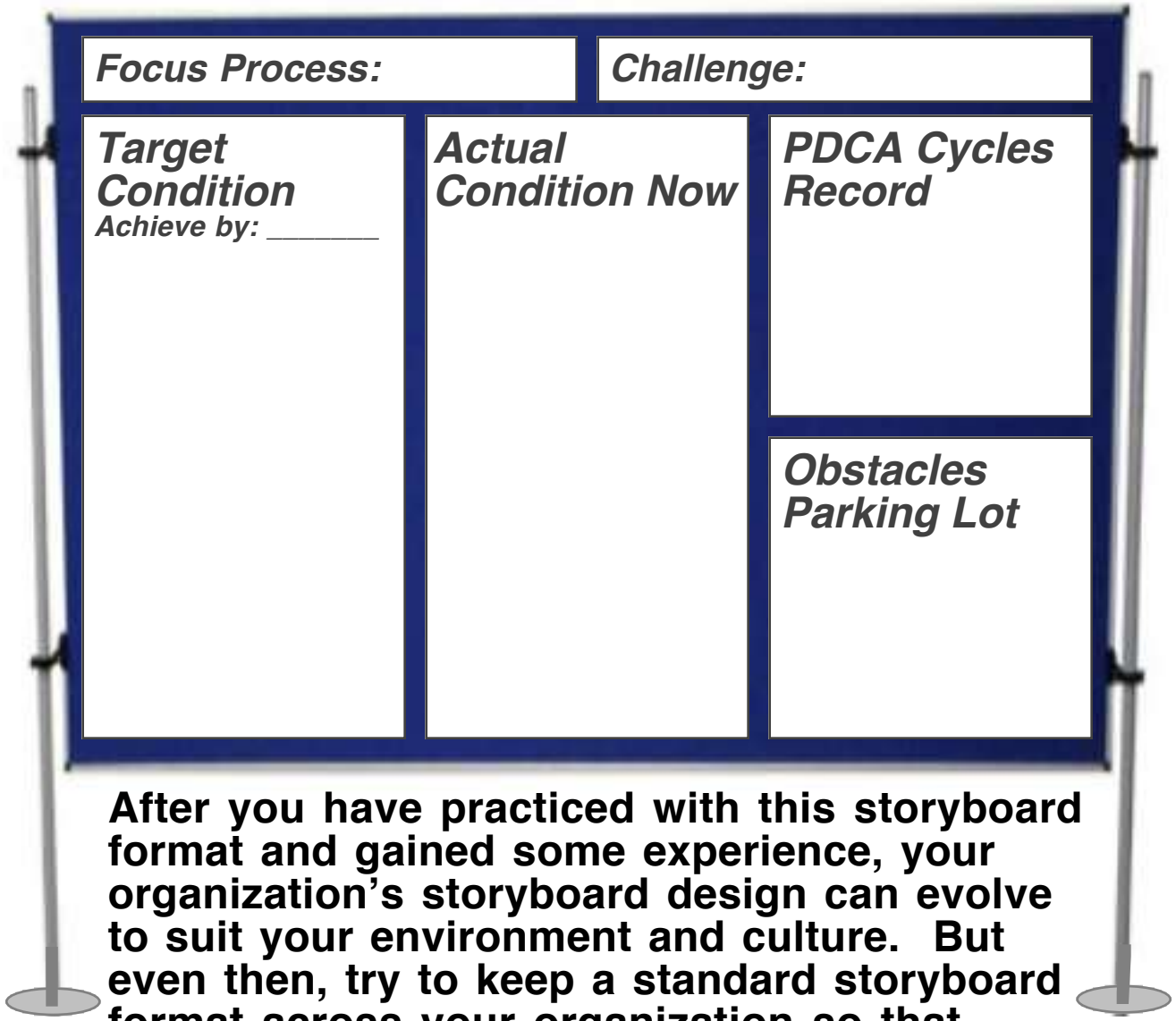
**That interaction should ideally take place as close to the focus process as possible, so that's usually where the storyboard lives.**

# LEARNER'S STORYBOARD - STARTING POSITION

## --> Start with this exact storyboard format <--

**Blank fields** → **where information, progress and learning will be posted and updated as the Learner goes through the Improvement Kata pattern**

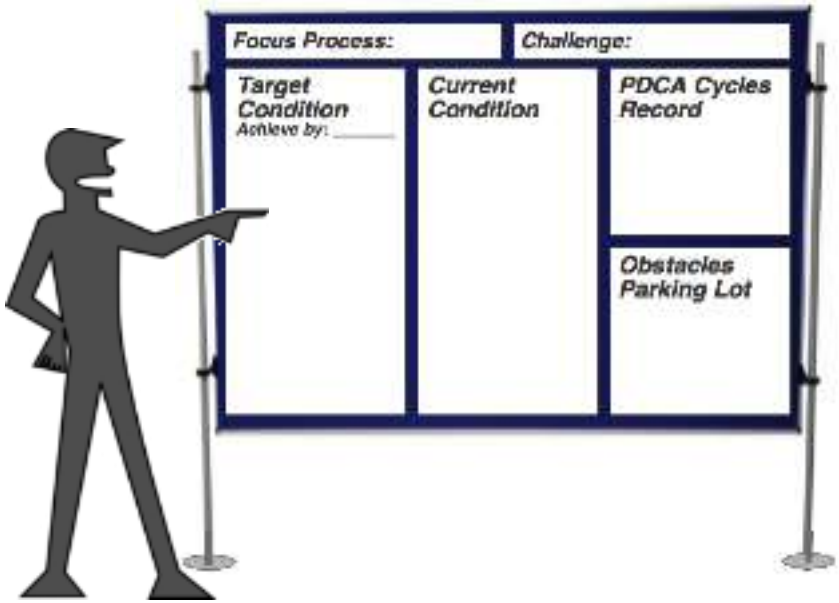
**Having a common format for the Learner's storyboard makes it easier for Coaches to coach multiple Learners**




**After you have practiced with this storyboard format and gained some experience, your organization's storyboard design can evolve to suit your environment and culture. But even then, try to keep a standard storyboard format across your organization so that coaching and communication are easier.**

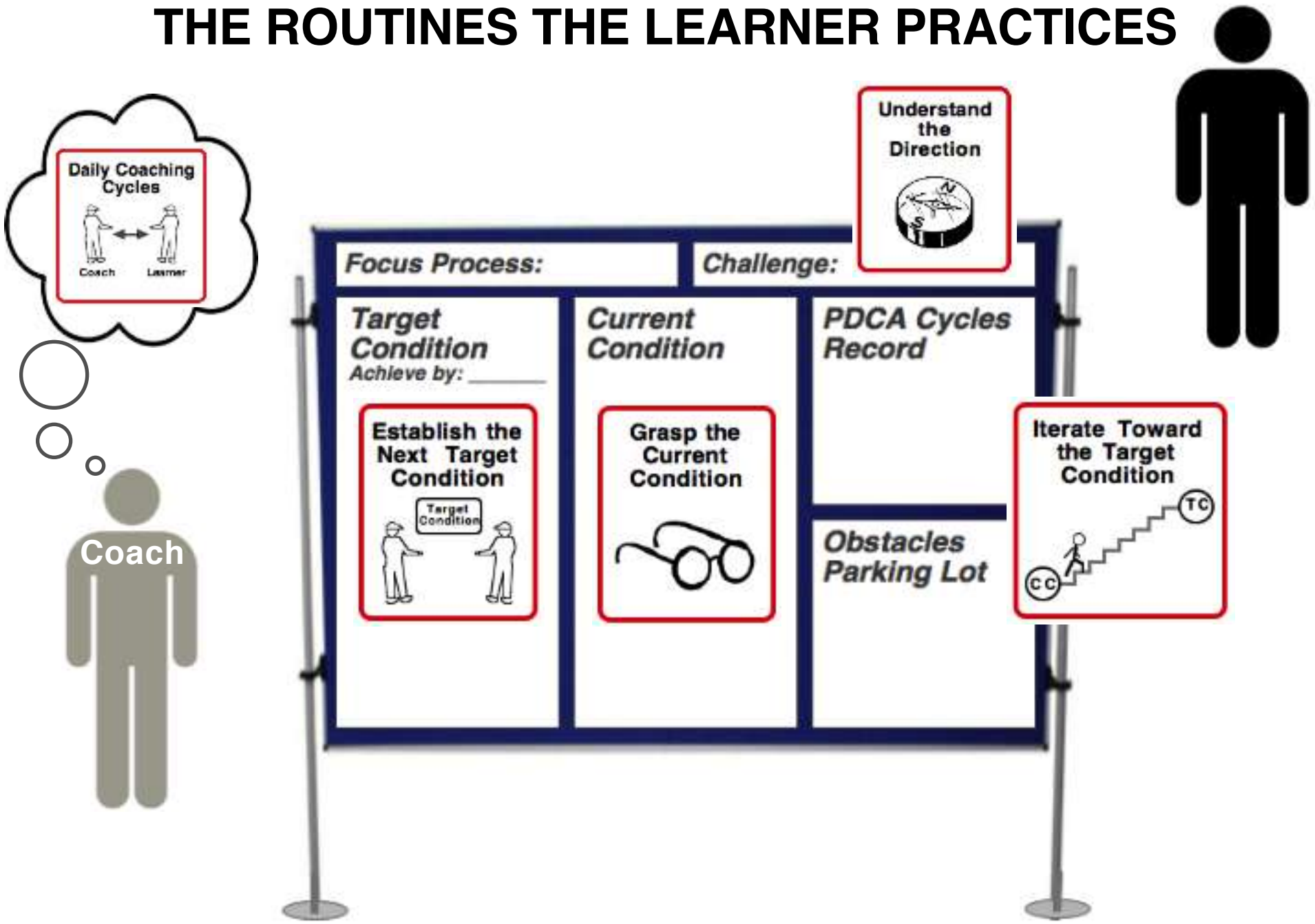
# THE LEARNER OWNS THE STORYBOARD

## The Learner updates the storyboard, not the Coach




**The layout and information on the storyboard should flow naturally, like a story, with the Five Coaching Kata Questions that the Coach asks in the *Executing* phase of the Improvement Kata.**

# THE ROUTINES THE LEARNER PRACTICES



# ABOUT THE LAYOUT OF THE STORYBOARD

## It's called "storyboard" because the Learner uses it to tell the story each Coaching Cycle

**The storyboard layout follows the Improvement Kata pattern from left to right, except that *Current Condition* and *Target Condition* are reversed. The Challenge and Current Condition should be understood prior to defining the next Target Condition. Then the reversal happens.**

**The Learner's storyboard is set up left-to-right to match the pattern of the Five Coaching Kata Questions, which begin with, *"What is the Target Condition?"* The Target Condition gets touched on at the beginning of every coaching cycle as a "frame," even though this may seem repetitive and redundant. You talk first about where you are going, and then about aspects of the Current Condition *relative to* that desired condition.**

**The daily coaching cycle conversations in the 'Executing' phase are where a lot of repetition, coaching and learning come in, and this is where the penny usually drops for the Learner. In the 'Planning' phase of the Improvement Kata pattern the Learner is building up or populating the storyboard. In the 'Executing' phase the Learner then uses the board to repeatedly practice a way of thinking that begins with stating the goal.**

**Of course, once you have achieved some proficiency and understanding through practice you can adjust the storyboard, as long as the underlying principles remain the same.**

# (3) Selecting the Focus Process



# WHAT IS A "PROCESS"?

**A"process" is the work that a *person* or a *group of persons* do as they interact with objects such as routines, schedules, materials and equipment.**

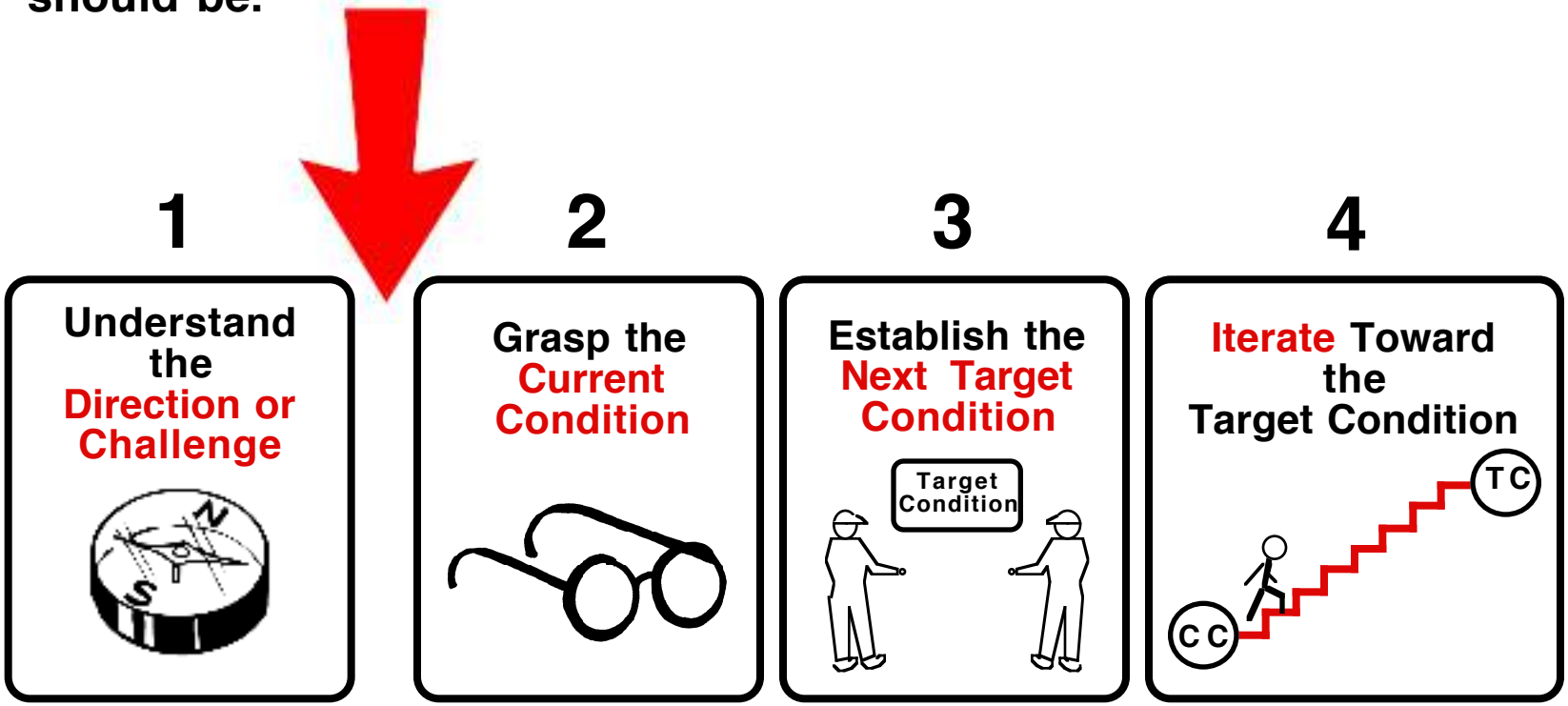






# WHEN TO CHOOSE THE FOCUS PROCESS

**Select the focus process <u>after</u> Step 1 of the Improvement Kata pattern: "Understand the Direction or Challenge." The nature of the Challenge can have an influence on what the focus process should be.**



# SELECTING AN APPROPRIATE FOCUS PROCESS FOR A BEGINNER LEARNER

## The first goal is for the Learner to learn the Improvement Kata pattern, not for the Learner to solve a big problem

**For beginners it's important to use an easy-to-understand work process for their initial practicing, so they can concentrate on the pattern of the Improvement Kata rather than getting overwhelmed by a difficult-to-understand work process.**

**--> Good processes for a beginner to practice on have a visible (manual), repetitive, short-cycle work pattern.**

**Simple, repeating, manual processes (i.e., not a decision-making process) are easier to apply the Improvement Kata pattern to at first. This might even be a procedure that is a part of a larger process, such as changeover of a machine or taking in a patient.**

**To find such a process you may have to take the Learner outside their own work area. Keep in mind that the word "process" refers to all kinds of activity: production, administrative, hospital, logistics, etc. You are free to choose any process for the Learner, such as material handling, order-entry, lab procedures, handling customer returns, and so on.**

**Help the beginner quickly internalize a few basics by guiding him/her through the full 4-Step Improvement Kata pattern repeatedly in a short time frame. Have the Learner start applying the Improvment Kata to more complicated work processes as their skill builds.**

# ROUTINE WORK IS A GOOD FOCUS-PROCESS CHOICE FOR AN IK BEGINNER

## The Learner can expand to more complicated work processes as their skill builds

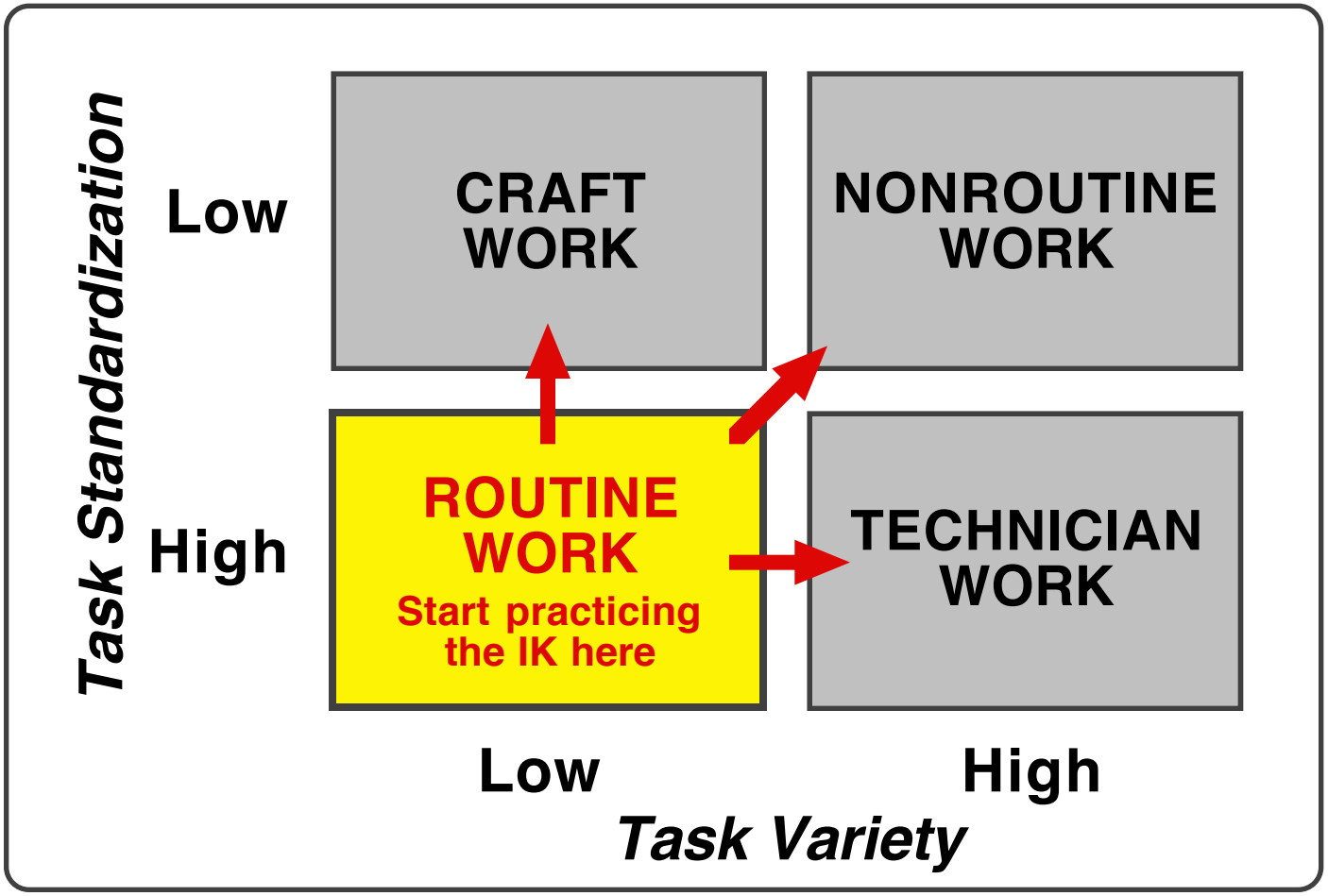


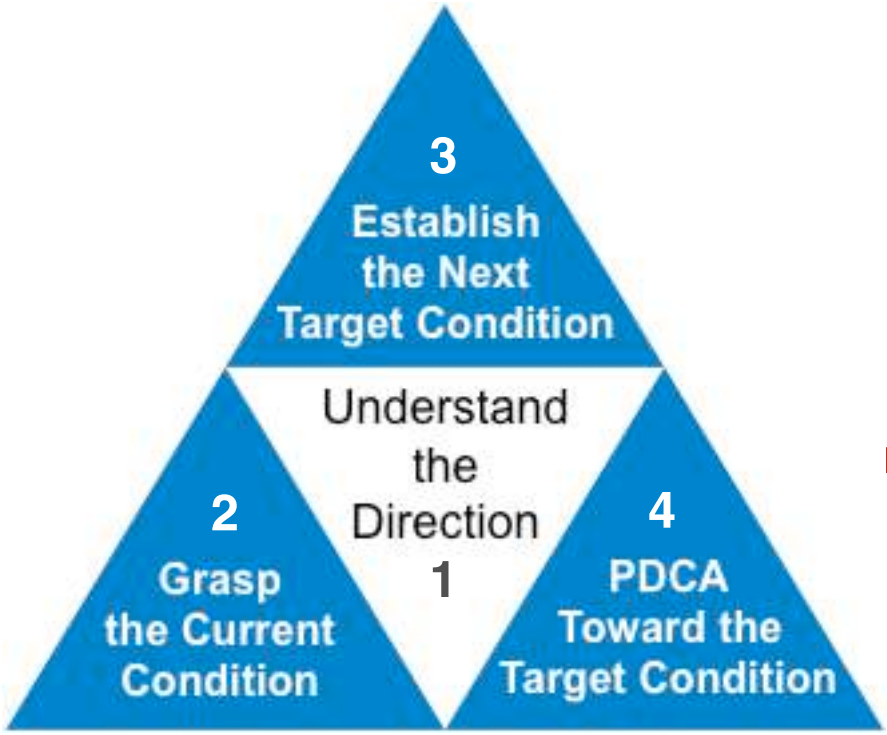

Diagram from: Liker and Meier, Toyota Talent, 2007.
Modified from: Perrow, Charles,1967. "A Framework for the Comparative Analysis of Organizations," American Sociological Review 32: 194-208.

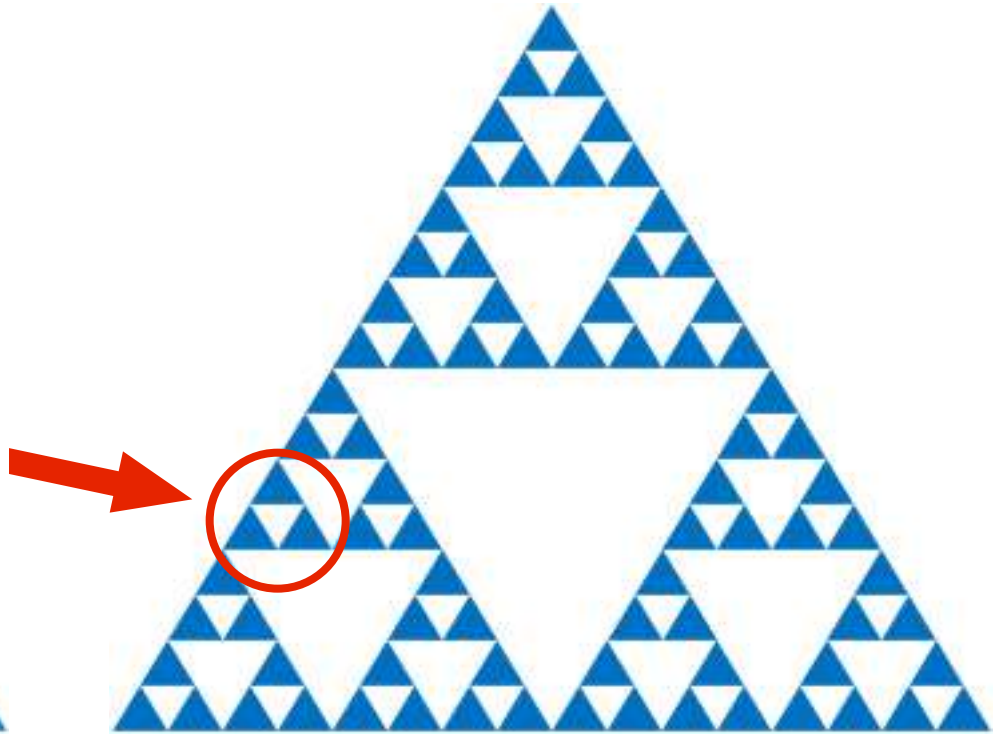
# (4) Deploying IK Practice in an Organization



# THE IMPROVEMENT KATA PATTERN IS FRACTAL

**It gets practiced throughout an organization to become the normal way of managing and working. Once managers learn this approach they may find it hard to go back to traditional-style management.**



**It's a decentralized process that's connected through a common way of working (the Improvement Kata pattern) and, often, an overarching objective. In any organization there are all sorts of objectives -- ambitious ones that lead to a breakthrough at the company or site level, incremental improvements, specific outcome targets, and so on. The beauty of the meta-patterns presented in this Handbook is that they apply to all of these. A manager can teach a way of thinking and acting that applies to any objective.**

Fractal depiction by Mr. Emiel van Est

# IT'S DECENTRALIZED BUT ALIGNED STRIVING

**The activity that produces improvement, adaptiveness and innovation in an organization is decentralized, i.e., it takes place at individual processes. Navigating complex, constantly changing conditions involves cycles of iteration that are distributed across an organization's various processes. A small group at the top doing all the planning isn't effective anymore.**

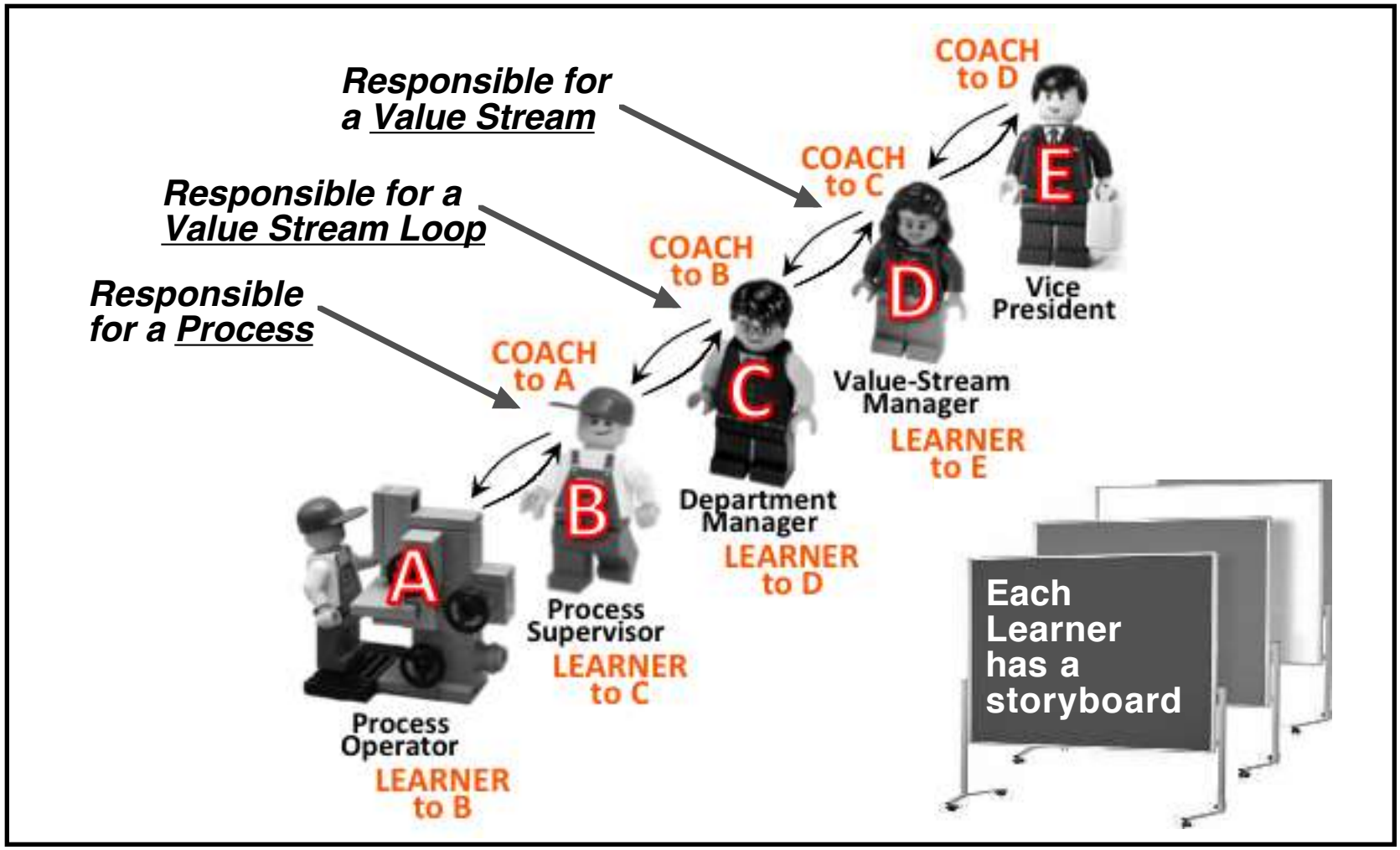
**However, this sort of delegation and empowerment doesn't work well if individual teams in the organization are operating independently and unsystematically.**

**The Improvement Kata and Coaching Kata handle the dilemma. Managers in the organization coach their teams in a common, scientific way of working (the Improvement Kata) that teams apply toward a strategic challenge. Alignment and speed result.**



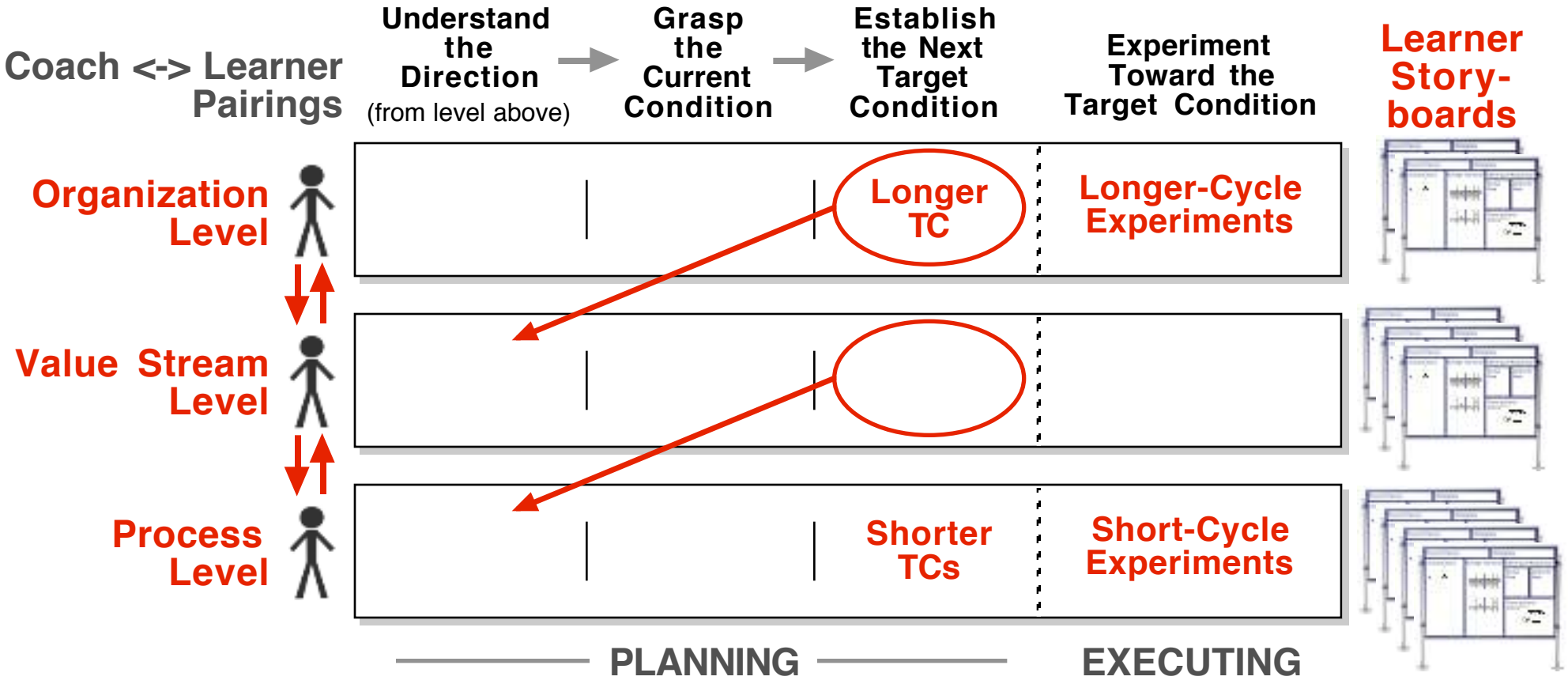
# WHAT IT LOOKS LIKE WHEN IT'S IN PLACE

**This is a depiction of what you're working toward... Coach-Learner relationships up-and-down a value stream. Of course, it takes time to build this kind of capability and structure.**



# HOW IT FUNCTIONS WHEN IT'S IN PLACE

**The higher your level in the value stream, the bigger the goal you are responsible for. A Target Condition at one level is the Challenge for the next level down, and each level coaches the next level down.**




Based on an illustration by Emiel van Est

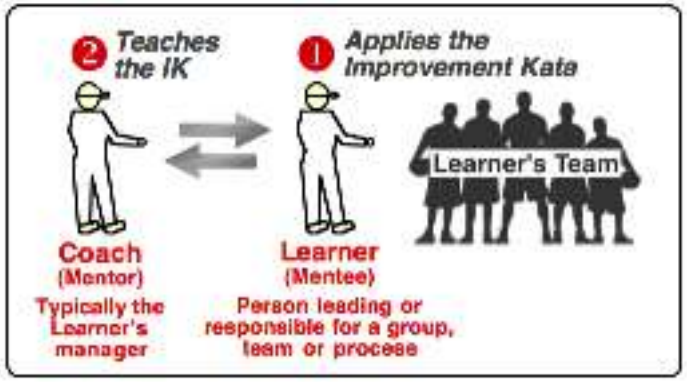
# EVERY IK DEPLOYMENT IS UNIQUE

## Apply the IK pattern to your IK deployment!

**Since no two deployments of the Improvement Kata and Coaching Kata are alike, there is a need to go beyond just planning to continually experimenting, observing and adjusting *at the organizational* (deployment) *level*. You can ask the Five Coaching Kata Questions at this level too. This is a role for an "Advance Group."**








# ADAPT THE COACH / LEARNER ROLES TO YOUR ORGANIZATION'S STRUCTURE

**Each organization will have to determine how the Coach/Learner roles overlay onto its organizational structure**



**NOTE: As described in the previous chapter (*Guidelines for Practicing*), the Coach/Learner roles should above all be developed in the line functions of your organization, not the staff functions, so that the practice is part of everyday work in every area. This is an important point for successfully changing or developing an organization's culture.**

**Some staff functions can develop into "2nd Coaches" (see below).**




# KEY LESSONS FOR DEPLOYING THE IMPROVEMENT KATA

## These are *must-haves*

- ☑ **To bring the pattern of the Improvement Kata into the operation of your organization, line managers will have to actively coach it every day. Coaching/practicing the Improvement Kata pattern has to get into the normal daily work of line managers, not just staff persons.**

- ☑ **A gating factor is how much Improvement-Kata coaching capability you are developing in your organization. You cannot expand wider and faster than your coaching capability. It is much better to say, *"We could have gone faster,"* than to say, *"We went too fast."***

- ☑ **To be able to coach the Improvement Kata, a person first has to learn how to do the Improvement Kata.**

- ☑ **You may think deploying simply means getting people in the organization to start practicing the Improvement Kata, but the effort to deploy the Improvement Kata needs to be monitored and guided. To do that be sure to establish an 'Advance Group' as described in the following pages.**

# START WITH A SMALL "ADVANCE GROUP"

## AKA "The Shepherds" - A key element

***Advance Group*** **refers to a team of 3-5 people who shepherd the deployment of Improvement Kata thinking and acting in an organization or site. There can be one advance group for the overall organization, and an advance group at each local facility.**

- **The Advance Group practices and learns first, and then sherherds the deployment process. The AG does this by applying the steps of the Improvement Kata to the process of skill development in the organization.**

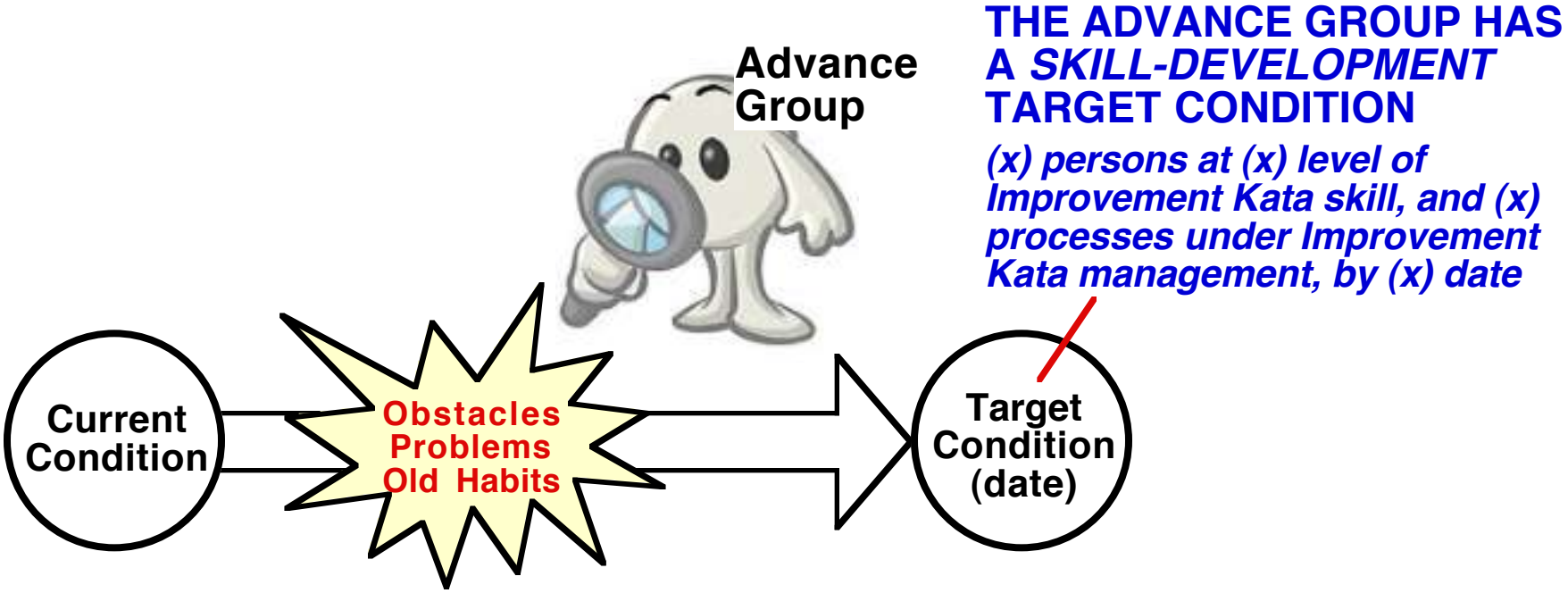
- **The Advance Group includes a senior executive (*the* senior executive in small and mid-sized companies, and at smaller local sites).**

- **The Advance Group is *not* a lean staff group, although a lean staff member can be on the advance group. If you have a lean staff, their role may migrate toward being "master coaches" for line managers, who are the heart of the lean effort.**

- **Since they are going first, the Advance Group will probably need guidance from an external coach, which can be an outside consultant.**

# WITHOUT AN ADVANCE GROUP TO SHEPHERD IT, YOUR DEPLOYMENT IS UNLIKELY TO SUCCEED

**Planning a perfect deployment of new-skill development is impossible. It will be important to sense obstacles, problems and weaknesses as they arise along the way, learn from them and adjust the deployment activity accordingly. This is the responsibility of the Advance Group.**




**You're working on a change in how your organization manages people, so there's a need for high-level PDCA on the process of skill development. The Advance Group does this high-level reflecting and adjusting, for example on a bi-weekly basis.**

# A THREE-PHASE DEPLOYMENT APPROACH




***Phase III** - Expansion into the normal business process of line managers in a value stream, slice by slice*

***Phase I*** — ***Phase II***

**Scouts study the subject**

**Form an Advance Group**

**Advance Group Practices the IK**



| Senior Managers | Area Managers | Supervisors |
|---|---|---|
| Daily Practice | | |

**An organization can begin by having a few 'Scouts' familiarize themselves with the Improvement Kata topic. Is this something we want to do?**

**An external Coach is often needed here**

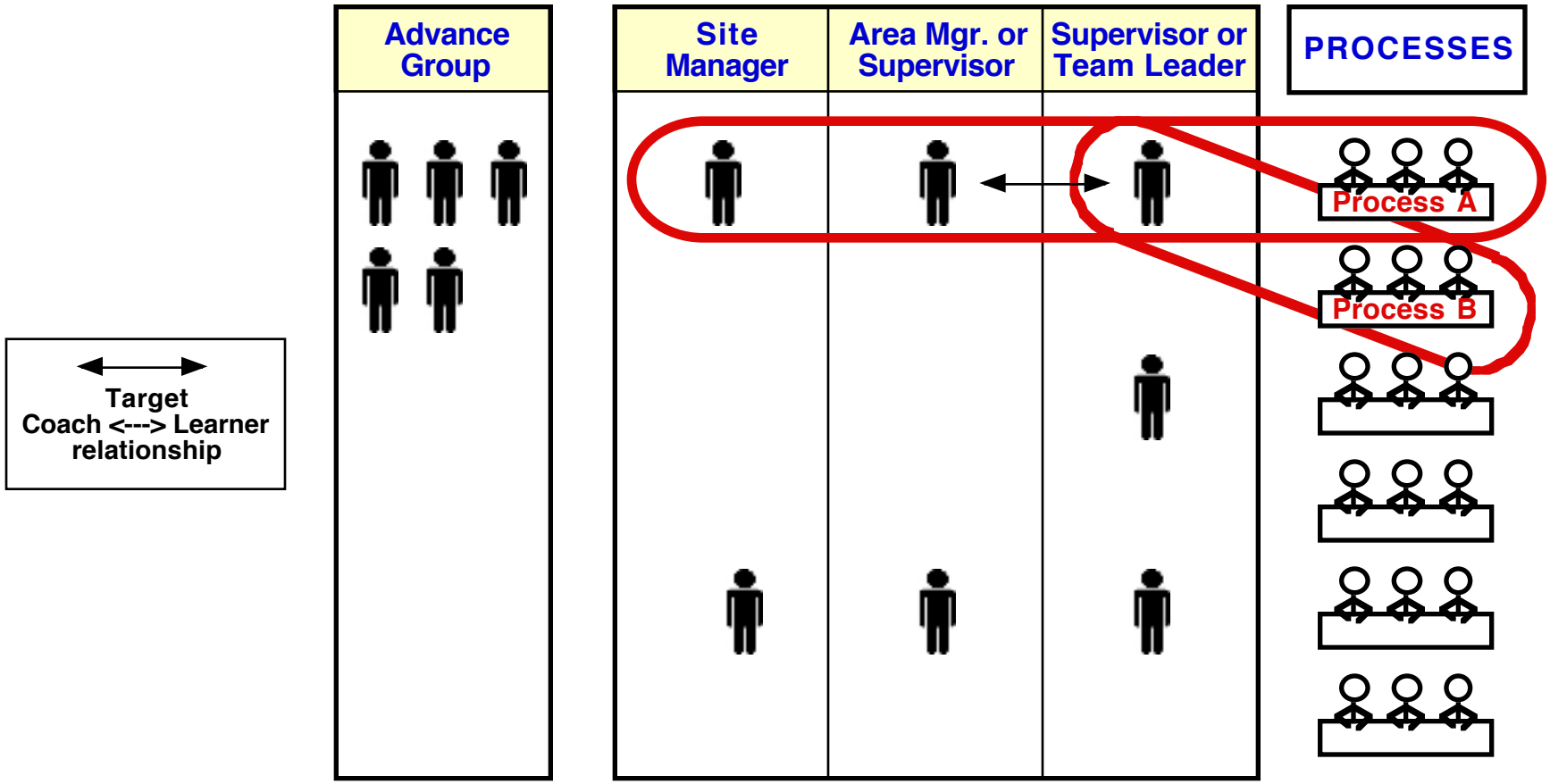
**The basic deployment process here is to practice and model the Improvement Kata pattern at one management level, and expand from there through one-on-one coaching.**

**At this point the Advance Group has some understanding of the IK/CK. The Advance Group now looks ahead and defines a 6- or 12-month skill-development target condition and makes a deployment plan for that time frame.**

# EXPANDING SLICE BY SLICE IN PHASE III

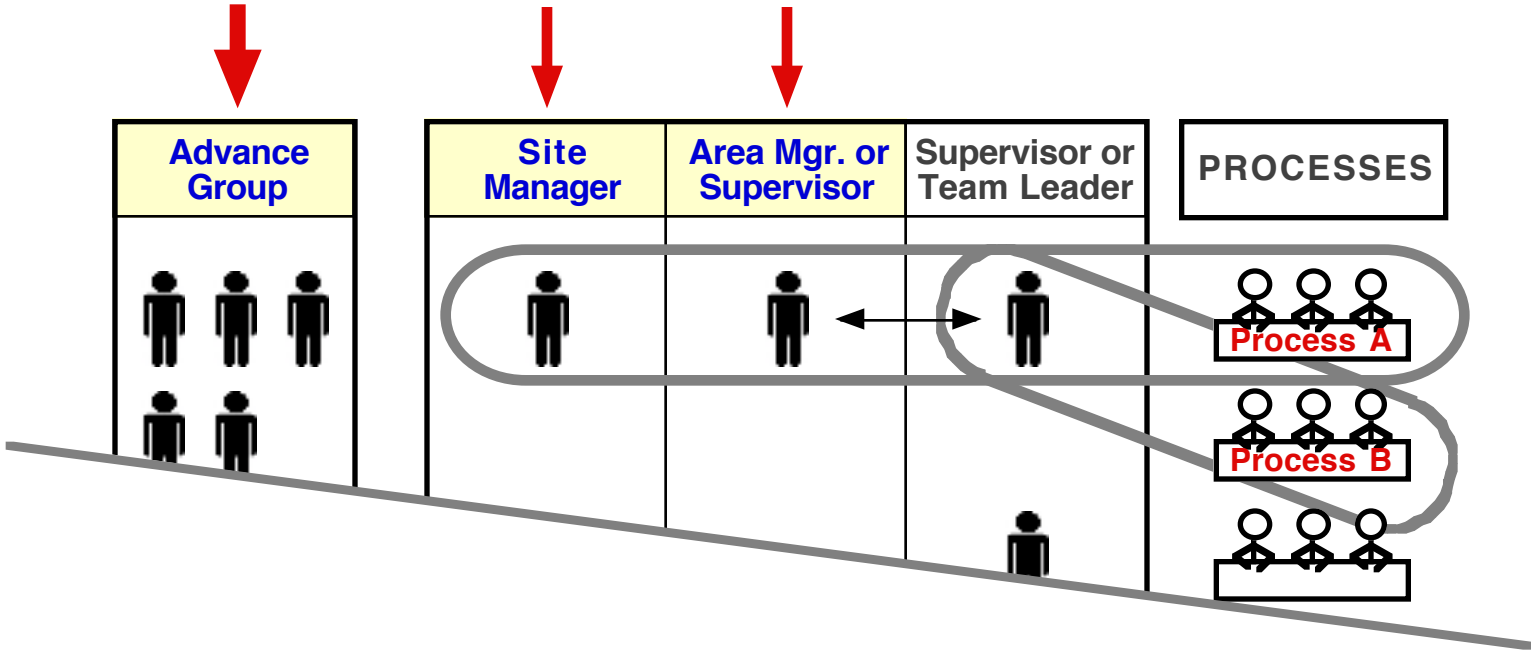
## To what process will the Learner apply the Improvement Kata?

- A *slice* = a process and it's associated chain of persons.
- Add slices only as your coaching capacity permits.
- Once you start applying the Improvement Kata to a process you should never stop. So it's better to start too small than to involve too many people too quickly.



# SO WHO GOES FIRST?

**Practicing is top-down. The Advance Group and some selected managers should be be the first Learners.**

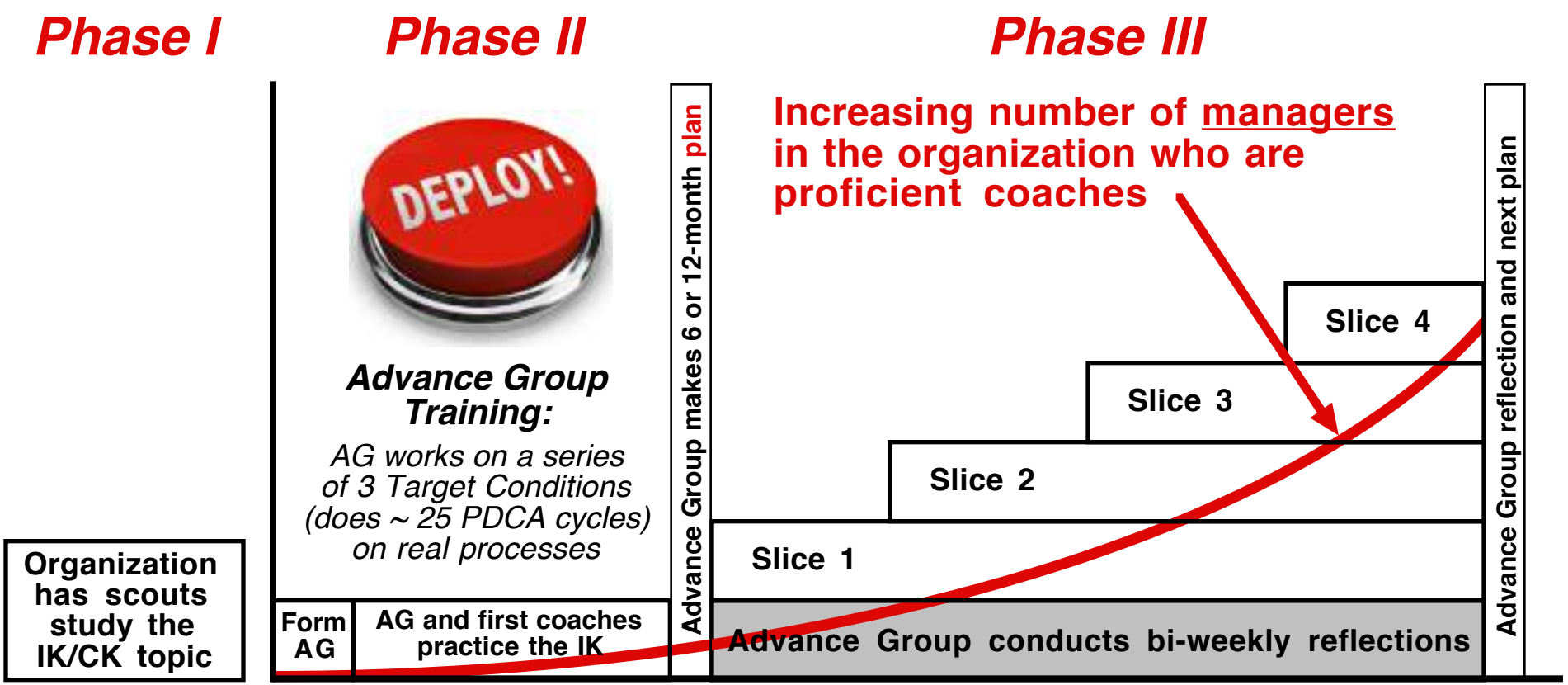



**The Advance Group then starts a cascade of practicing by coaching the next group of Learners/managers in the organization.**

**But the Advance Group will not be responsible for conducting all coaching and training, nor for making improvement happen at all processes. That will increasingly be the responsibility of managers, who coach in their areas and expand the cascade.**

# WHAT A DEPLOYMENT LOOKS LIKE (not to scale)

**Don't try to expand faster than you can develop internal Coaching Kata proficiency!**




**EXTERNAL COACH ROLE**
Initial instructor and coach
On site frequently (eg. every 2 weeks)

**EXTERNAL COACH ROLE**
As 2nd Coach
On site every 2 - 4 weeks

**EXTERNAL COACH ROLE**
As needed



# IN ADDITION, YOU CAN EXPAND *ORGANICALLY*

**In addition to what's in its deployment plan, the Advance Group will learn things along the way. For instance, as a team pursues successive target conditions at a particular focus process, they will often increasingly find obstacles to progress *there* originating in other areas and processes.**

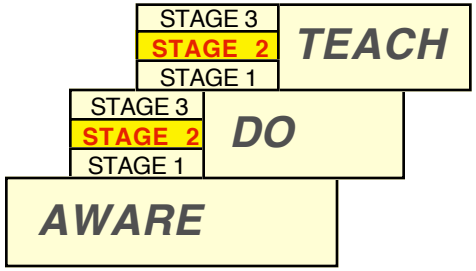
**These obstacles will lead you to a customer process, a supplying process or a managing process, where you then initiate Improvment Kata / Coaching Kata practice.**

**This way you are sure to expand your IK/CK deployment according to need.**

# DEALING WITH THE *"Yes We Have No Coaches"* PROBLEM

**The development of internal Kata coaches is a prerequisite for teaching people how to work with the Improvement Kata every day. However, at the start there are no Improvement-Kata experienced coaches.**

**One approach to dealing with a lack of internal experienced coaches is to find an experienced external coach to help you.**




**The role of an external coach is to help selected persons in your organization get to STAGE 2 Improvement Kata and Coaching Kata proficiency as quickly and effectively as possible, so you can teach and spread the Improvement Kata within your organization with less and less reliance on outside expertise.**

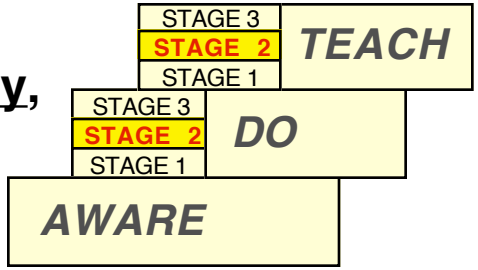


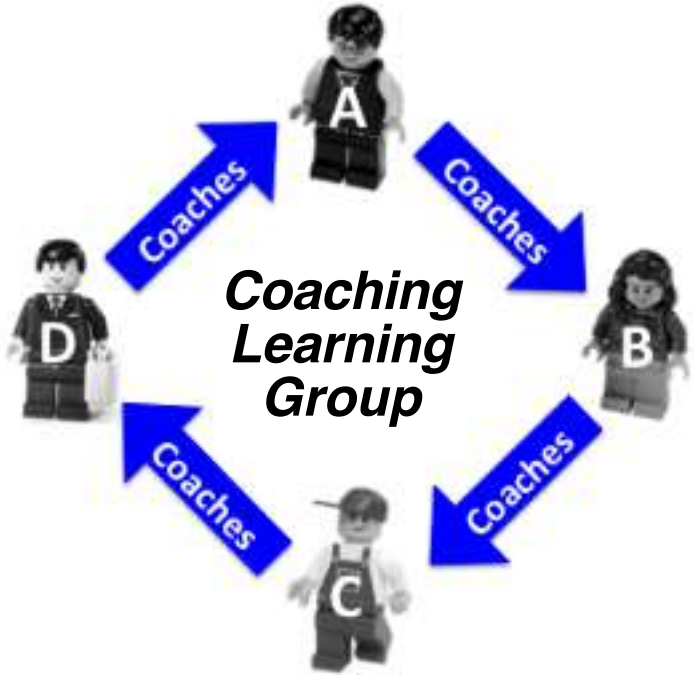
**An external coach should be used more at the beginning than later. It's important that the coaching be done by persons inside your organization as soon as possible. The role of the external coach is *not* to do all your training for you, because that will prevent your organization from developing the skills.**

# ROTATION-PRACTICE LEARNING GROUPS

**Another approach for getting started <u>when you still lack experienced coaches</u> is to have people practice in rotation models, whereby each person in turn takes the role of Learner, Coach and 2nd Coach.**

**The purpose of these rotation models is to develop kata coaches. <u>These are a temporary, artificial structure</u> to as quickly as possible develop some STAGE 2 Improvement Kata and Coaching Kata capacity.**




This rotation model is by Gerd Aulinger

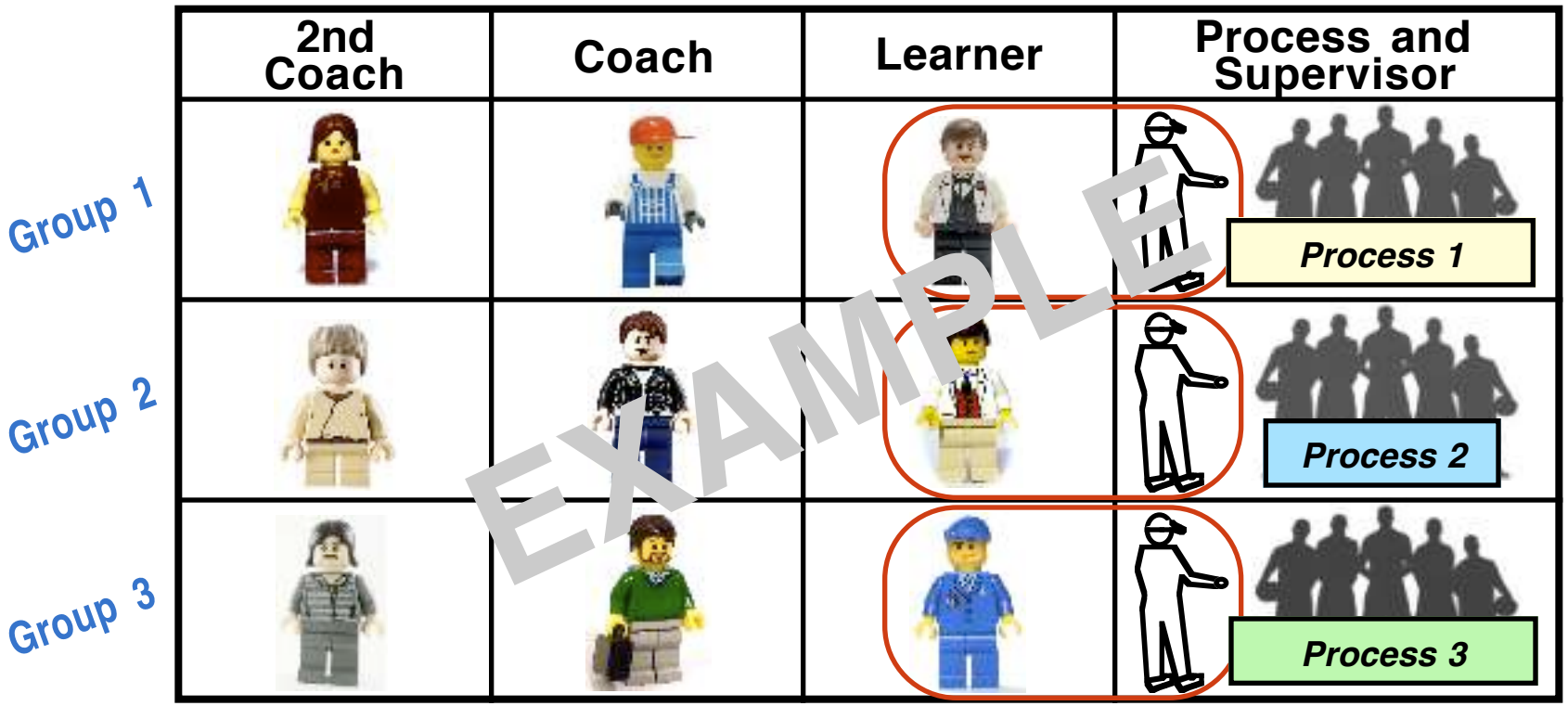
| Theme / Roles Matrix | | | | | |
|---|---|---|---|---|---|
| Process & Theme | Target | Achieve date | Learner | Coach | 2nd Coach |
| | | | A | D | B + C |
| | | | B | A | C + D |
| | | | C | B | A + D |
| | | | D | C | A + B |

EXAMPLE

**After each coaching cycle, the Coach gets feedback from the 2nd Coach and the Learner**

# EXAMPLE ROTATION MODEL FOR 9 PERSONS

- **Select 3 processes with 3 persons practicing per process. This is the Advance Group members + the additional coaches in training, for a total of 9 persons.**
- **Since these are artificially-selected processes, the Learner pairs with the process Supervisor to apply the Improvement Kata to the process.**
- **The members in each group periodically rotate roles <u>within their group</u>.**



# PART II: Practice Routines for The Improvement Kata

**Deliberate practice of the Improvement Kata pattern has the ability to change how we think about and deal with challenges and uncertainty. This section of the Handbook walks you step-by-step through the practice routines for each step of the Improvement Kata.**

**Each Chapter in this section has two parts: a 'Concept Overview' and 'Practice Routines,' indicated by these icons:**

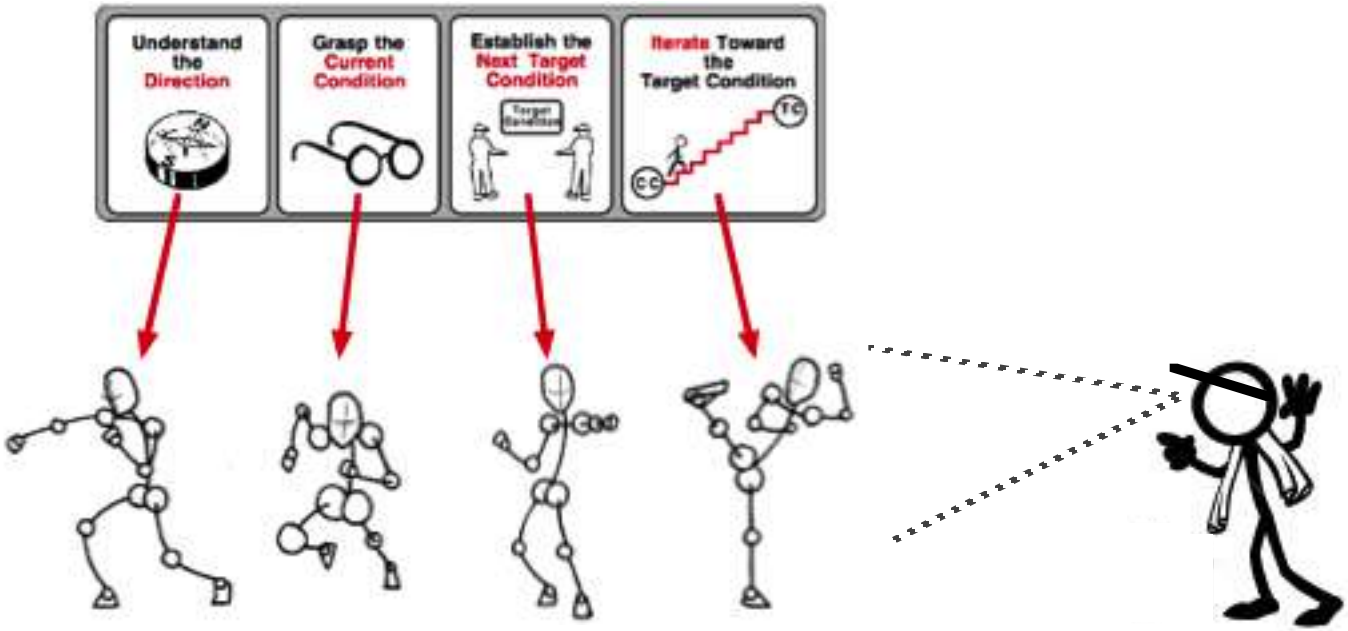





# WHAT PART II IS ABOUT

**The practice routines in this part of the Handbook are used to learn the scientific thinking pattern of the Improvement Kata. The practice routines in Part III are used to learn how to teach the Improvement Kata pattern.**

**The IMPROVEMENT KATA PATTERN (the scientific approach)**




**These are specific PRACTICE ROUTINES to acquire / develop the scientific pattern of thinking and acting**

(HANDBOOK PART II)

**The COACHING KATA is a practice routine for learning how to teach the Improvement Kata pattern**

(HANDBOOK PART III)

# THE STEPS OF THE IMPROVEMENT KATA BUILD ON ONE ANOTHER

**What you do in one step frames the next step**

4




3



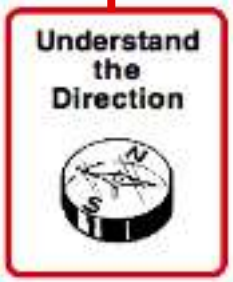

**The more precisely you define the Target Condition, the better and more quickly you can recognize obstacles and Iterate toward it with rapid experiments .**

2




**The better your analysis of the Current Condition, the more precise your definition of the Target Condition can be.**

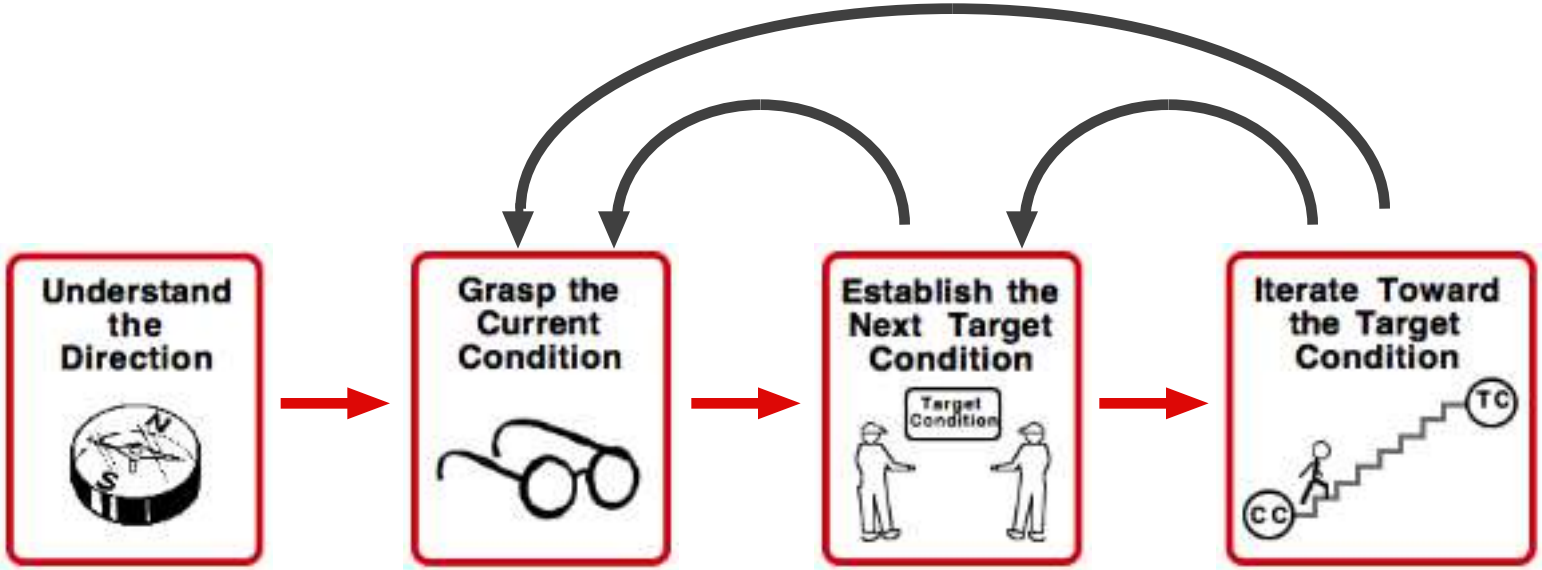
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**The clearer the definition of the Challenge, the more appropriate will be your analysis of the Current Condition.**

# THE STEPS OF THE IMPROVEMENT KATA ARE ALSO RECURSIVE

## What you encounter in one step may adjust what you learned in earlier steps

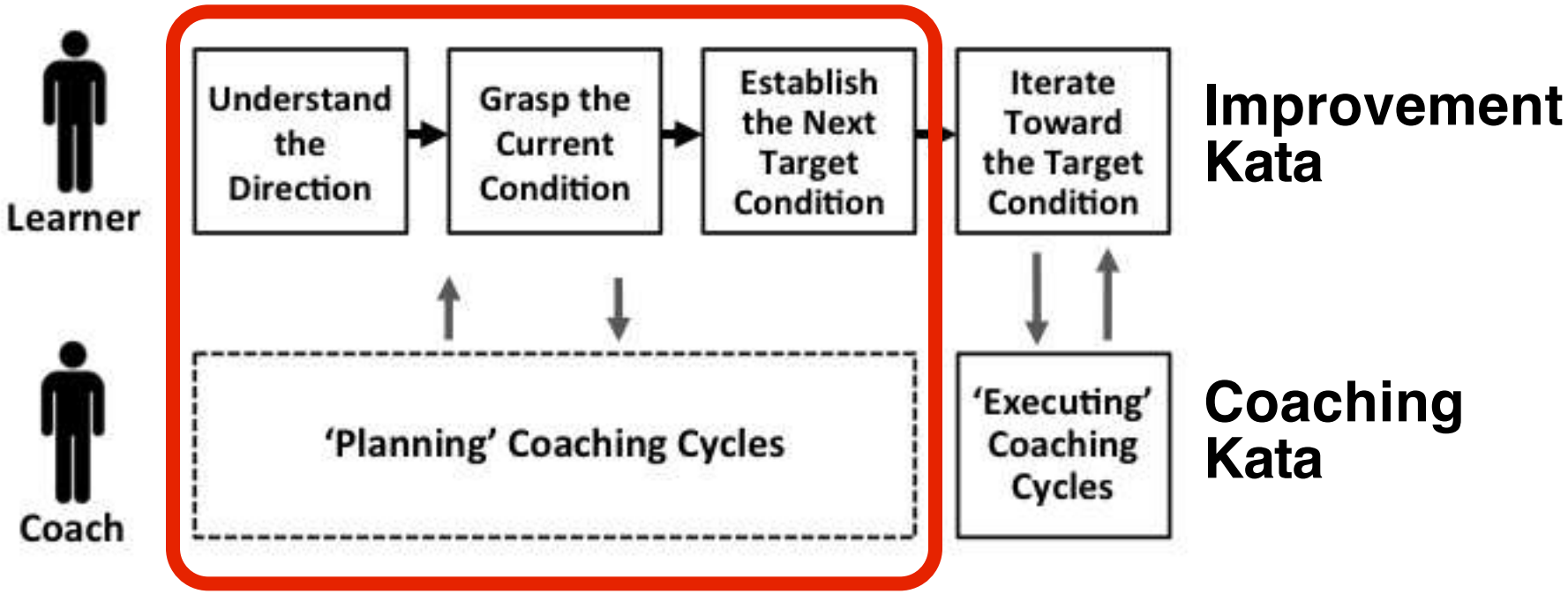


# PLANNING PHASE
## *Where Do We Want to Go?*

**Chapter 4. Step 1: Understand the Direction / Challenge**

**Chapter 5. Step 2: Grasp the Current Condition**

**Chapter 6. Step 3: Establish the Next Target Condition**



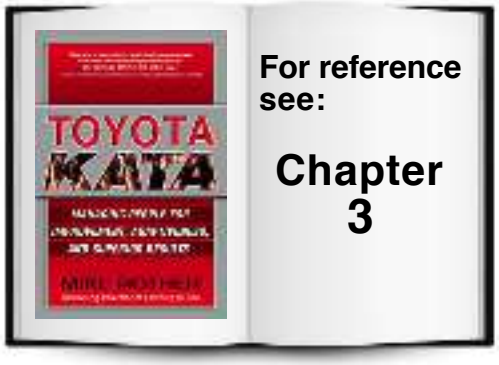
# Chapter 4

## The Improvement Kata - Planning Phase

## Step 1: UNDERSTAND THE DIRECTION / CHALLENGE

**Practice this Routine**






**For reference see:**

**Chapter 3**

# ORIENTATION



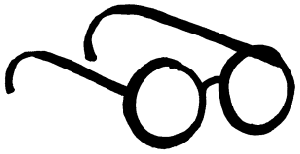

LEARNER

**Understand the Direction**

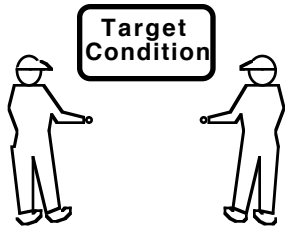


**What 1-3 year Challenge are we striving to meet?**

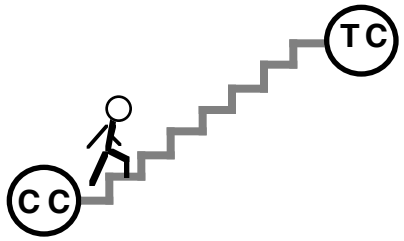
**Grasp the Current Condition**

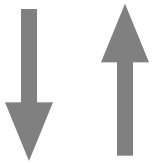


**Establish the Next Target Condition**




**Iterate Toward the Target Condition**

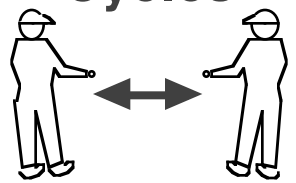


COACH

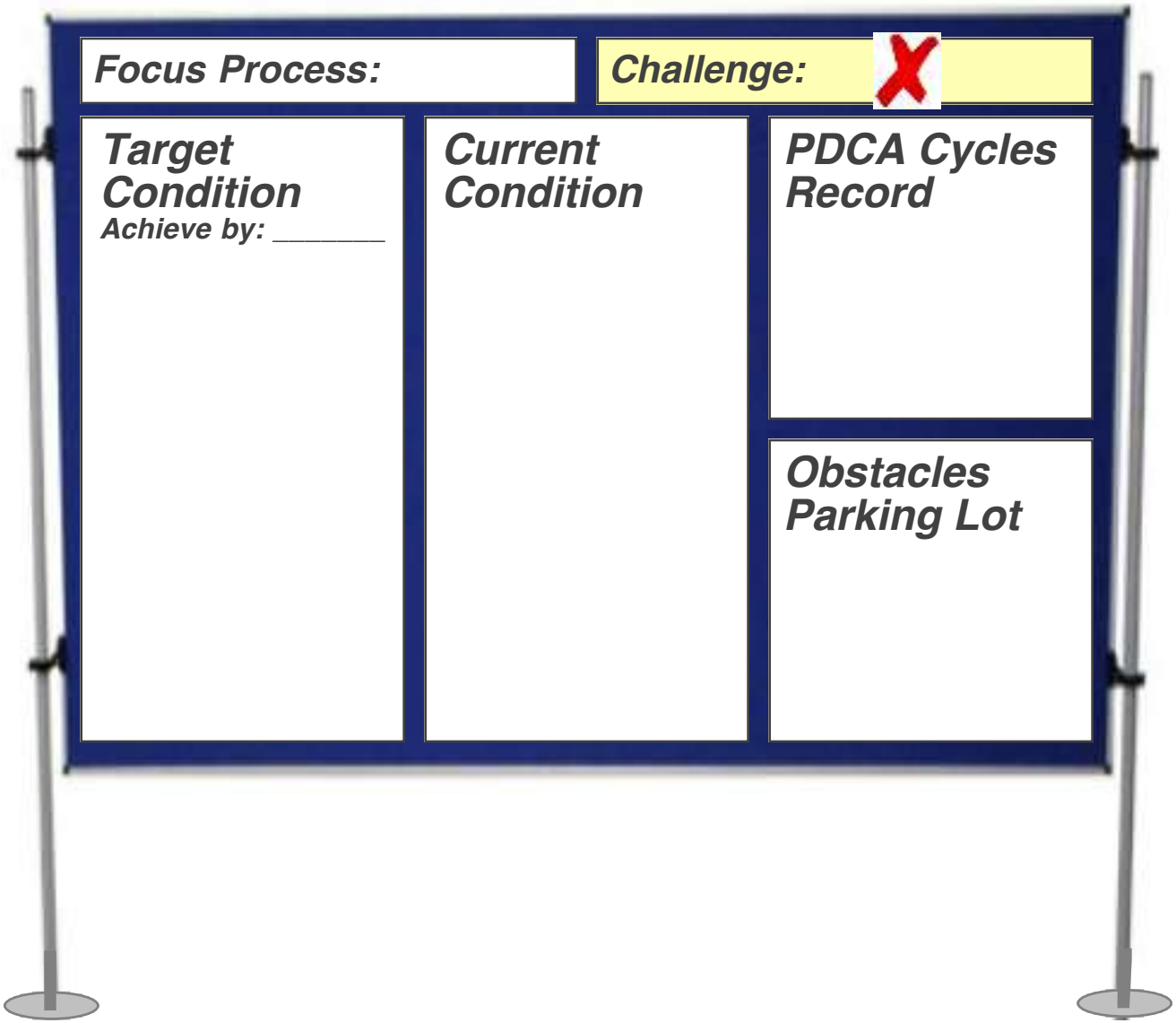
**'Planning' Coaching Cycles**

**'Executing' Coaching Cycles**



# LEARNER'S STORYBOARD

**Learner and Coach are now concentrating on this field** ✗

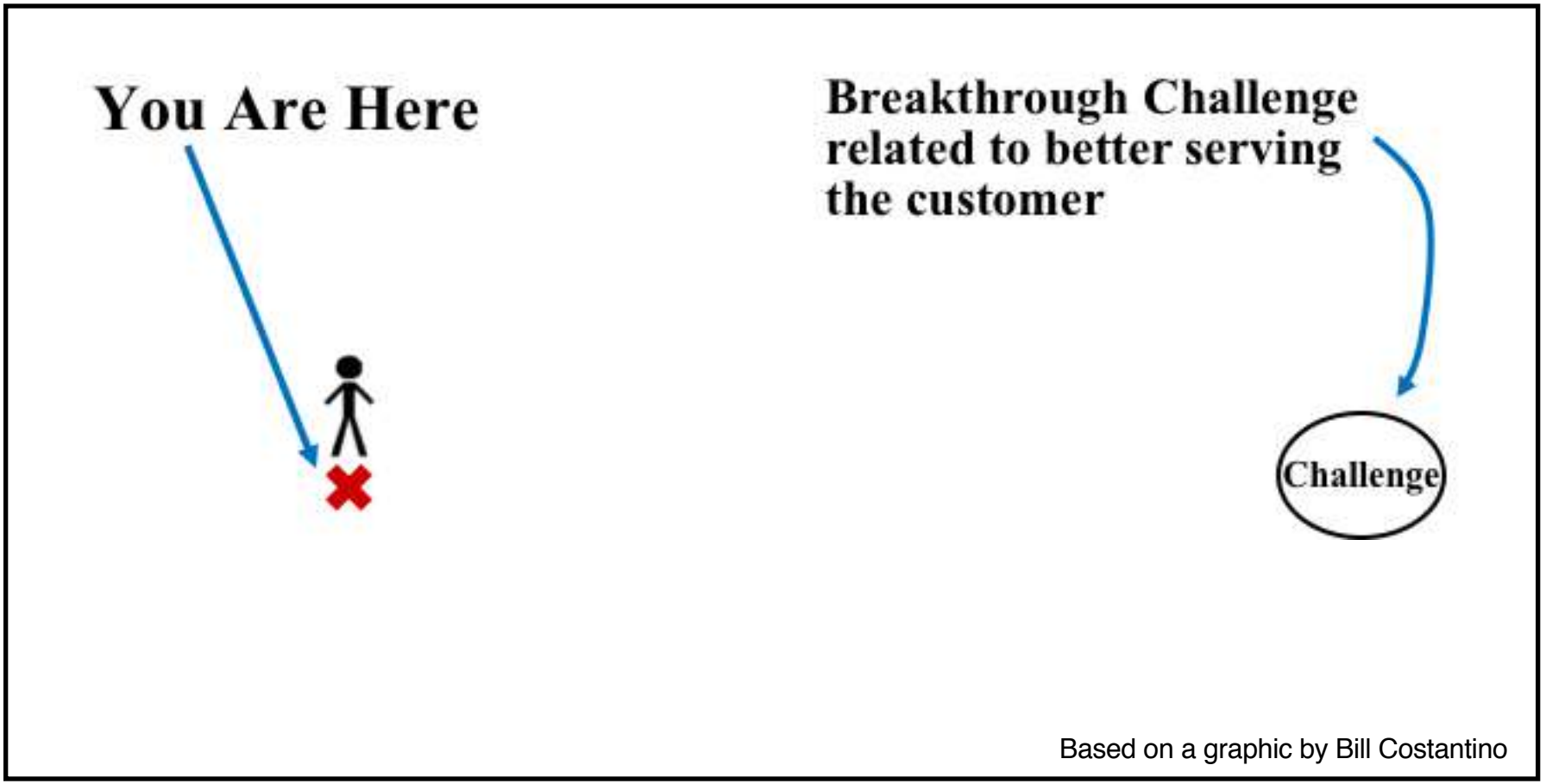



Concept
Overview



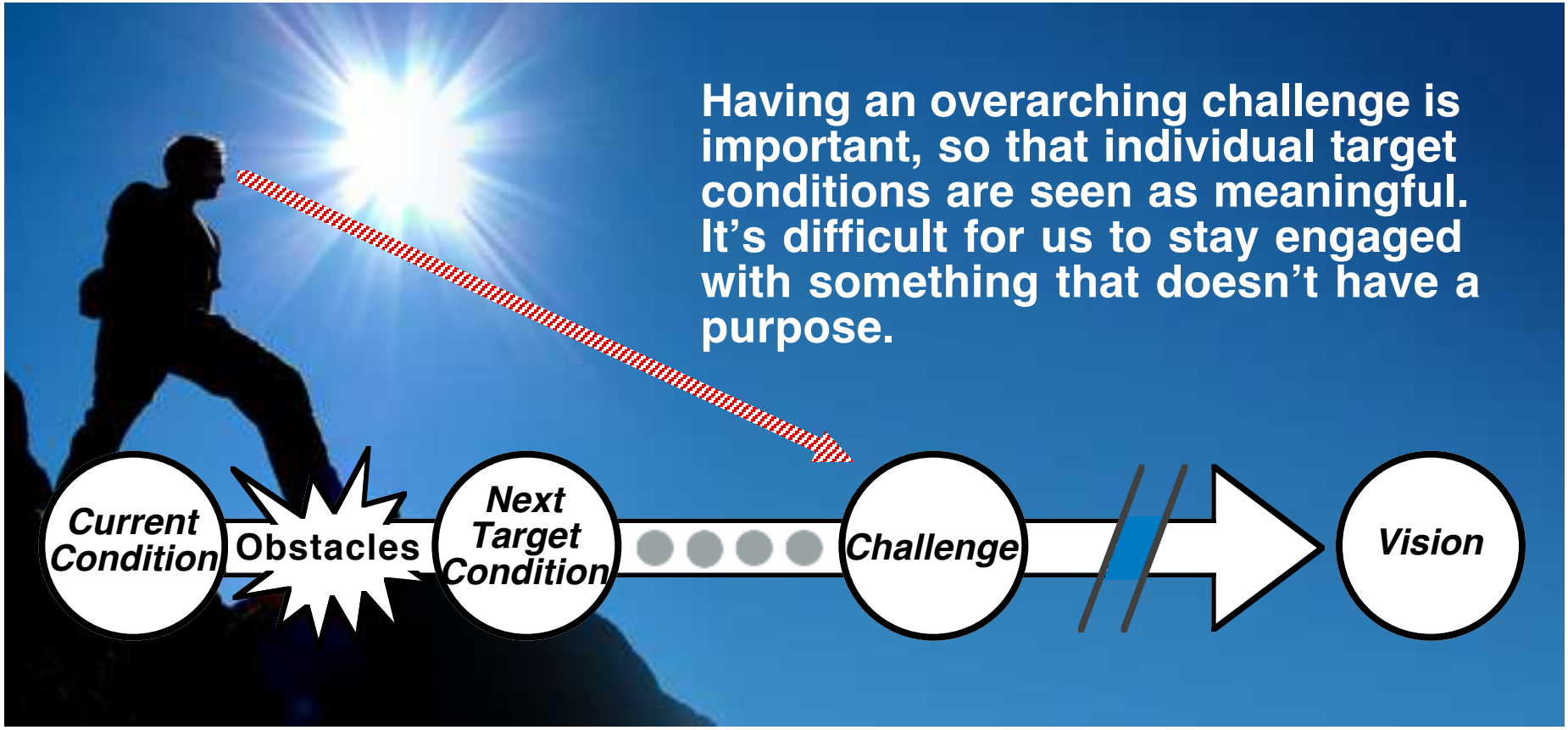
# STRATEGY BEFORE GOALS

## The Improvement Kata pattern begins with a sense of strategic direction



# SPECIFICALLY, THE FIRST STEP OF THE IK PATTERN IS TO HAVE AN OVERARCHING CHALLENGE

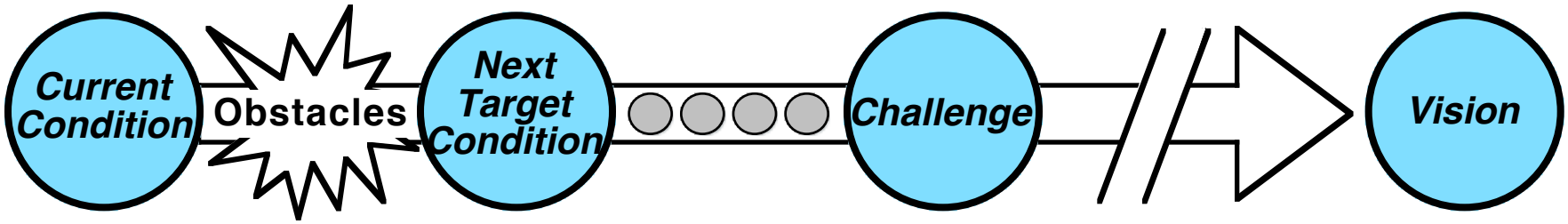
**This is the context within which the rest of the Improvement Kata is applied**



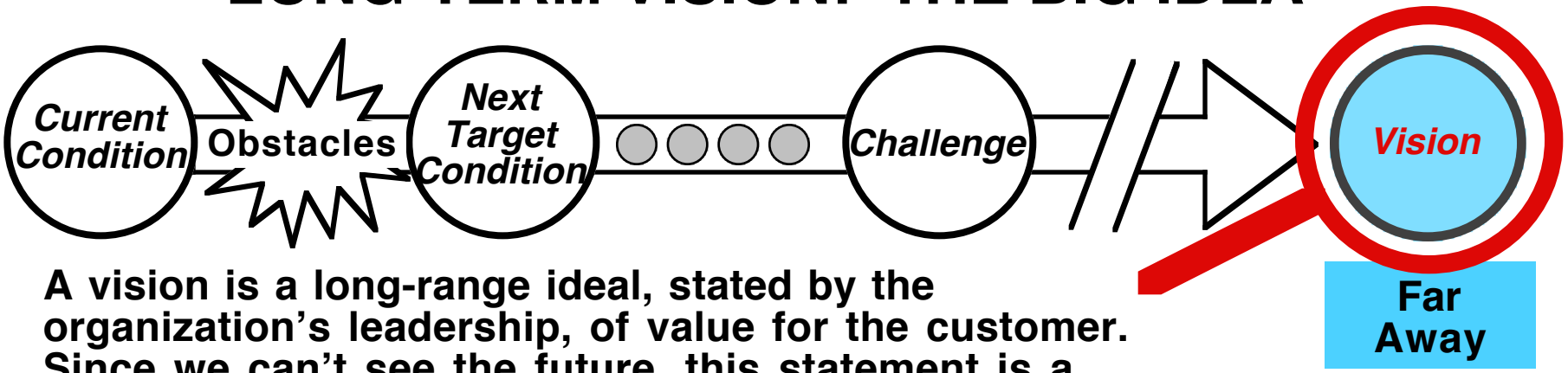

***"When people see themselves as components in a system [and] work in cooperation to achieve a shared aim, they feel that their efforts hold meaning. They experience interest and challenge and joy in the work."***

~ W. Edwards Deming, The New Economics, page 128

# LET'S LOOK AT EACH OF THESE ELEMENTS



# LONG-TERM VISION: THE BIG IDEA




**A vision is a long-range ideal, stated by the organization's leadership, of value for the customer. Since we can't see the future, this statement is a description of value that's not limited to the organization's current products or technologies. If you look beyond the processes and products you have today (which can blind you to the bigger picture), what do customers actually need or want?**

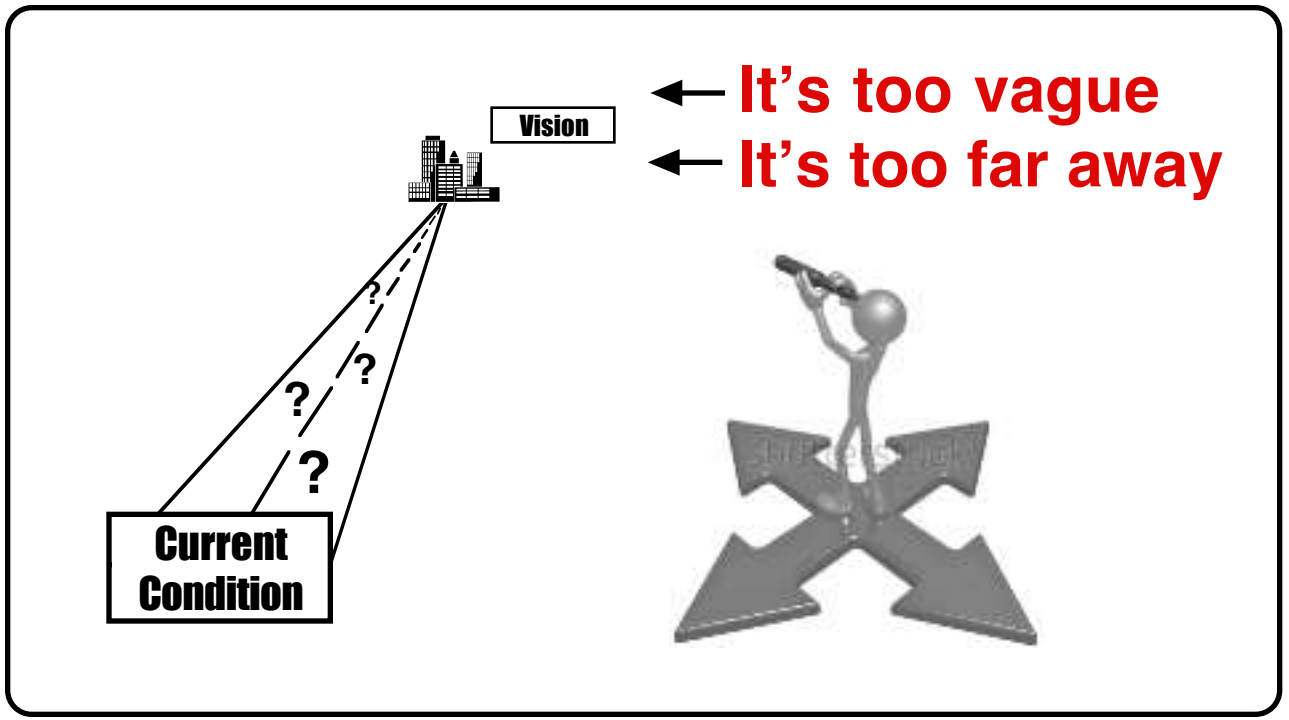
**For example, a long-term vision statement for an automobile manufacturer could be, *"Better transportation for more people."* A vision statement for a manufacturer of drills could be, *"Holes where you want them when you want them."***

**It's acceptable and even desirable for the vision to represent a puzzle from the perspective of current competencies. It's far away, difficult to imagine, and the path to it is not foreseeable.**

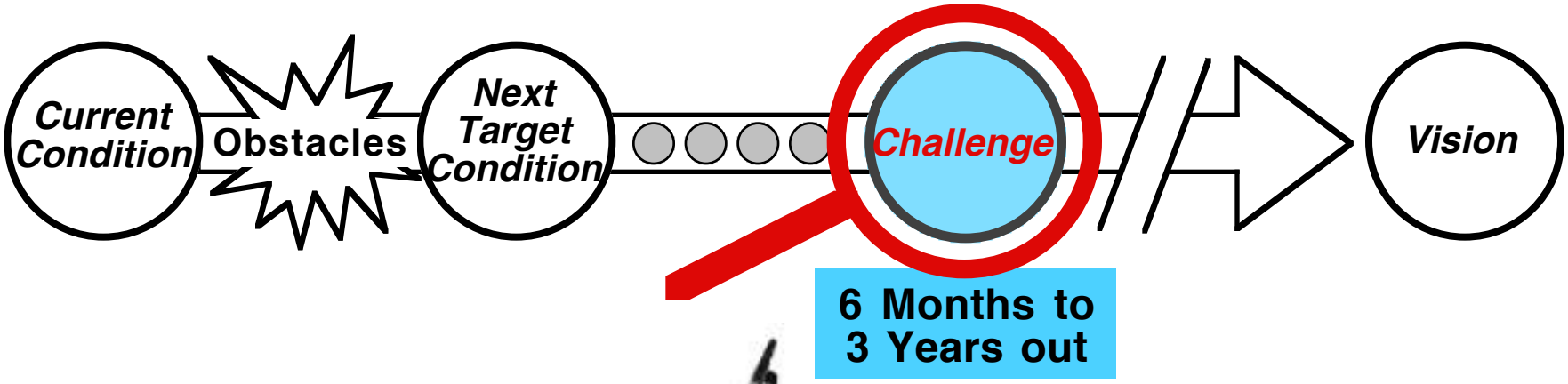
**This sense of direction gets deployed into the organization by defining more specific challenges or themes that guide and inform application of the Improvement Kata pattern, to strengthen existing capabilities or develop new capabilities as necessary to move in the desired direction.**

**Further details on establishing a long-term vision are outside the scope of the Improvement Kata Handbook.**

# BUT A VISION BY ITSELF IS NOT A GOOD GUIDE FOR DAILY IMPROVEMENT EFFORTS



# THE MOST IMPORTANT DIRECTION GIVER IN AN ORGANIZATION IS A CLOSER, MORE SPECIFIC, WELL-STATED STRATEGIC CHALLENGE




**The Challenge is the context, or "frame," for the three steps of the Improvement Kata that follow**





# WHAT IS AN OVERALL CHALLENGE?

## A challenge is a description of success 1-3 years in the future

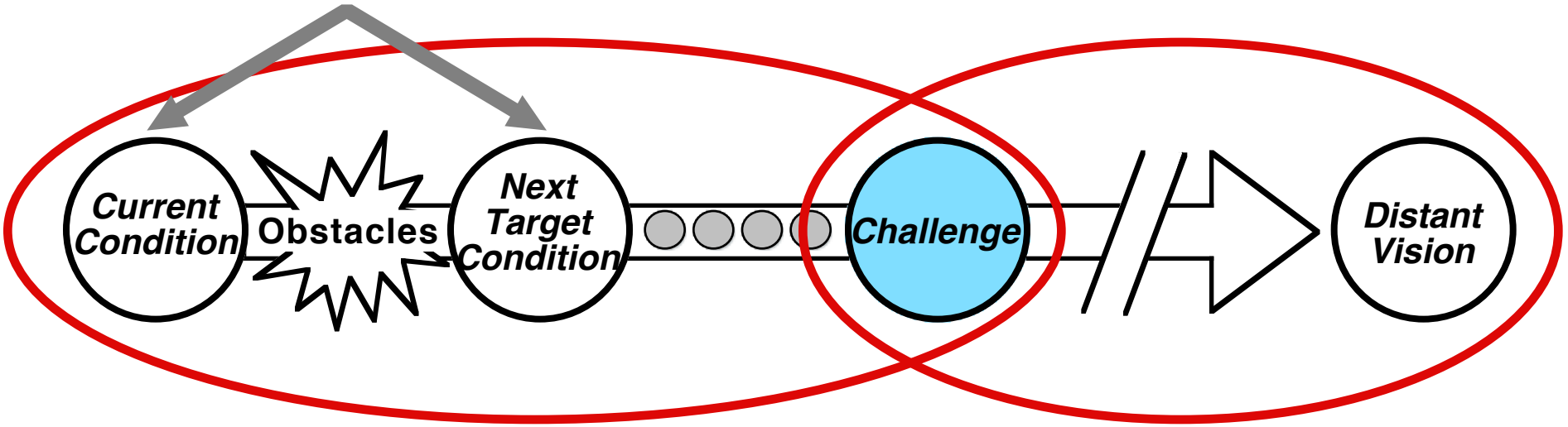
- A challenge is a new condition that you envision, which will cause you to stretch and grow. As you try to describe your challenge, think of the words: *"Wouldn't it be great if we could..."*
- In business organizations it's a description of a new level or pattern of performance related to better serving the customer, which will differentiate your offering from other offerings.
- It's something you can't achieve using the current system or process.
- A challenge is typically 6 months to 3 years in the future. It cannot be reached quickly in a few steps.
- Not easy, but not impossible. Achievable, but we don't know in advance how we'll achieve it. Takes a series of target conditions to achieve.
- Does not state how to get there or present a value judgement.

# THE ROLE OF CHALLENGE IN AN ORGANIZATION

## An overall Challenge is a theme that helps connect strategy with execution

**Managers** develop people by coaching application practice of the Improvement Kata in the direction of the challenge

**Leaders** establish the organization's strategic concept (the "rallying point" or overall direction)




**Execution** **Strategy**

# WHY AN OVERARCHING CHALLENGE IS SO IMPORTANT

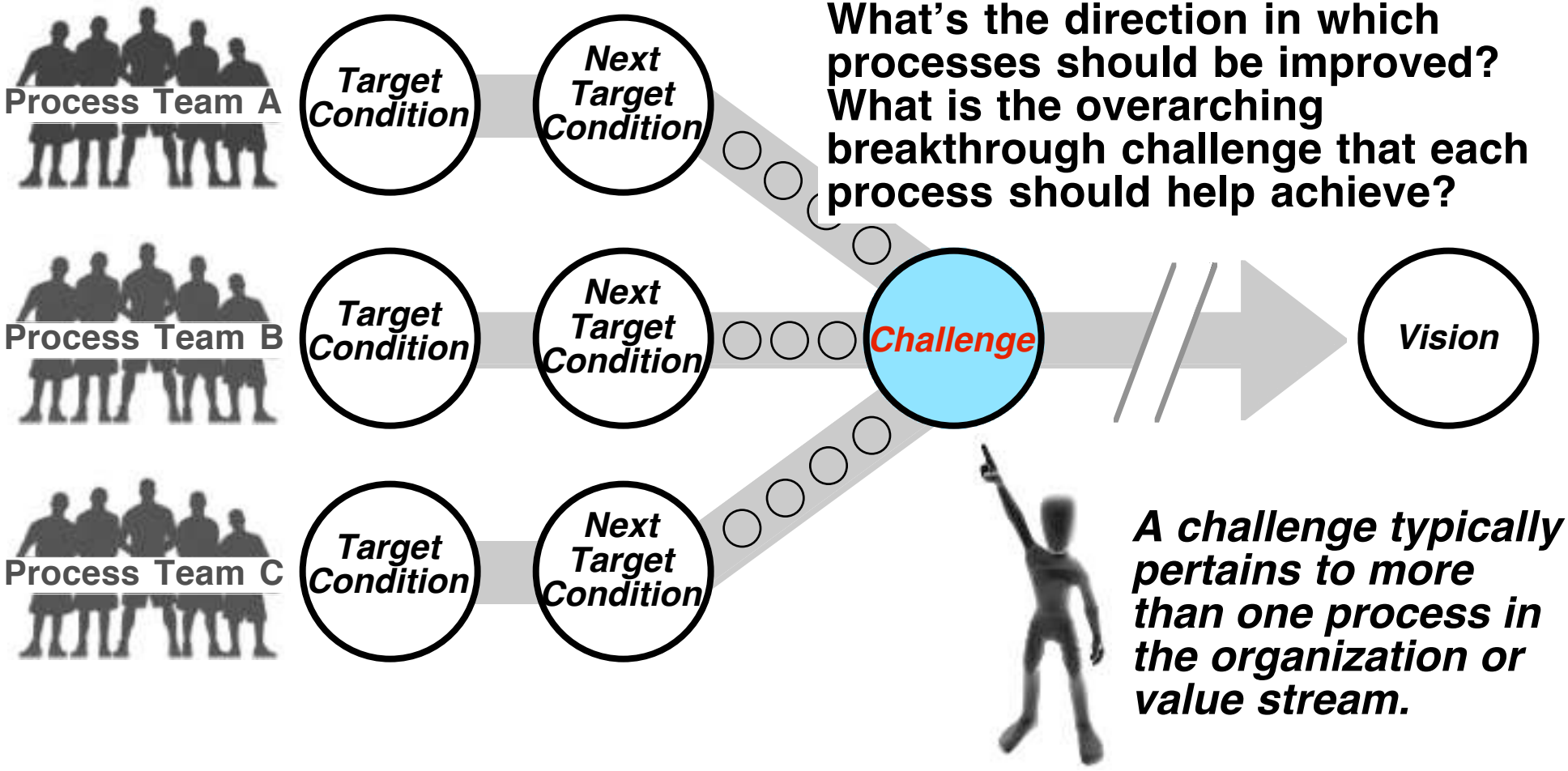
**The overall challenge guides every day's work. Without it:**

- **An organization is unaligned. Improvement efforts and proposals get ROI-evaluated independently, instead of as part of reaching for something. We tend to use short-term cost/benefit analysis to choose what steps to take, which dangerously keeps us inside our current knowledge threshold.**
- **We tend to jump from one direction to another in trying avoid obstacles, rather than struggling through the obstacles to achieve the innovations and important competencies of tomorrow.**
- **Improvement becomes reacting to problems ("troubleshooting" to maintain the status quo) rather than reaching for a new level of performance and the future of our choosing.**

**Without an overarching challenge teams can get dragged down by problems. With a challenge we can develop a higher energy level.**

# AN OVERALL CHALLENGE HELPS TO ALIGN AND CONNECT INDIVIDUAL IMPROVEMENT EFFORTS

## The overall challenge is used to help ensure that process-level improvement efforts have a focus and fit together





# Practice Routines

# CHALLENGE-DEVELOPMENT QUESTIONS

**A basic question to ask yourself is:**
***"Wouldn't it be great if we could _____!"***

1. **What is the distant, very long-term vision for our organization? What challenge will now help us move in that direction?**

2. **What do our customers value that they are not currently getting from us?**

3. **What special product or service capability do we want to develop?**

4. **What changes are happening in our environment that could make our current capabilities less special?**

5. **What does success three years from now look like?**

# Note:
# *EFFICIENCY* AND *COST CUTTING* ALONE ARE NOT A DIRECTION

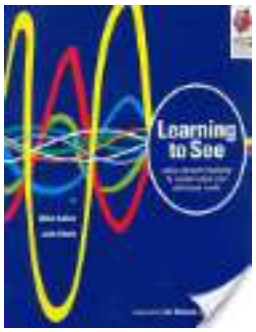
**Just pursuing low cost is unlikely to be a source of sustained competitive advantage. This can lead you into a commodity trap, where in order to compete you end up pursuing ever-lower-cost inputs and endanger quality. It can easily lead to a static and vulnerable organization.**

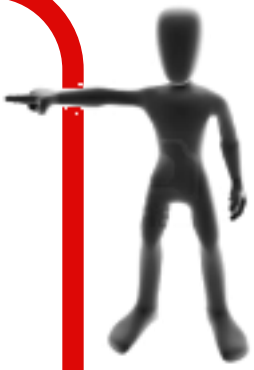
**Rather than managing the operational side of the business simply to be efficient, with the Improvement Kata approach managers guide activities that support a strategic purpose that grows and differentiates the business (which can include efficiency, of course). Strive to better serve customers and distinguish your organization from competitors. Cutting cost and improving efficiency can be done *as necessary* to achieve this.**

**Defining a vision or strategic purpose is about building unique value; i.e., distinctive differences that are valuable to customers. This provides qualitative directional guidance for the organization.**

*Value Stream Mapping*

# YOU CAN ESTABLISH OVERALL CHALLENGE THROUGH A FUTURE-STATE VS MAP



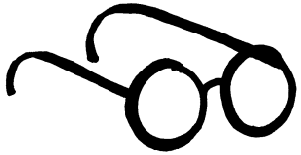
**Future-State Mapping at the product-family level can provide the necessary sense of direction and challenge for the IK pattern.**

**A future-state Value Stream map is sometimes even called a *Challenge Map*.**

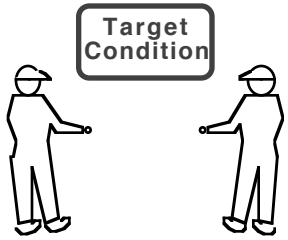
**Understand the Direction**



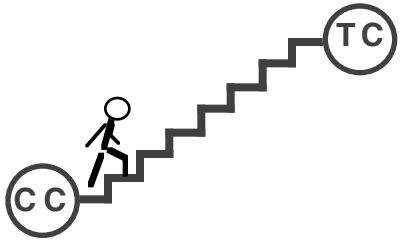

**Grasp the Current Condition**



**Establish the Next Target Condition**




**Iterate Toward the Target Condition**



# WHERE VALUE STREAM MAPPING FITS IN

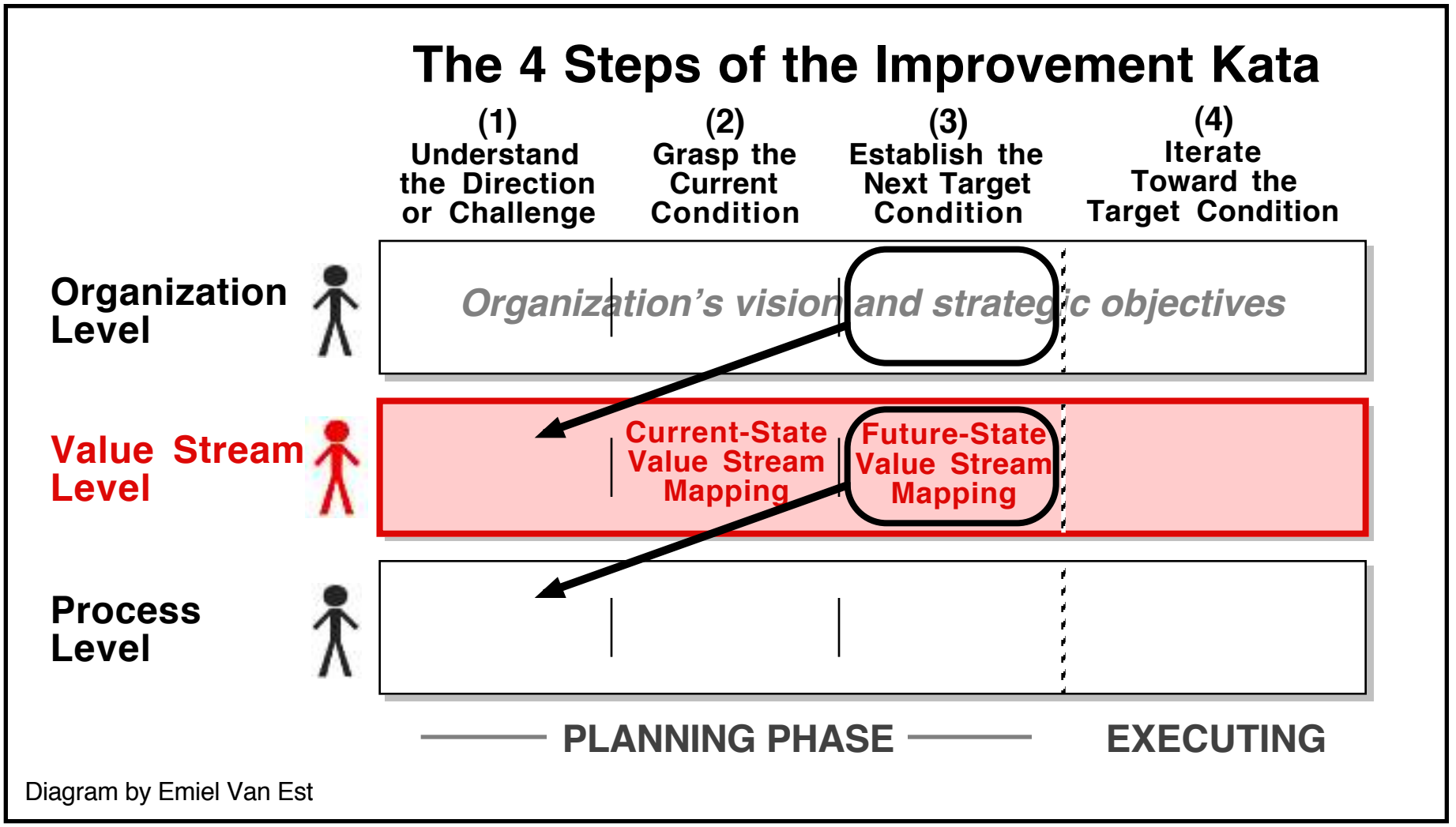


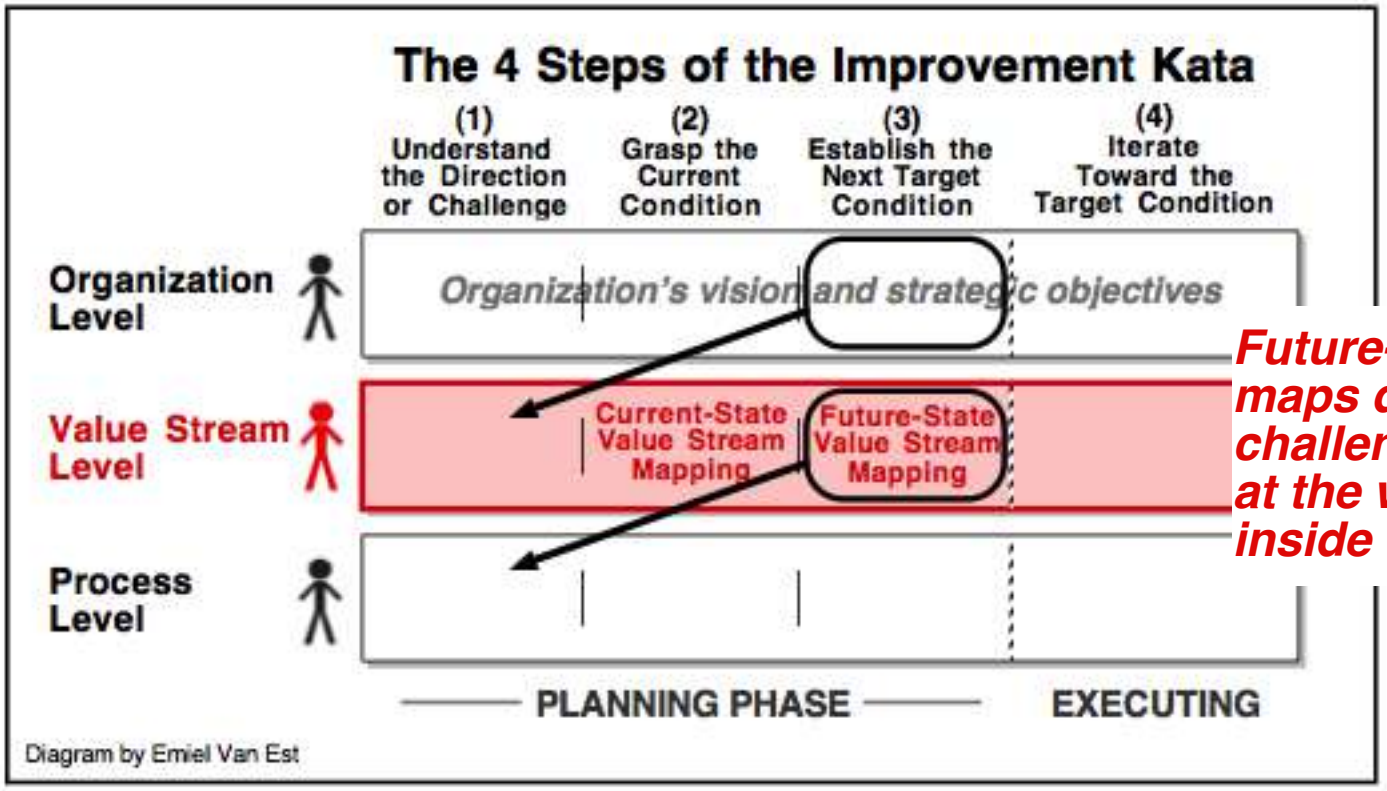

Diagram by Emiel Van Est

# HOW IT WORKS

**The diagram on the previous page & below depicts how the four steps of the Improvement Kata pattern are utilized at each level of an organization. The diagonal arrows show how the *Target Condition* at one level becomes the *Direction or Challenge* for the next level down.**

**At the value-stream level, current-state value stream mapping is used for the Kata step of grasping the current condition, and future-state mapping is used for the Kata step of establishing the Target Condition.**

**VSM is then often also used to assess and design value stream loops.**

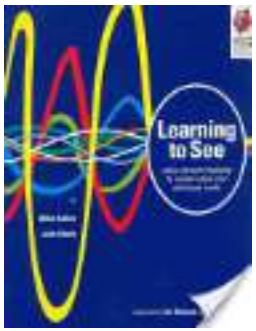



***Future-state value stream maps define the direction or challenge for improvement at the work processes inside that value stream***

# A FUTURE-STATE VALUE STREAM MAP COORDINATES IMPROVEMENT EFFORTS

**A future-state map describes in a graphic format how you want a value stream to be functioning in 1-3 years.**

**The future-state value stream map provides an overarching challenge & coordination for establishing target conditions at the individual loops and processes inside a value stream.**




**See p.86 in *Learning to See***



**What do the processes inside this VS loop need to work on, to help achieve the future-state *value stream* design?**



# ONCE YOUR FUTURE-STATE MAP IS DRAWN, WRITE THE OVERALL CHALLENGE AS A *STATEMENT*

**The overall challenge should describe a desired state that people can relate to and rally around, that is measureable in some aspect. But the challenge is not just a number. It should be personally relevant to the members of the organization. A good challenge focuses a team's attention and effort and is often published as a compact, inspiring *challenge statement*.**

| Example Challenges<br>*Wouldn't it be great if we could...* | Example<br>Challenge Statement |
|---|---|
| • ...machine parts 1x1 directly in the assembly process. | *"Machine to assemble"* |
| • ...paint parts 1x1 directly in the assembly process. | *"Paint to assemble"* |
| • ...build one customer kitchen at a time and put it right on the truck. | *"Build to truck, kitchen at a time"* |
| • ...have lab-test results done in 45 minutes, with no errors. | *"Know in 45"* |
| • ...take 7 days from new patient referral to evaluation. | *"Just a week"* |
| • ...assemble the day ordered, and ship the next day. | *"Same day, next day"* |

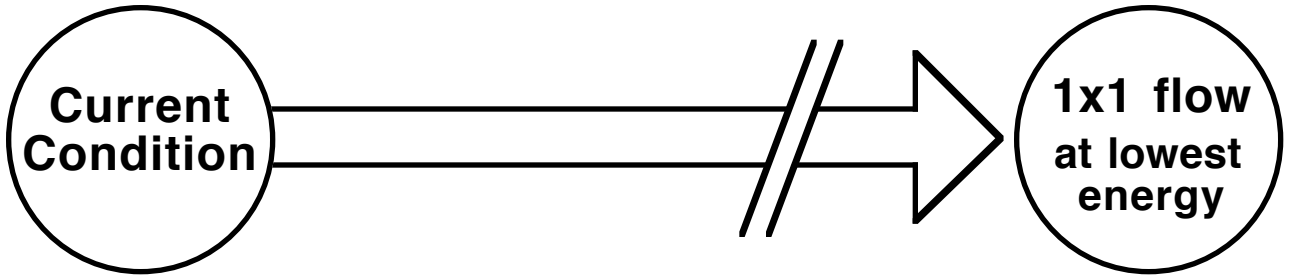
# IS THERE A COMMON, UNIVERSAL CHALLENGE FOR BUSINESS ORGANIZATIONS?

**Much of human endeavor involves striving toward what one might call, *"1x1 flow at lowest energy"* - or - *"the customer getting the value that is wanted or needed, when and where it is wanted or needed."***

**This can be seen as a general challenge around:**

1) **Produce to each customer's order**
2) **With a short lead time**

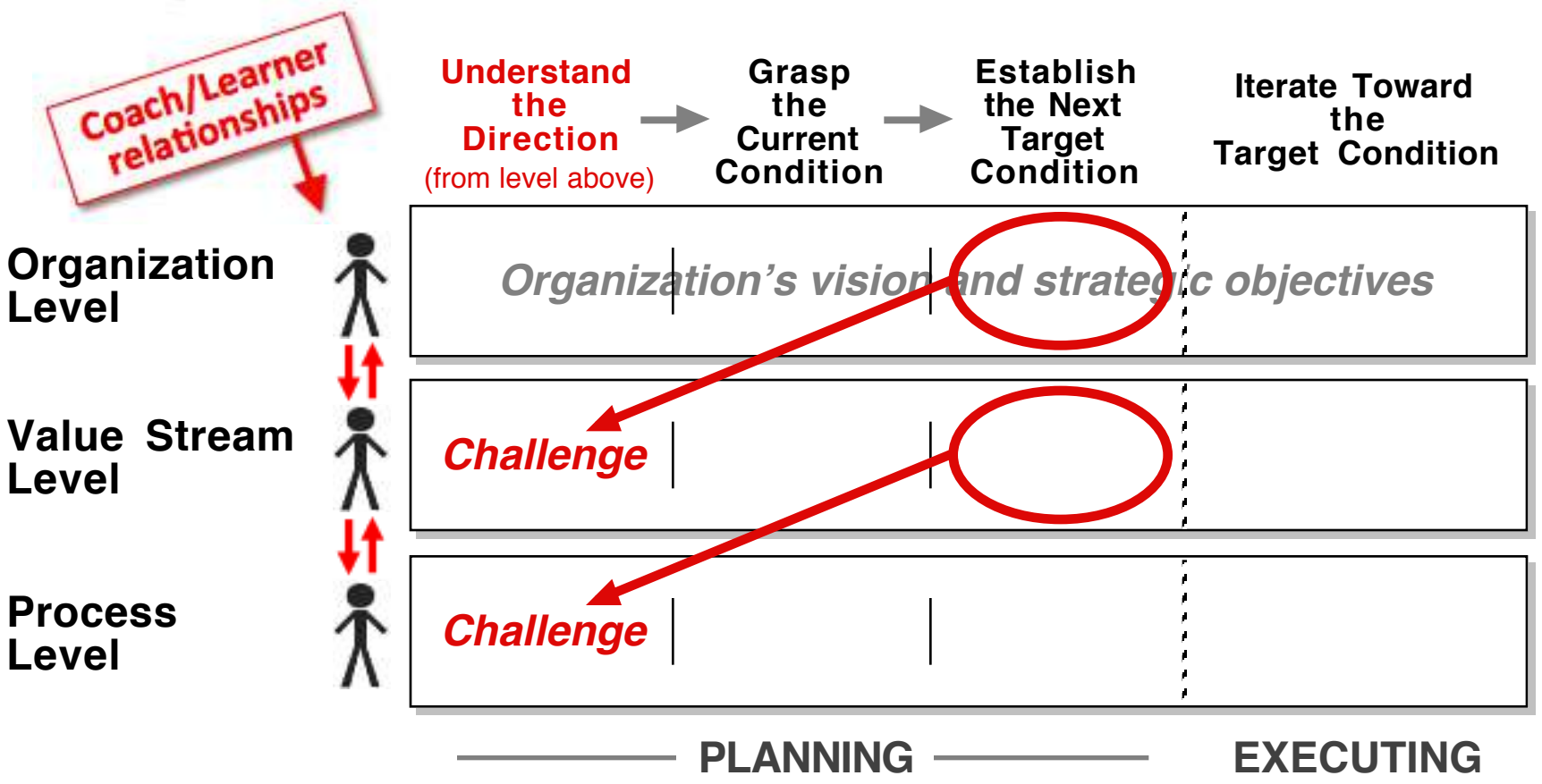
**Of course, each organization would state this challenge more specifically and in a way that fits to it's customers, products and situation. Notice also that a wide range of improvement activity involving everyone in an organization will ultimately be necessary in striving to get ever closer to this goal.**



# THERE IS A *VALUE STREAM* CHALLENGE PLUS A SUBSET *SPECIFIC TO YOUR PROCESS*

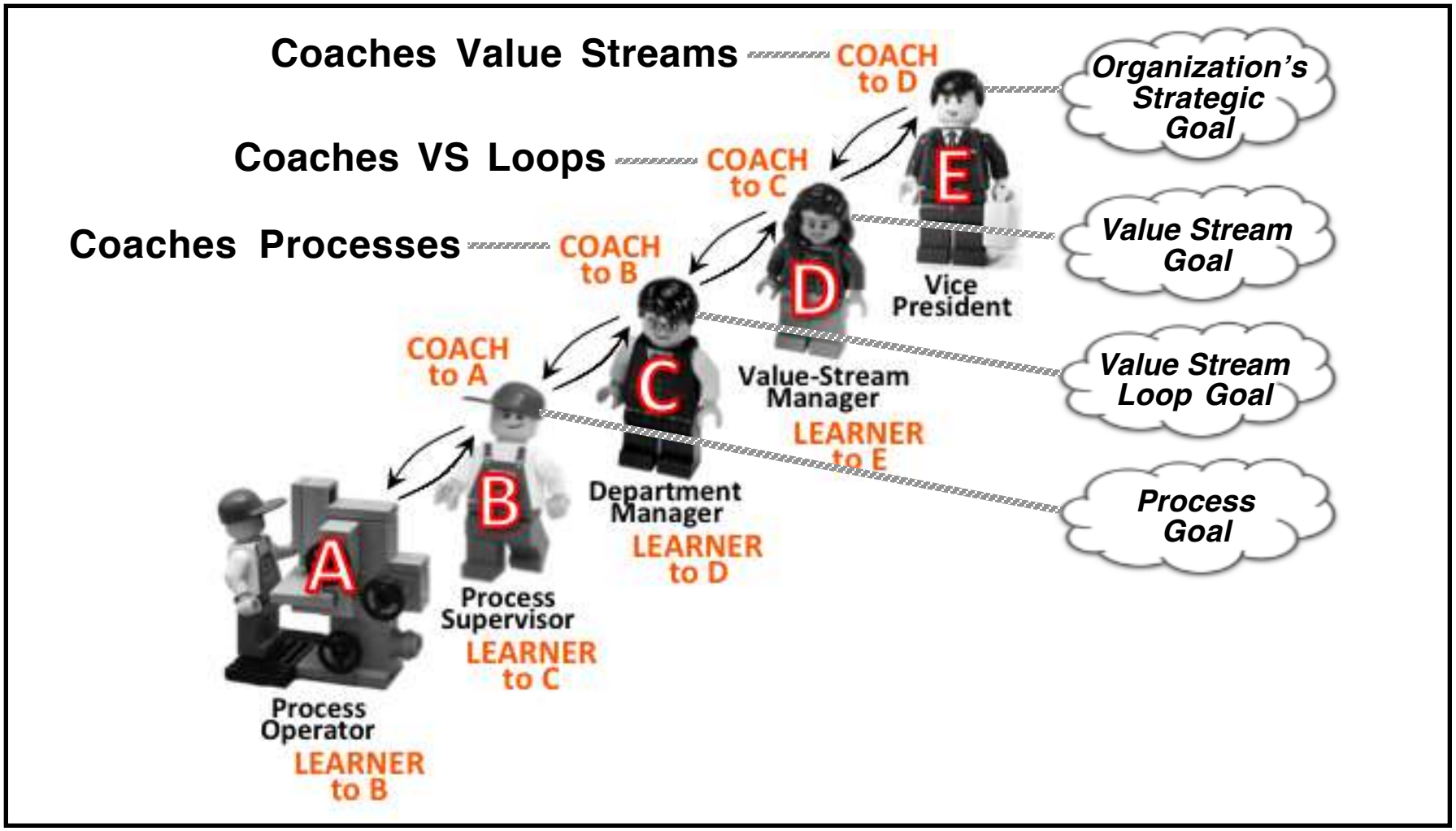
**The specific Challenge at your process will come from the Target Condition one level above you. Challenges and Target Conditions should be mathematically linked up-and-down the organization.**

**Ask: *"How does the Challenge for our process relate mathematically to the larger (value stream) challenge?"* Write <u>your</u> Challenge on your storyboard.**



# DIFFERENT LEVELS OF CHALLENGE

## What coaching to a Challenge looks like




**Leadership coaches the next level down in defining an overall Challenge in the direction of the vision. Below that, the *Target Condition* from the level above becomes the *Direction* or *Challenge* for the level below.**

# LET'S LOOK AHEAD TO THE REST OF THE IMPROVEMENT KATA PATTERN

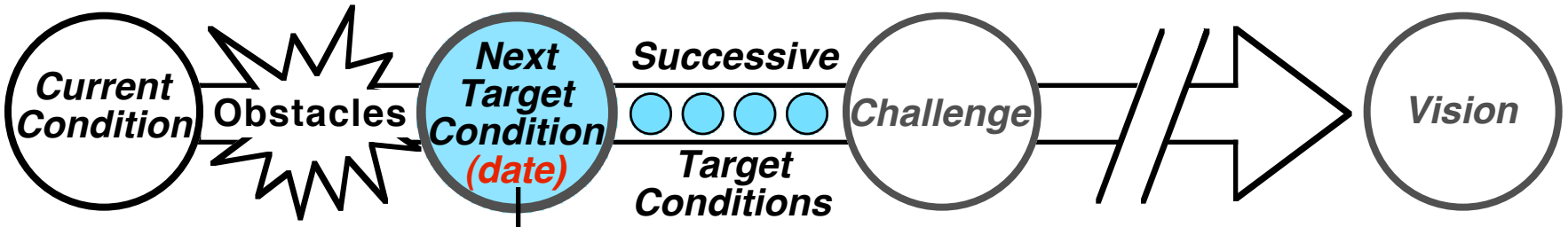


# HAVING A CHALLENGE IS NOT ENOUGH

## Having a challenge without the ability to execute is ineffective

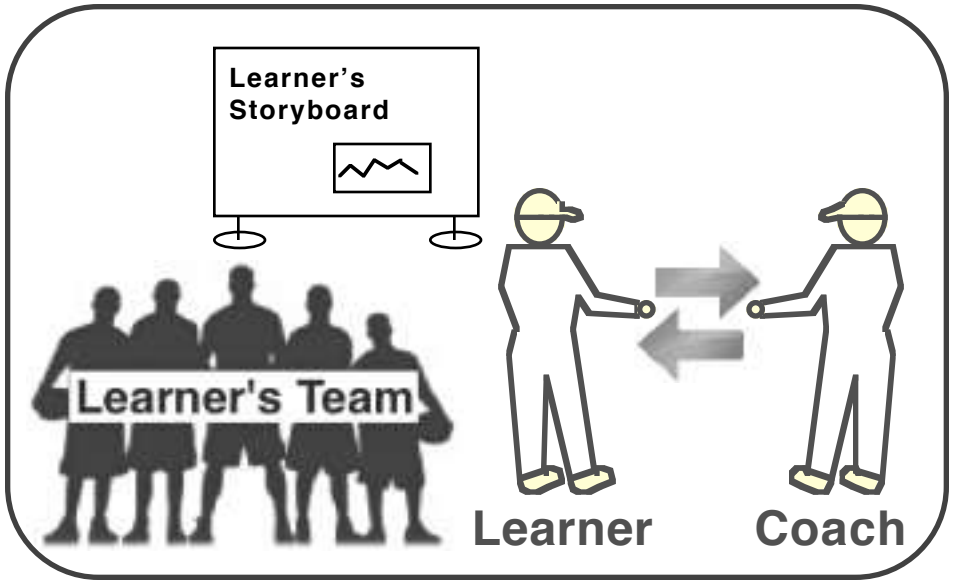
**Just issuing challenges is not sufficient for achieving improvement, adaptiveness and innovation. People in the organization also need to master a systematic, scientific way of working toward a challenge.**

**Looking ahead to the rest of the Improvement Kata (where execution takes place) it's a series of Target Conditions that day-to-day improvement efforts at each level will actually be aiming for.**




**1 Week to 3 Months out**

**Describes the next desired condition, to be reached by a specified achieve-by date.**

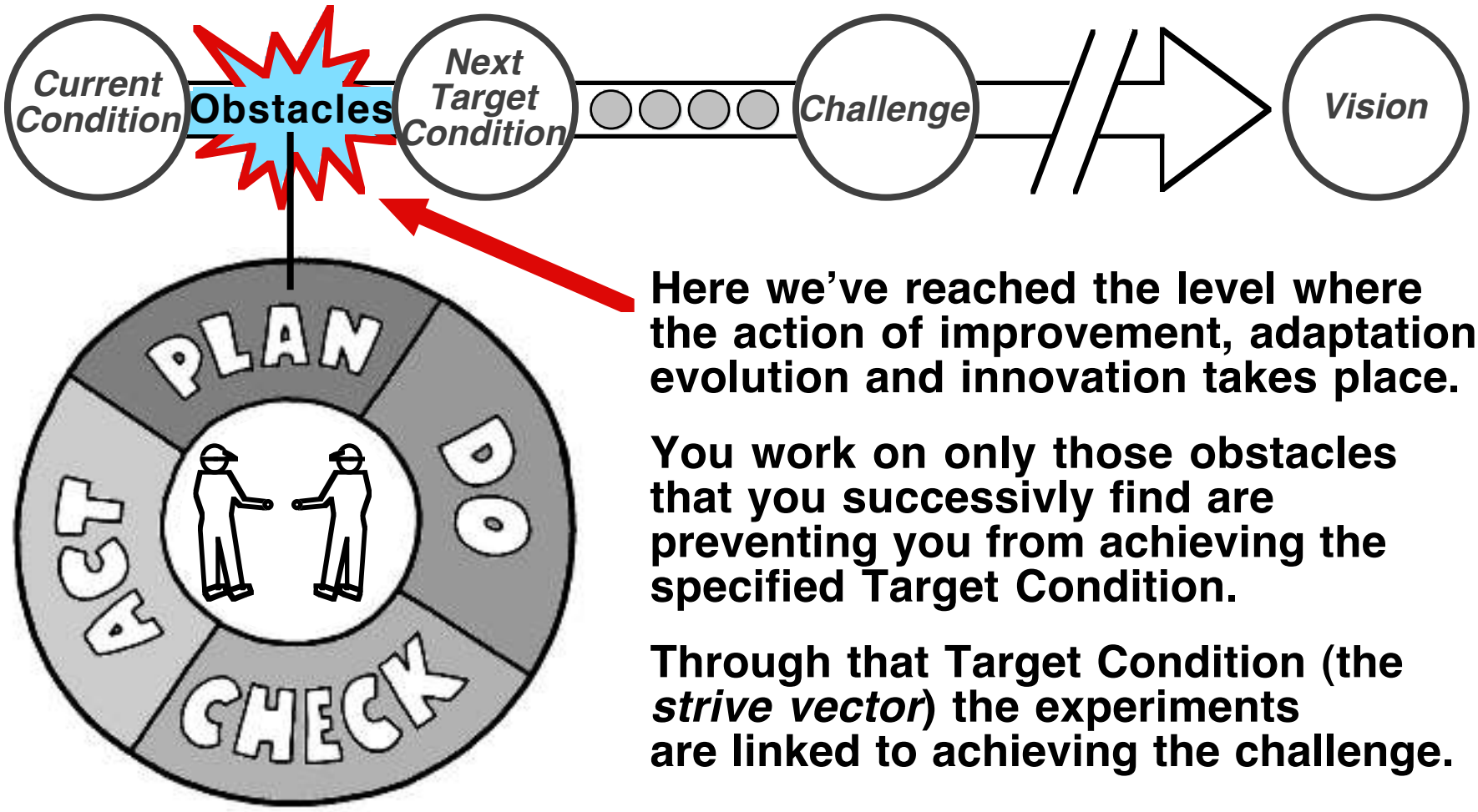


# SOME DIFFERENCES BETWEEN A TARGET CONDITION AND A CHALLENGE

| TARGET CONDITION | CHALLENGE |
|---|---|
| • Is developed in your area<br><br>Developed by the Learner, guided by the Coach (manager)<br><br>• Achieve-by date is 1 week to 3 months out<br><br>A series of successive target conditions is necessary to meet a challenge. When you achieve one target condition you set the next target condition. | • Comes from the level above you<br><br>• 6 months - 3 years out |

# Finally... Obstacles to each Target Condition are where rapid experimentation takes place

## This = iterating (experimenting) toward the Target Condition



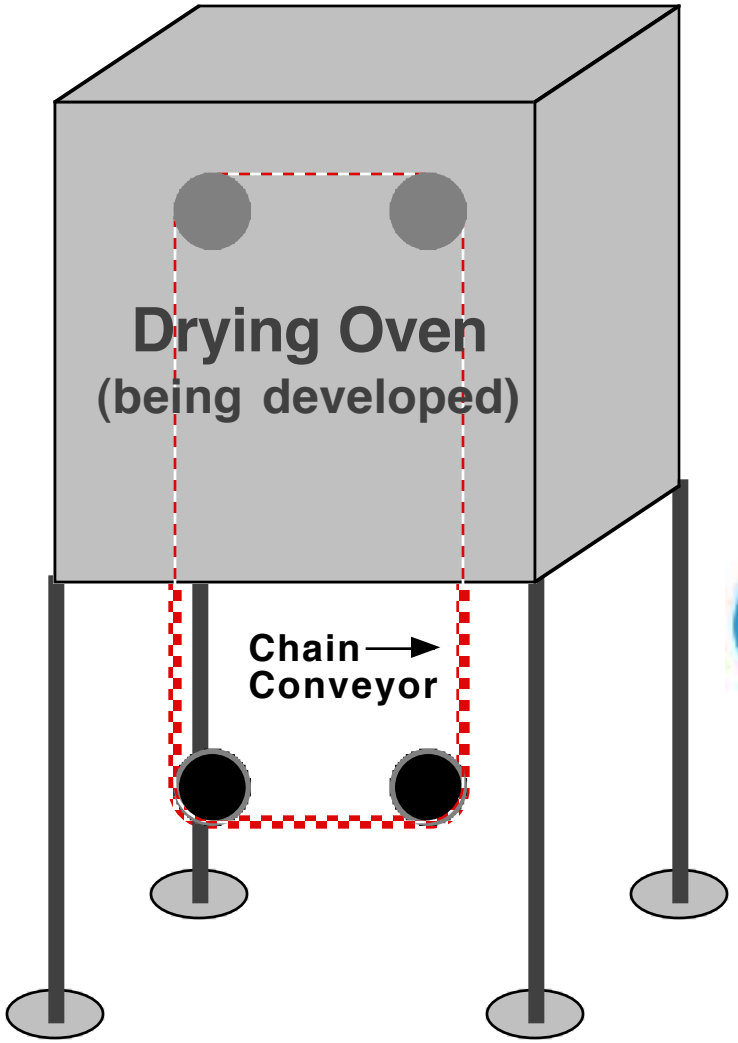

**Here we've reached the level where the action of improvement, adaptation, evolution and innovation takes place.**

**You work on only those obstacles that you successivly find are preventing you from achieving the specified Target Condition.**

**Through that Target Condition (the *strive vector*) the experiments are linked to achieving the challenge.**

# A MANUFACTURING EXAMPLE

## This team's Target Condition is in-line paint-drying oven with certain attributes




| | |
|---|---|
| VISION | *1x1 Flow* |
| CHALLENGE OR THEME | *Paint in Line* |
| NEXT TARGET CONDITION | *In-Line Oven (attributes defined)* |
| CURRENT OBSTACLE | *Chain conveyor is derailing* |

*More General*

*More Specific*

*Detailed Experiments are here*

***Current Obstacle:***

***The chain conveyor derails when parts are hung on it.***

***The team is now experimenting here.***

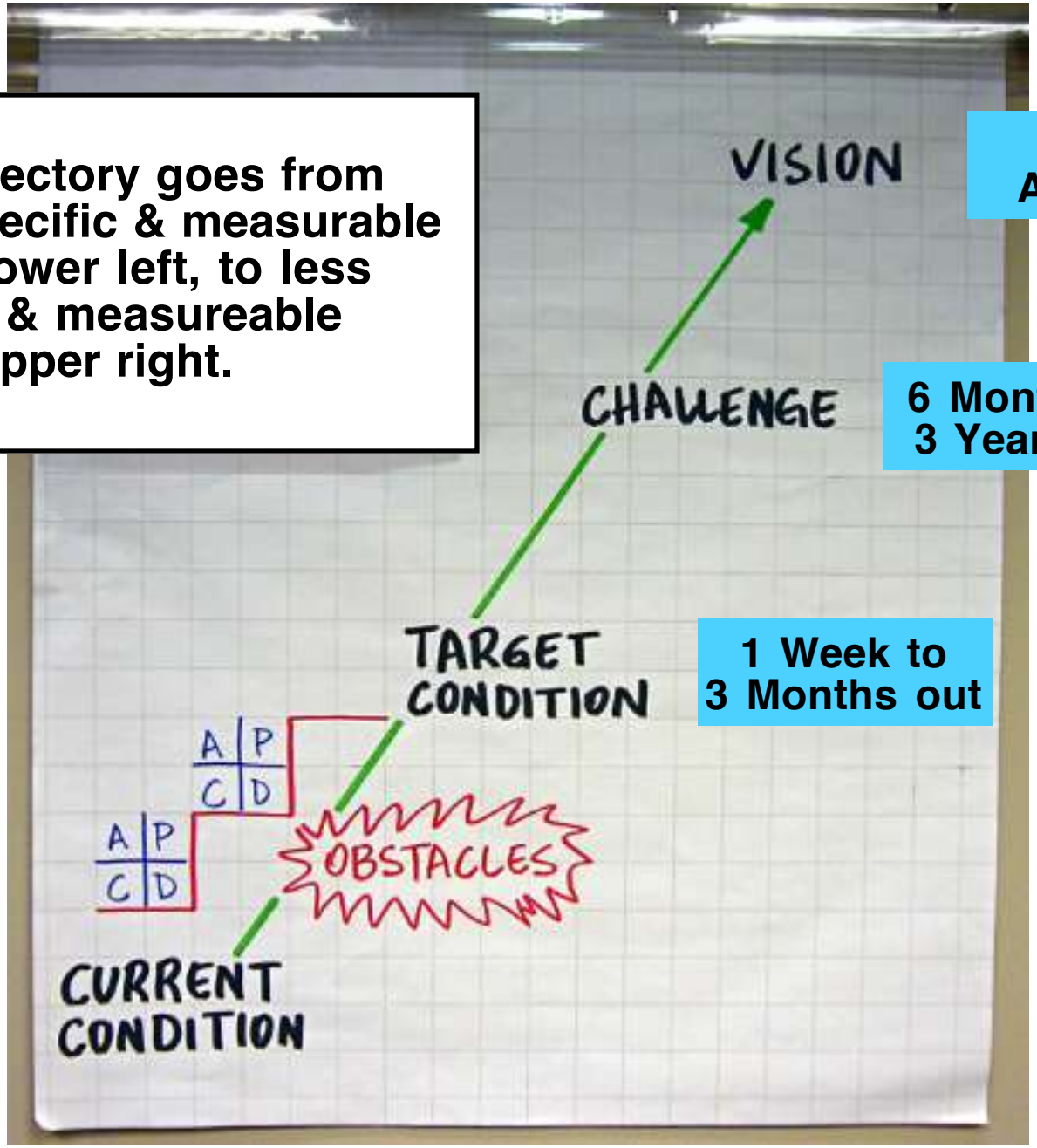
# HOW THE IMPROVEMENT KATA PATTERN ALIGNS WITH THE STEPS OF TRADITIONAL SCIENCE

**This Handbook seeks to teach Scientific Thinking in a way that relates to everyday life in business, education, politics and at home. Although the emphasis here is more on 'striving' rather than just scientific 'understanding,' the Improvement Kata pattern is well aligned with how scientists traditionally work.**

| Traditional Science | Improvement Kata Pattern | Example |
|---|---|---|
| "Research Topic" | Challenge | *Paint in Line* |
| "Research Problem" | Target Condition | *In-Line Oven* |
| "Research Question" | Obstacle | *Chain conveyor is derailing* |
| "Hypotheses" | Experiments | *Test a different chain* |

# SUMMARY

This trajectory goes from more specific & measurable on the lower left, to less specific & measureable on the upper right.




Far Away

6 Months to 3 Years out

*This Chapter*

1 Week to 3 Months out

*Next 3 Chapters*

# Chapter 5

## The Improvement Kata - Planning Phase

## Step 2: GRASP THE CURRENT CONDITION

### A Simple Process-Analysis Kata

Practice this Routine



# ORIENTATION




LEARNER

**Understand the Direction**

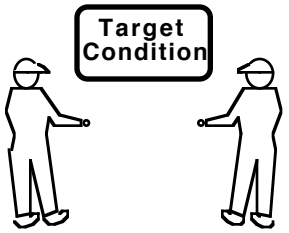


**Grasp the Current Condition**

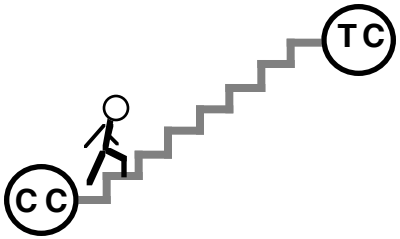


**What is the current performance and working pattern?**

**Establish the Next Target Condition**



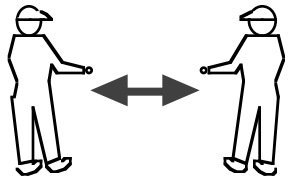

**Iterate Toward the Target Condition**




COACH

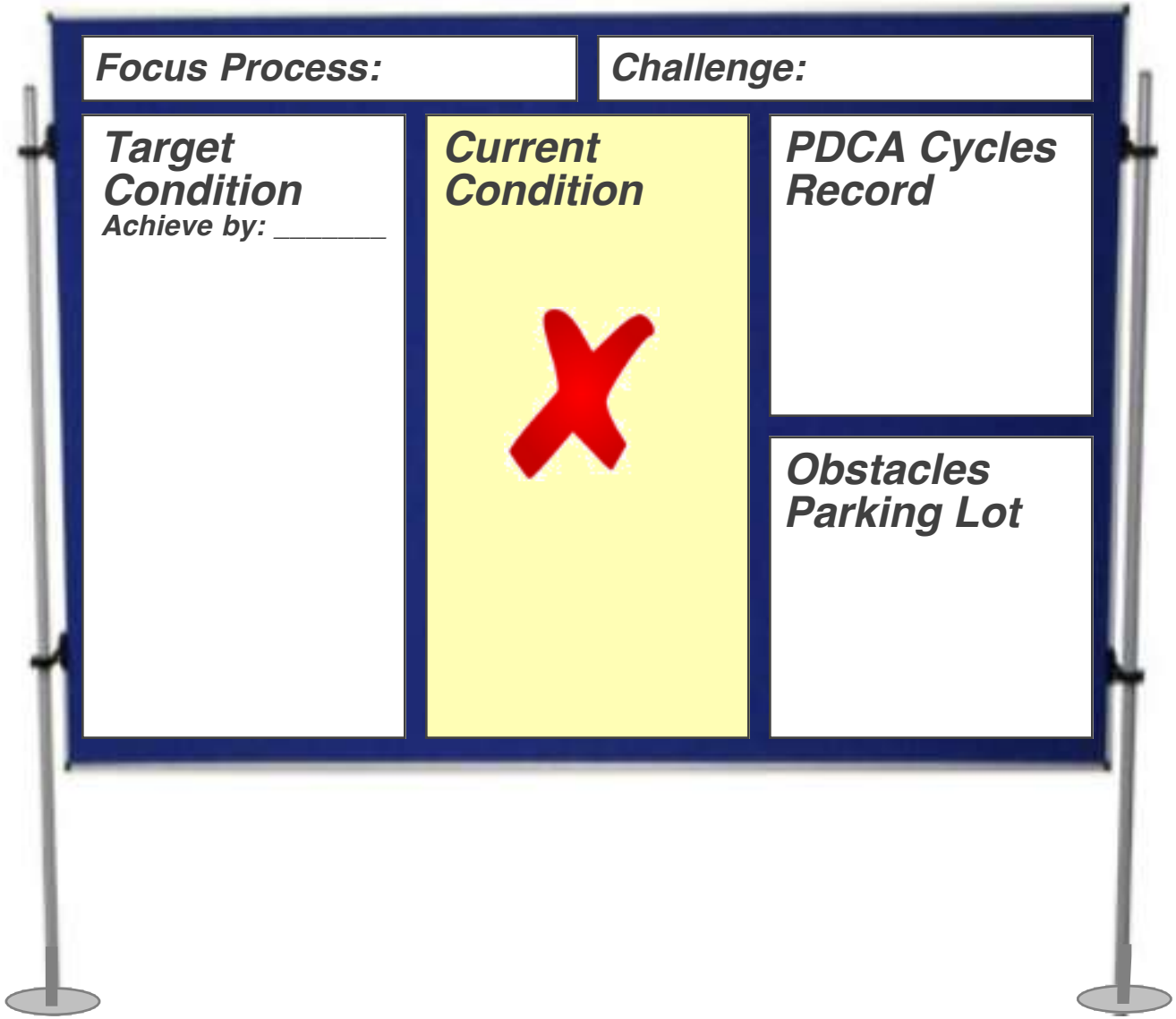
**'Planning' Coaching Cycles**

**'Executing' Coaching Cycles**



# LEARNER'S STORYBOARD

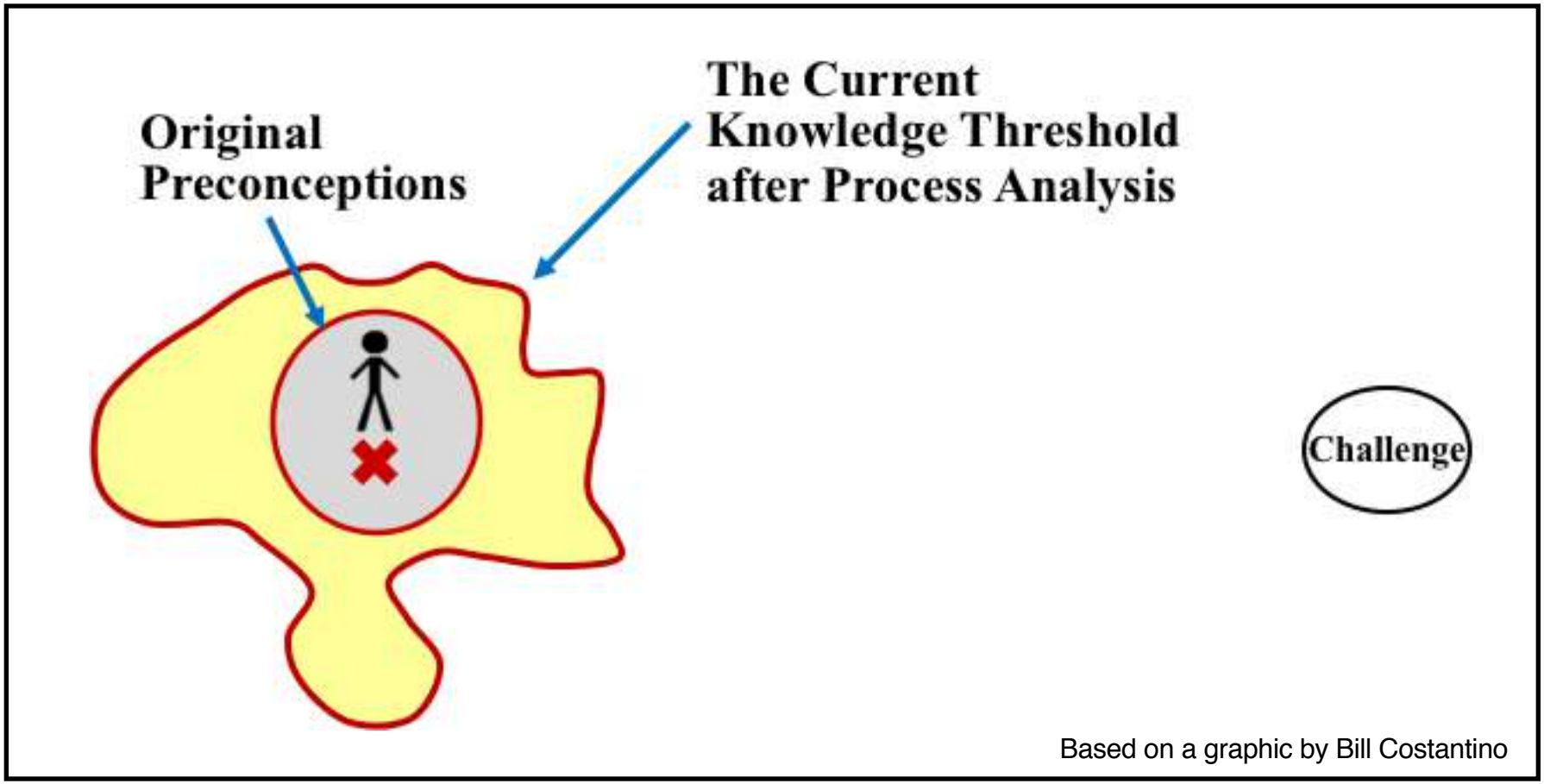
**Learner and Coach are now concentrating on this field** ✗



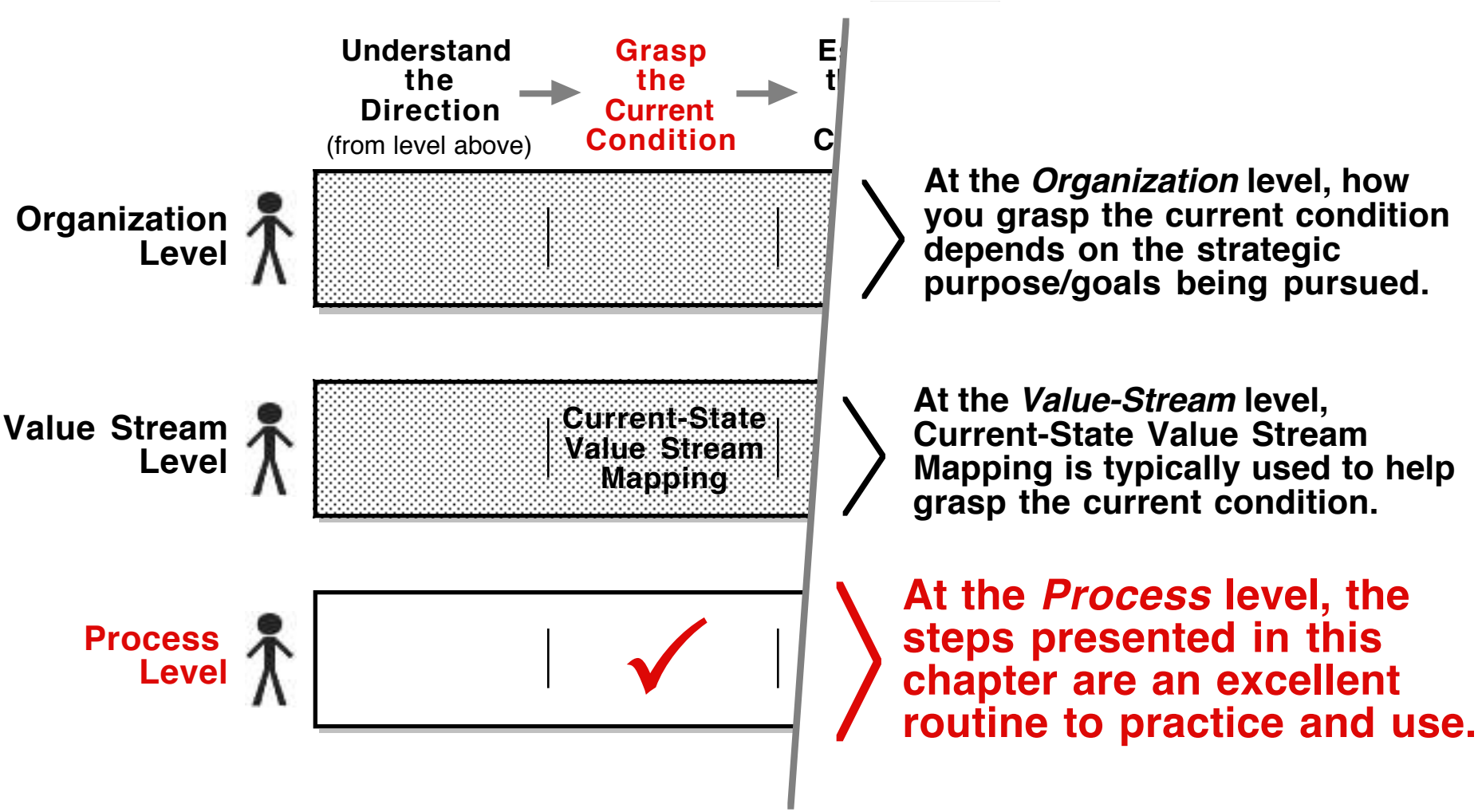

Concept
Overview

# WHAT IS *GRASPING THE CURRENT CONDITION*?

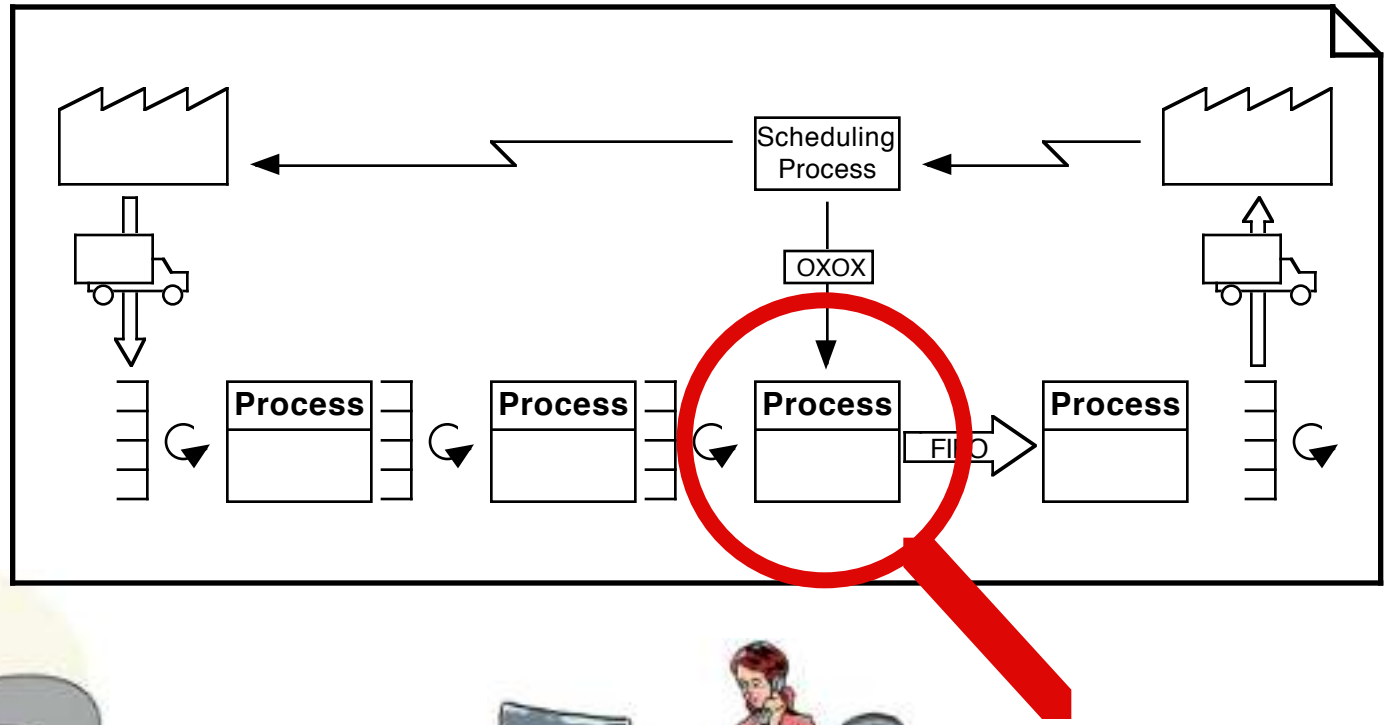
**Grasping the current condition here means immersing yourself in a focus process to analyze and understand how it currently performs and operates. This chapter provides you with a structured practice routine (a Kata) for doing that with any work process.**

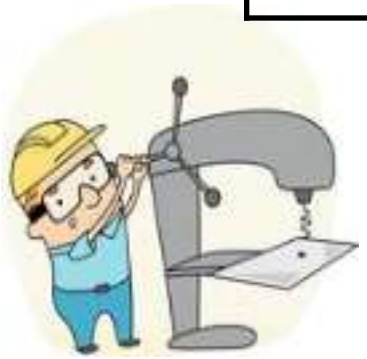


# THIS CHAPTER PRESENTS A SIMPLE ROUTINE FOR GRASPING THE CURRENT CONDITION AT THE PROCESS LEVEL



# THIS PROCESS ANALYSIS IS TYPICALLY DONE AT AN INDIVIDUAL WORK PROCESS







**A PROCESS is the work that a *person* or a *group of persons* do as they interact with objects such as routines, schedules, materials and equipment.**

# PURPOSE

**The purpose of this process analysis Kata is to get a baseline understanding of the focus process. That's all.**

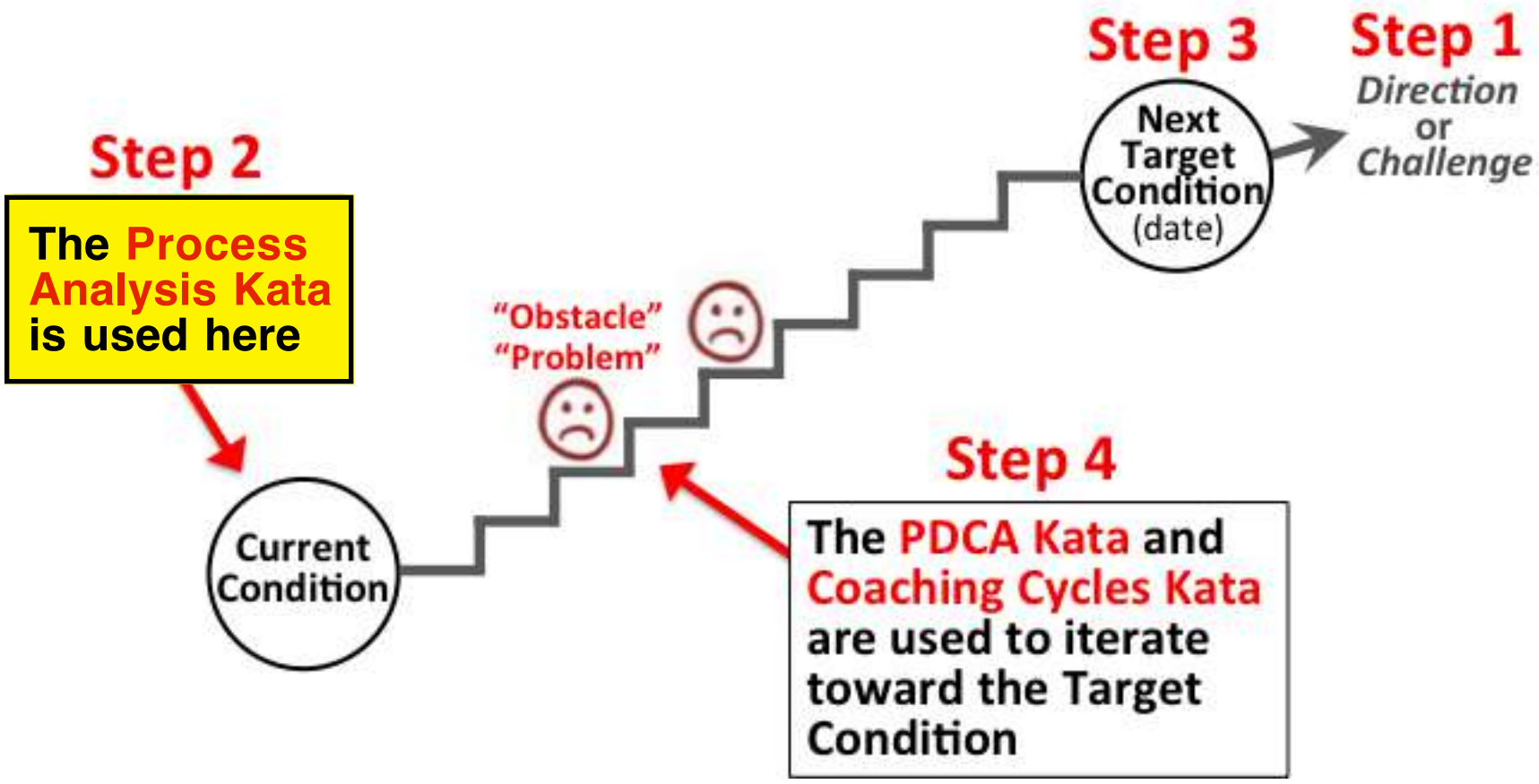
***Process Analysis (or "Grasping the Current Condition") is about getting an understanding of the current outcome performance and operating characteristics/patterns of the focus process, so you can then define an appropriate next "Target Condition."***

**Process Analysis is a prerequisite for establishing a Target Condition. Analyzing the current condition is done to obtain facts & data about what's really going on, which you then use to describe an appropriate next target condition.**

**Caution! The purpose of this process analysis is not to uncover problems, wastes or potential improvements. Process Analysis is *not* about identifying issues to work on. Once you have established a target condition and strive to move toward it, then you'll discover the obstacles that you *need* to work on.**

**Grasping the initial current condition is a step toward establishing a first Target Condition. When you are ready to establish a second Target Condition for the same process you'll have learned a lot about that process through the experimenting in the *Executing* phase of the Improvement Kata. The process analysis for the second Target Condition may therefore procede more quickly, since you are not starting over.**

# WHERE THIS PROCESS ANALYSIS FITS INTO THE IMPROVEMENT KATA STEPS



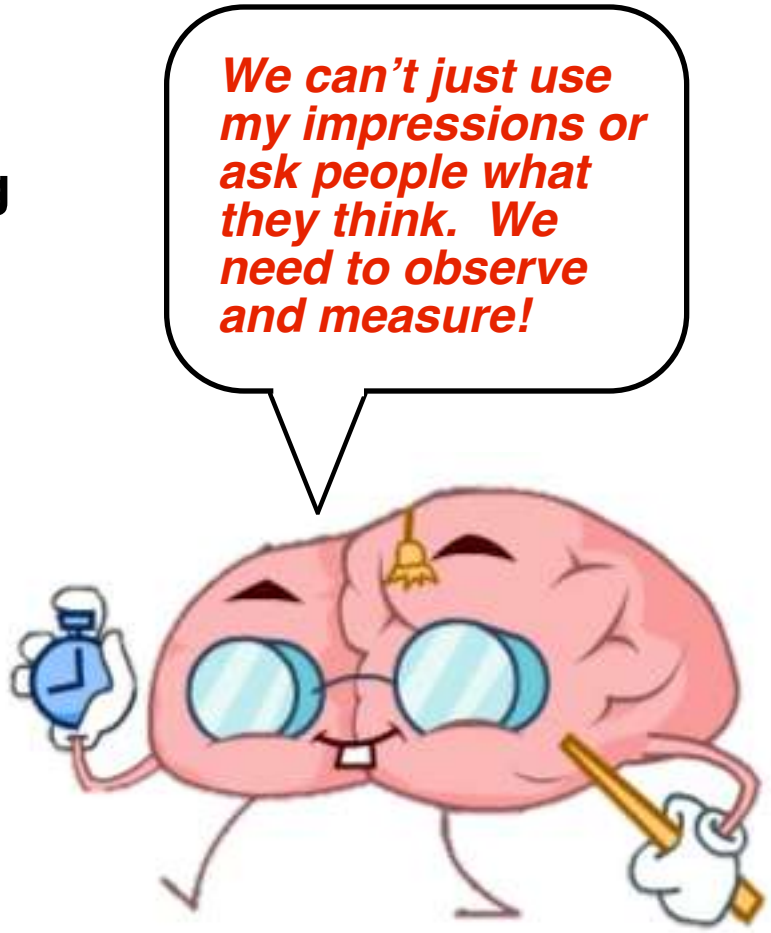
# REALITY IS NOT OBVIOUS

**We can't depend on our brain's intuition for an accurate assessment of the current situation, no matter how well we think we already know the focus process.**

**It would be unscientific to start discussing goals and steps to take based on our impressions and intuitions, before objectively analyzing the current operating patterns of the focus process.**

**Practicing the pattern of the process analysis kata helps you develop an open-minded way of looking. It's a procedure to follow in order to see and understand non-obvious characteristics of a work process.**

**This is a step toward increasing our comfort in crossing the threshold of knowledge and iteratively discovering the path to the next target condition through the grey zone.**



# WHY PRACTICE THIS KATA?

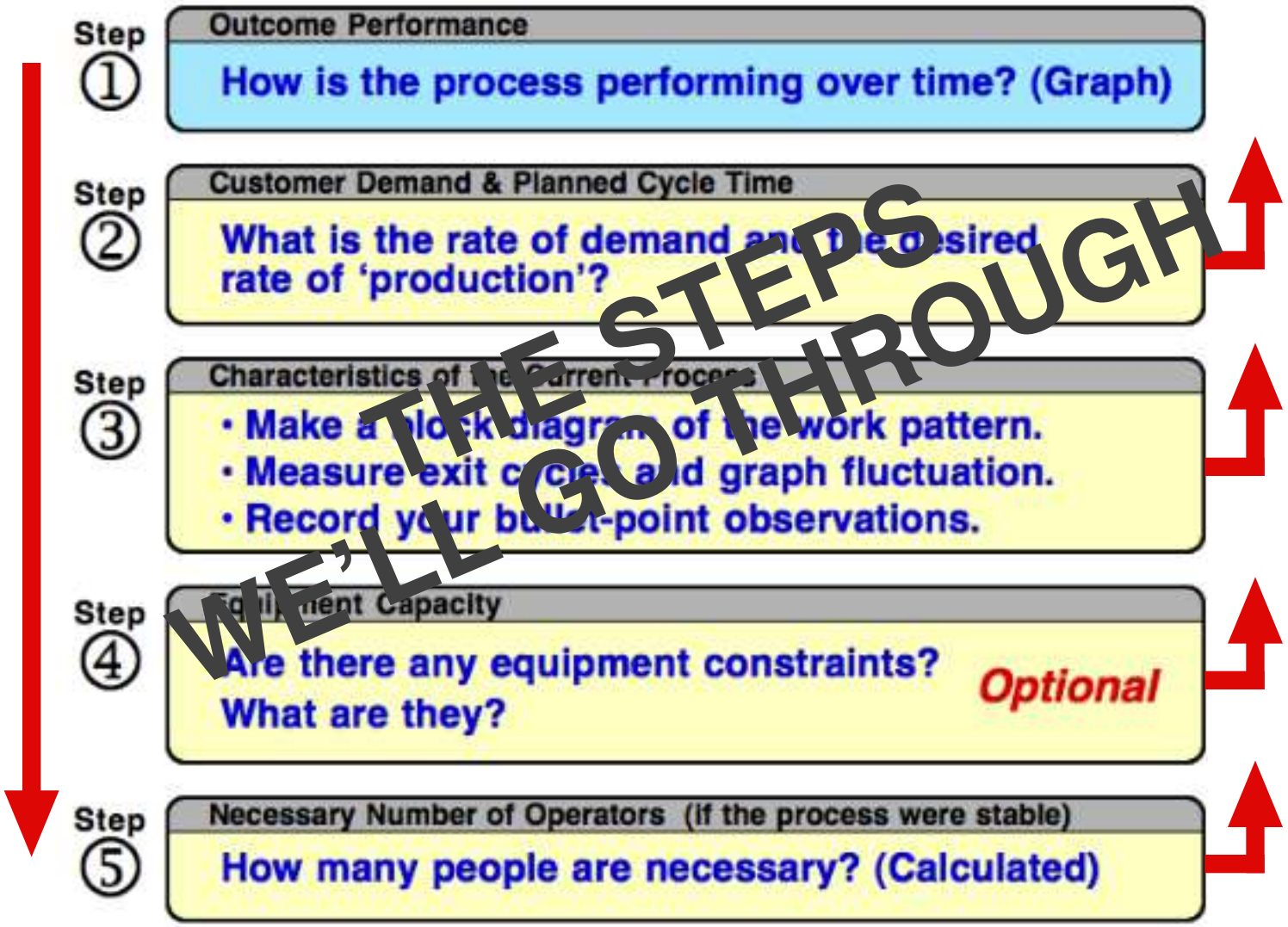
**Being able to grasp the current condition is a foundational skill. This process analysis Kata is a structured way to observe & analyze a current process condition. Benefits of practicing it are:**

- **Prevents skipping Step 2 in the Improvement Kata model, i.e., jumping to conclusions based on an insufficient understanding of the actual current condition.**
- **Makes process analysis teachable and transferrable across your organization.**
- **Communication and coaching are more effective because you have a fundamental & shared way of looking at and talking about work processes.**

**This process-analysis Kata can be adapted to almost any work process. Begin by practicing the steps of process analysis as they are described here. As you become proficient and understand the principles behind this Kata you can evolve it into a process-analysis Kata more specific to your organization and processes... as long as the basic principles remain.**

# THIS PROCESS ANALYSIS IS LINEAR BUT RECURSIVE

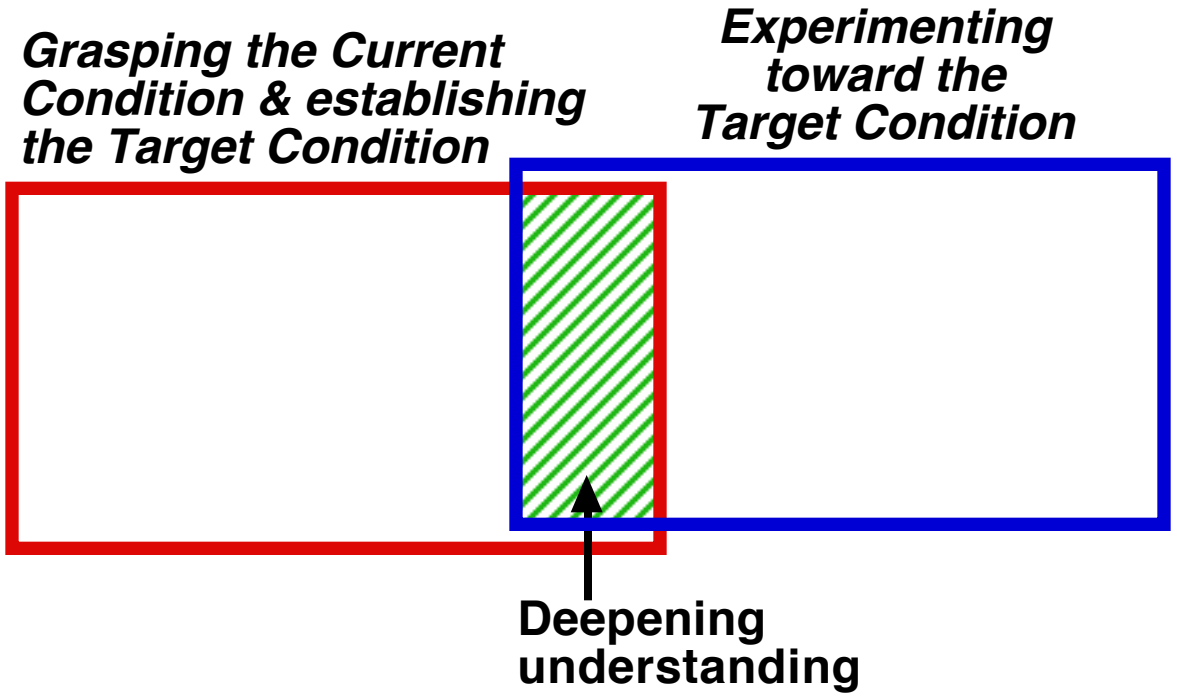
**What you learn in one step of the process analysis may lead you to go back and adjust a prior step. That's normal.**



# YOU DON'T HAVE TO GET A PERFECT UNDERSTANDING OF THE CURRENT CONDITION BEFORE PROCEEDING TO THE NEXT STEP

**Analysis is important, but it's a balance between that and experimenting. You won't be able to understand everything about the focus process before you establish a first Target Condition and get going with experimenting toward that Target Condition.**

**Those experiments will deepen your understanding of the process.**



# SOME PROCESS ANALYSIS TERMINOLOGY

**FACTS** ***Something you observe.***

**Example: The actual occurrence of scrap.**

**DATA** ***Something you measure.***

**Example: The scrap rate.**

## OUTCOME METRIC

**This metric is a 'result' that indicates how a process or system has performed over a past time period. An outcome metric cannot be directly affected because it summarizes the effects of multiple variables.**

**Examples: Lead time, Output / hour, Cost, Labor cost, Productivity.**

## PROCESS METRIC

**This is a metric that occurs at approximately the same time as the conditions it signifies, and can be measured in real time to assess how a process is operating now. A process metric can be directly affected.**

**Example: The time each work cycle takes.**



# GUIDELINES FOR THE COACH: TEACHING PROCESS ANALYSIS

- ❑ **As discussed in the 'Roles & Structure' Chapter, for beginner Learners choose a process that is easy to understand and analyze. The first goal in Step 2 of the IK is to internalize the routine of process analysis, not to tackle the most important process to improve. Once the Learner has developed competency they can apply this process analysis to more difficult processes.**

- ❑ **Have the Learner follow the process analysis steps as closely as possible. Don't let the Learner jump ahead, because you're trying to imprint a pattern. Competent-level learners can vary the process analysis and its sequence according to the situation at hand.**

- ❑ **As the Learner moves through the analysis steps in order s/he will often have to go back to review or recalculate an earlier step based on what they are learning. That's normal. You can't get each step right the first time.**

- ❑ **Break the practicing into 'chunks':**
  - **Have the Learner complete one process analysis step at a time.**
  - **After each step have the Learner summarize on a flipchart & present to you.**
  - **The Learner should present information in the order shown in the steps table on page 11. Each time the Learner presents, have him or her begin the presentation at Step 1.**

- ❑ **The Coach must go along during the process analysis, and should also analyze the process <u>at the same time</u>, not in advance. This way the Coach will be in a good position to evaluate and correct what the beginner Learner is doing.**

- ❑ **At the beginning a process analysis can easily take a couple of days. As one gains experience you can often do it in a few hours. For practice it can be fun to set an increasingly shorter time to do a process analysis. Pick another process and do it again. Can you get to two hours?**



# PROCESS ANALYSIS WITH OFFICE AND SERVICE PROCESSES

## Find the *pattern of working*



**Pattern is a good word to use when you seek to understand *any* process.**

**In office and service processes the work content often varies, takes a long time and/or is even invisible. However, there is a "pattern" in nearly all work that humans do. Even if the work content varies, the people carrying out the task will have certain ways (repetitive patterns) of doing it. That's a key part of what you're trying to see and measure in process analysis.**

**It can takes longer to observe, track and measure the current work pattern in office and service processes. But once you see and can measure the basic pattern of working you'll then be able to define the next target pattern to aim for.**

# WHAT ABOUT HIGHLY AUTOMATED PROCESSES?



**The question of how to handle highly-automated processes comes up regularly. Here's an answer...**

**Start by creating a run chart of output-cycles for the machine, with a *target* line that indicates the output cycles you expect from this automated process's operation.**

**You may think you should then apply the steps of the Improvement Kata directly to the automated machine itself, but even in highly-automated processes, the process is still dependent on things that people do. The focus in applying the steps of the Improvement Kata to an automated process is often *on the human-centered processes around the machine that influence how the machine operates*. These are processes such as:**

- **Machine tending (incl. monitoring, stocking, loading, adjusting, etc.)**
- **Changeovers**
- **Logistics (moving material in and out)**
- **Reacting to problems**
- **Maintenance**

**Apply the steps of the IK to *these* work processes as they become obstacles to the target machine output cycles, with one storyboard per process:**

- **Carefully study the work process to sketch, measure and understand its current pattern of operating using this chapter's process analysis.**
- **Based on that understanding of the current operating pattern, define the next desired operating pattern (target condition) for the process.**
- **Then experiment iteratively to move toward that target condition.**



# Practice Routines

## EQUIPMENT YOU'LL NEED

- Stopwatch that measures in seconds
- Graph paper
- Pencil, eraser & ruler
- Calculator

## COURTESY AT THE PROCESS

- Approach the process via the Manager
- Introduce yourself to the people there
- Explain what you are doing
- Do not interrupt people while they're working
- Explain that you are watching the work, not the person
- Show any notes you've taken
- Say *thank you* before you leave
- Hands out of pockets, because we're all working here

# STEPS OF THE PROCESS ANALYSIS KATA

**Step ①**

**Outcome Performance**

How is the process performing over time? (Graph)

**Step ②**

**Customer Demand & Planned Cycle Time**

What is the rate of demand and the desired rate of 'production'?

**Step ③**

**Characteristics of the Current Process**

- Make a block diagram of the work pattern.
- Measure exit cycles and graph fluctuation.
- Record your bullet-point observations.

**Step ④**

**Equipment Capacity**

Are there any equipment constraints? What are they?

*Optional*

**Step ⑤**

**Necessary Number of Operators (if the process were stable)**

How many people are necessary? (Calculated)

**Outcome metrics**

**Process metrics and characteristics**

# THE BASIC PROCESS ANALYSIS SEQUENCE

## Keep this two-part sequence in mind when you study any work process

**(1) RESULTS**

**The first step is taking a look at the process's outcomes over a period of time. This gives you a sense for what the process is creating and provides a frame for the rest of your process analysis.**

**(2) PATTERN OF WORKING**

**In the rest of the process analysis you turn you attention to understanding the process's characteristics and operating pattern, which are what generate the outcomes.**

**The process's characteristics and operating pattern are what you can actually work on (in later steps of the Improvement Kata pattern) to influence and change the outcomes.**

# The Process Analysis Kata Step-by-Step



# - STEP ONE -

Step ①

**Outcome Performance**

**How is the process performing over time? (Graph)**

**Outcome metrics**

**Customer Demand & Planned Cycle Time**

What is the rate of demand and the desired rate of 'production'?

**Characteristics of the Current Process**

- Make a block diagram of the work pattern.
- Measure exit cycles and graph fluctuation.
- Record your bullet-point observations.

**Equipment Capacity**

Are there any equipment constraints? What are they?

*Optional*

**Necessary Number of Operators (if the process were stable)**

How many people are necessary? (Calculated)

**Process metrics and characteristics**

# PROCESS OUTCOME PERFORMANCE

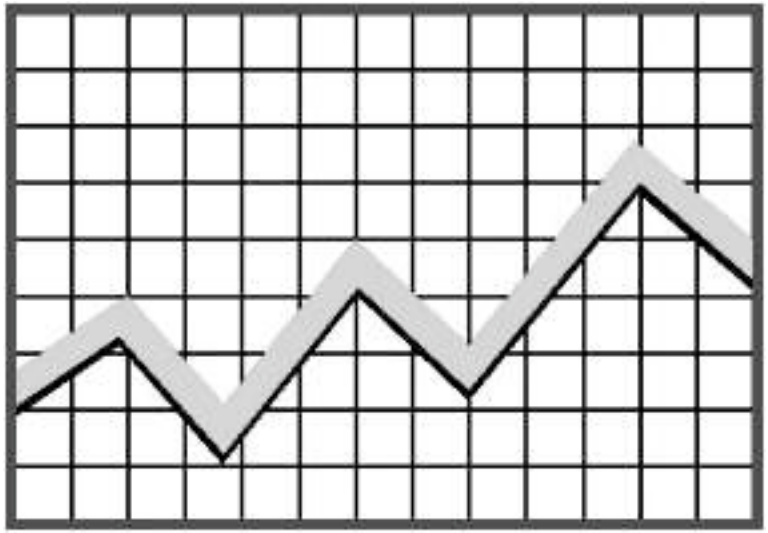
## How is the process performing over time?

**Once the focus process has been selected, begin your process analysis by looking at data on how the process has been delivering/performing over time. Examples of such outcome metrics include quantity, productivity, quality, cost, etc.**

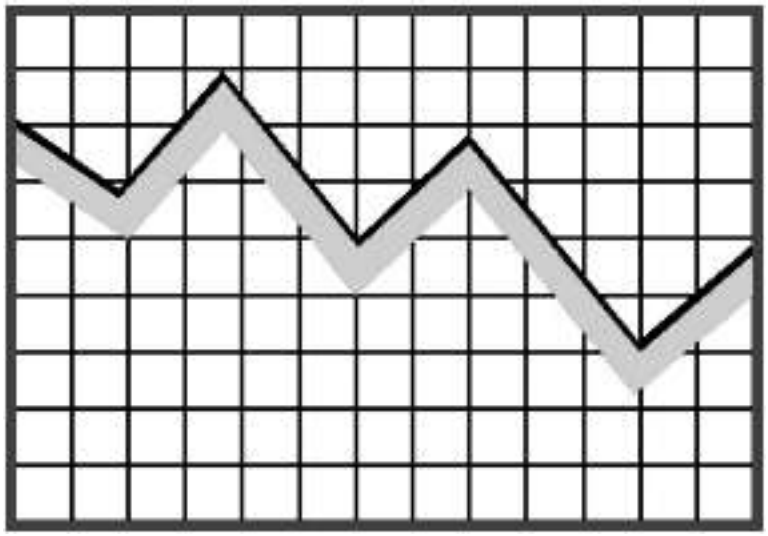
**It may be possible for you to measure and collect this data, and you should set up a system to do so, but you'll probably also be relying on historical data. Keep in mind that you cannot tell how accurate historical data is.**

**Be sure to make a graph of the outcome-metric data that you decide to focus on, so you have a visual representation of the focus process's current performance. For example...**

**Output per Shift**



**Overtime**



# - STEP TWO -

Step ②

**Outcome Performance**

How is the process performing over time? (Graph)

Outcome metrics

**Customer Demand & Planned Cycle Time**

**What is the rate of demand and the desired rate of 'production'?**

**Characteristics of the Current Process**

- Make a block diagram of the work pattern.
- Measure exit cycles and graph fluctuation.
- Record your bullet-point observations.

**Equipment Capacity**

Are there any equipment constraints? What are they?

*Optional*

**Necessary Number of Operators (if the process were stable)**

How many people are necessary? (Calculated)

Process metrics and characteristics

# CUSTOMER DEMAND & PLANNED CYCLE TIME

## What is the rate of demand and the desired rate of 'production'?

**In this step of process analysis you're trying to figure out (A) the rate of customer demand and (B) the target pace at which the focus process should be cycling. This provides a frame for the rest of the process analysis.**

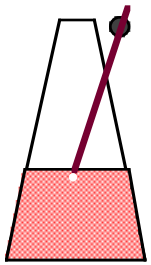
**Key questions are:**

***What is the 'product'?***
***How often does the customer want one?***
***How often do we want to produce one?***

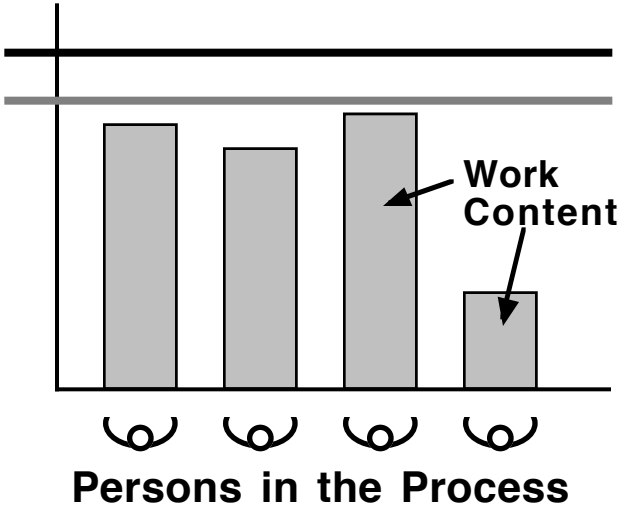




**Remember, you can come back and fine-tune these numbers as you move forward and learn more.**



# Two Numbers from the Manufacturing World: "TAKT TIME" & "PLANNED CYCLE TIME"



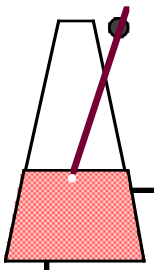

Ⓐ **Takt Time (TT)**

**The actual customer demand rate**

Ⓑ **Planned Cycle Time (Pc/t)**

**The desired production rate**

**Usually faster than TT, as it accommodates changeover time and perhaps some downtime**



# Ⓐ TAKT TIME

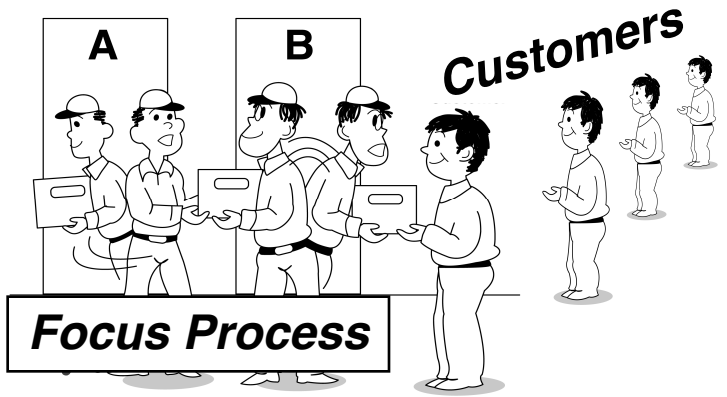
## The rate of customer demand

$$\text{Takt Time} = \frac{\text{your effective operating time / shift or day}}{\text{quantity customer requires per shift or day}}$$

Example

$$\frac{26{,}100 \text{ seconds available time}}{450 \text{ pieces required}} = 58 \text{ seconds Takt Time}$$

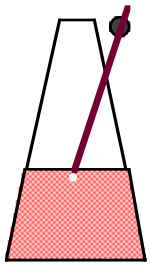
This is the current rate of customer demand



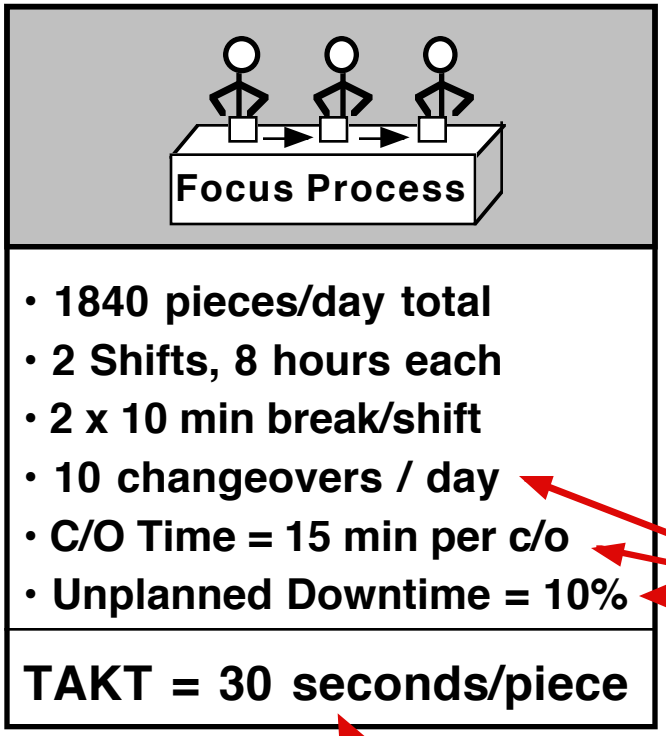

**Notes:**

Customer demand changes! Recalculate Takt Time regularly.

It is not always possible calculate a Takt Time. In such cases simply start with a desired rate of production, called "Planned Cycle Time."



# Example:
# HOW TO CALCULATE TAKT TIME




**1) Determine the Numerator (available time to produce):**

16 hours = 960 minutes / day
960 min - 40 min (breaks) = 920 minutes available / day

**2) Takt Time Calculation:**

$$\frac{\text{920 minutes available}}{\text{1840 pieces required}} = \text{30 seconds per piece}$$

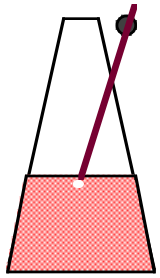
**Do not include your losses in the Takt Time calculation, because you first want a picture of the actual customer demand!**

**This is the current rate of customer demand**



# Ⓑ PLANNED CYCLE TIME

## The actual rate at which you want the focus process to operate



**Once you have calculated Takt Time (demand), now you can subtract changeover time and other losses such as unplanned downtime and scrap & rework rates from the available time in order to arrive at the *planned cycle time* (Pc/t). This is the actual speed at which the process should be running.**

**(A) Changeover time. Make your first Pc/t calculation simply using the number of changeovers currently done per day, and their current times. You can also calculate again with other numbers of changeovers and different changeover times, in order to explore what might be reasonable possibilities.**

**(B) Downtime. There are two kinds of downtime: Short stoppages throughout the day that add up, and rarer but catastrophic failures. In calculating Pc/t we are concerned with the small stoppages. You cannot cover for catastrophe with a faster Pc/t.**

**-15%** **One tactic is to simply set Pc/t at 15% faster than Takt, and strive to fit changeovers and other losses within that 15%. Of course, if your losses greatly exceed 15% then this number will not work at the start.**

**The Planned Cycle Time (Pc/t) or desired rate is a target, and it may seem strange to have a 'target' in mind when you are analyzing the current condition. However, to grasp the current condition of a work process you should understand what is required of the work process.**

# - STEP THREE -

Step ③

**Outcome Performance**

How is the process performing over time? (Graph)

Outcome metrics

**Customer Demand & Planned Cycle Time**

What is the rate of demand and the desired rate of 'production'?

**Characteristics of the Current Process**

- **Make a block diagram of the work pattern.**
- **Measure exit cycles and graph fluctuation.**
- **Record your bullet-point observations.**

**Equipment Capacity**

Are there any equipment constraints? What are they?

*Optional*

**Necessary Number of Operators (if the process were stable)**

How many people are necessary? (Calculated)

Process metrics and characteristics

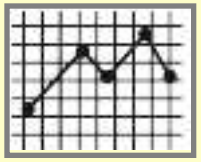
# CHARACTERISTICS OF THE CURRENT PROCESS

## These 3 tasks are the heart of the Process Analysis Kata



### 1) Get to know the work pattern by sketching a block diagram

- Define the start & end points of the process.
- What are batch sizes at the processing steps?
- Where does WIP accumulate?



### 2) Time exit cycles & graph how much the process fluctuates

- Time & run-chart 20-30 exit cycles for each operator.
- Are each operators' work steps the same from cycle to cycle?



### 3) Record your bullet-point observations

- These are not problems, issues or *good* or *bad*.
- Record and describe other characteristics of the current work pattern that you notice.

**Analyzing how the focus process functions helps you understand the current patterns of working. The better you understand how the process operates, the better you can develop an appropriate Target Condition.**

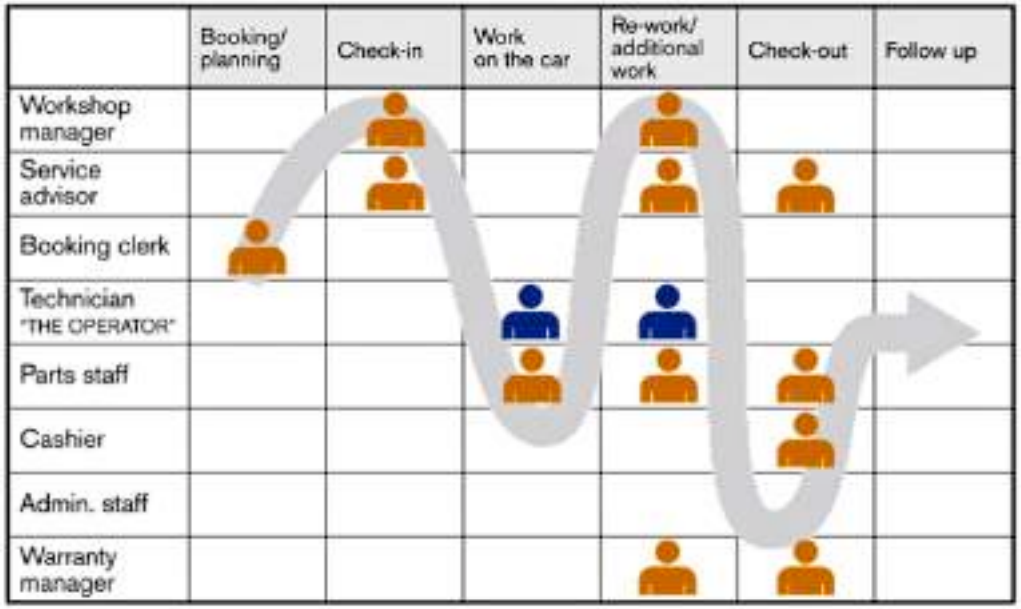
**In this step you may ask others about process details, but do not interview or ask people about process problems or improvement ideas. Study the actual work and learn to see and understand for yourself.**

# 1) GET TO KNOW THE WORK PATTERN BY SKETCHING A BLOCK DIAGRAM

## Visually portray the steps and sequence of how the work is done

--> **For Physical Processes** sketching a "Block Diagram" is highly useful. This tool is described on the next two pages.

--> **For Office/Service Processes** a "Swim-Lane Diagram" (example below) can be useful. There are many resources that describe this tool, so we won't discuss it further here.

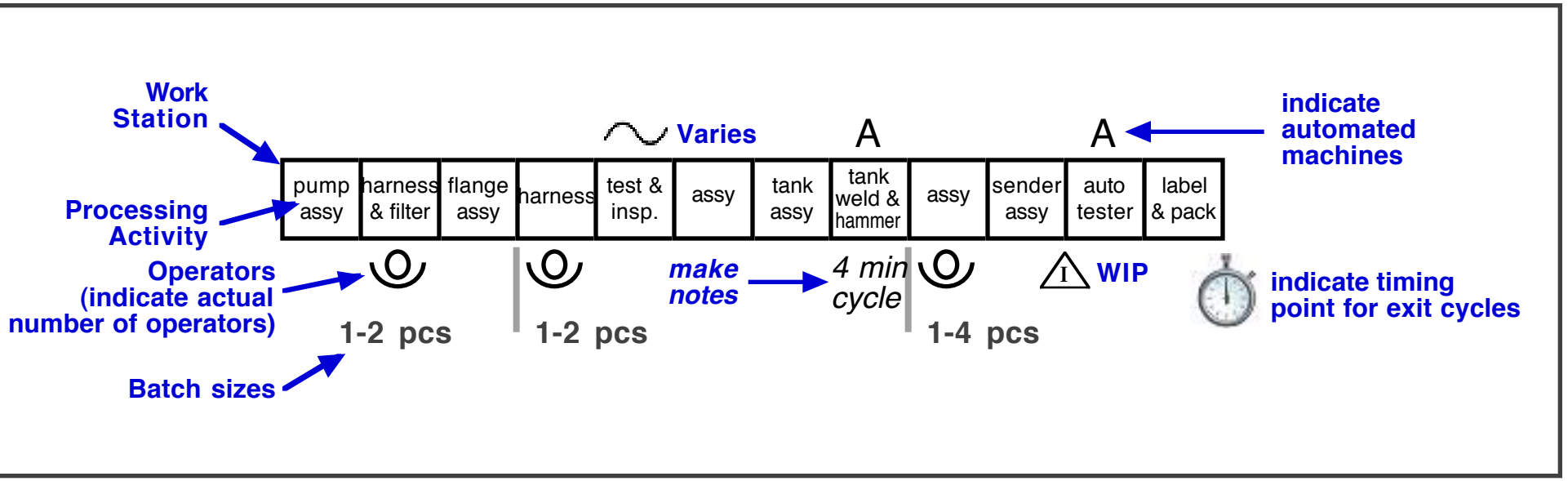


# BLOCK DIAGRAM OF THE CURRENT WORK PATTERN

## A block diagram is just a row of squares to which you add data

**At this stage you're trying to figure out the current work pattern and flow, not so much the physical layout. To do this draw a straight-line sketch of the workstations in the process as squares. The drawing does not resemble the actual layout. It shows the work flow. Each square simply = a workstation, table, fixture or machine.**

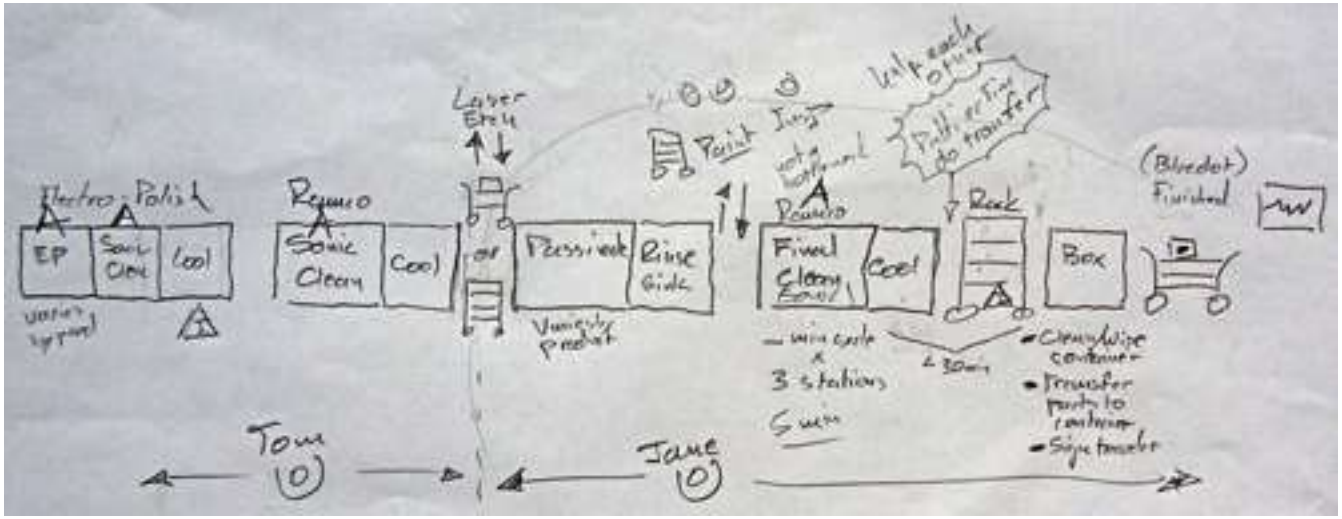
**Do not draw to scale or worry about the actual shape, ie. layout, of the line. Simply make each box the same size.**




**You can keep adding detail to your block diagram as you go through the further steps of process analysis**

# THE BLOCK DIAGRAM GETS MESSY

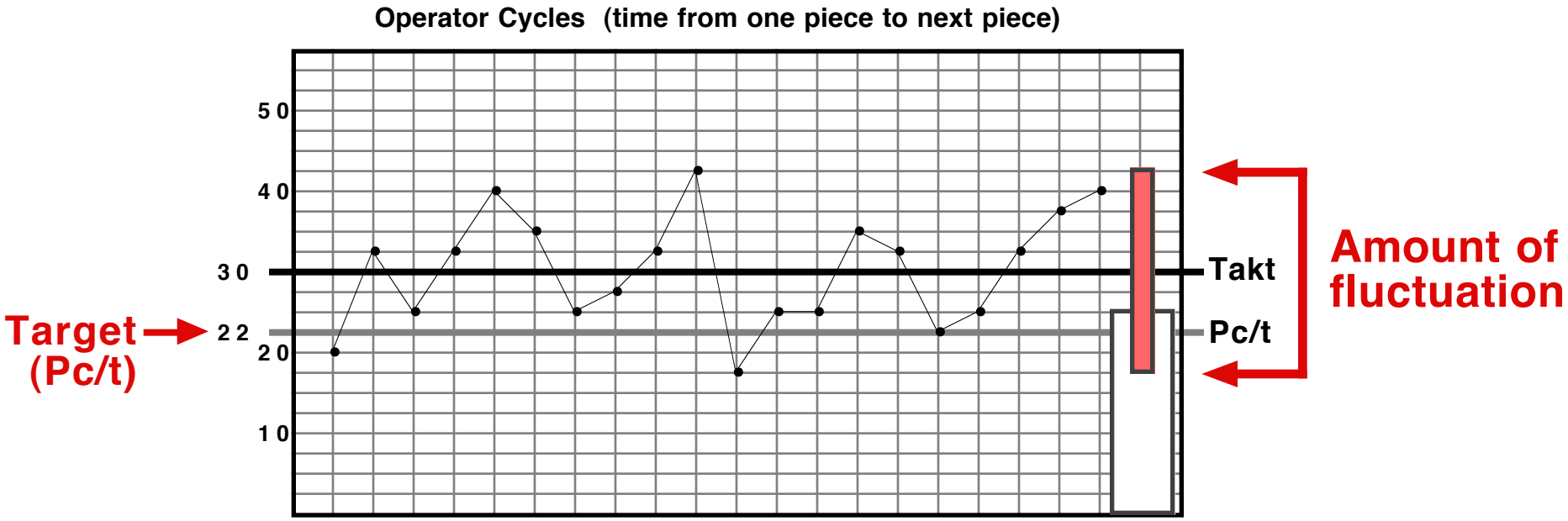
## That's normal




**NOTE that the block diagram is a process-level diagram, *not* a value-stream map**

# 2) MEASURE EXIT CYCLES AND GRAPH HOW MUCH THE PROCESS FLUCTUATES

## You'll be making run charts like this one:

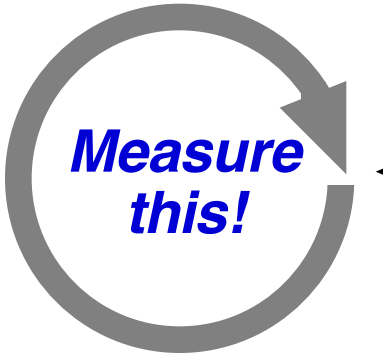



**Understanding the amount of fluctuation in a process is important because it can affect so many other aspects of the process**

# START BY TIMING 20-30 EXIT CYCLES FOR EACH OPERATOR IN THE PROCESS

- **An 'exit cycle' is how often an operator's work cycle occurs.**
- **Select a reference point in the operator's work pattern.**

  **Start your stopwatch when the operator gets to this point and let the stopwatch run until the operator returns to this point, no matter what takes place. You are timing "full cycles."**
- **Record these cycle times on the worksheet provided. Do not skip or discard any cycles.**
- **For each cycle, write down any operator wait time you see, and the reason for it, in the "notes" area of the worksheet. You will use this wait-time information later, in Step 5 of the process analysis.**
- **Remember... you're actually timing *process characteristics*, not the operator.**



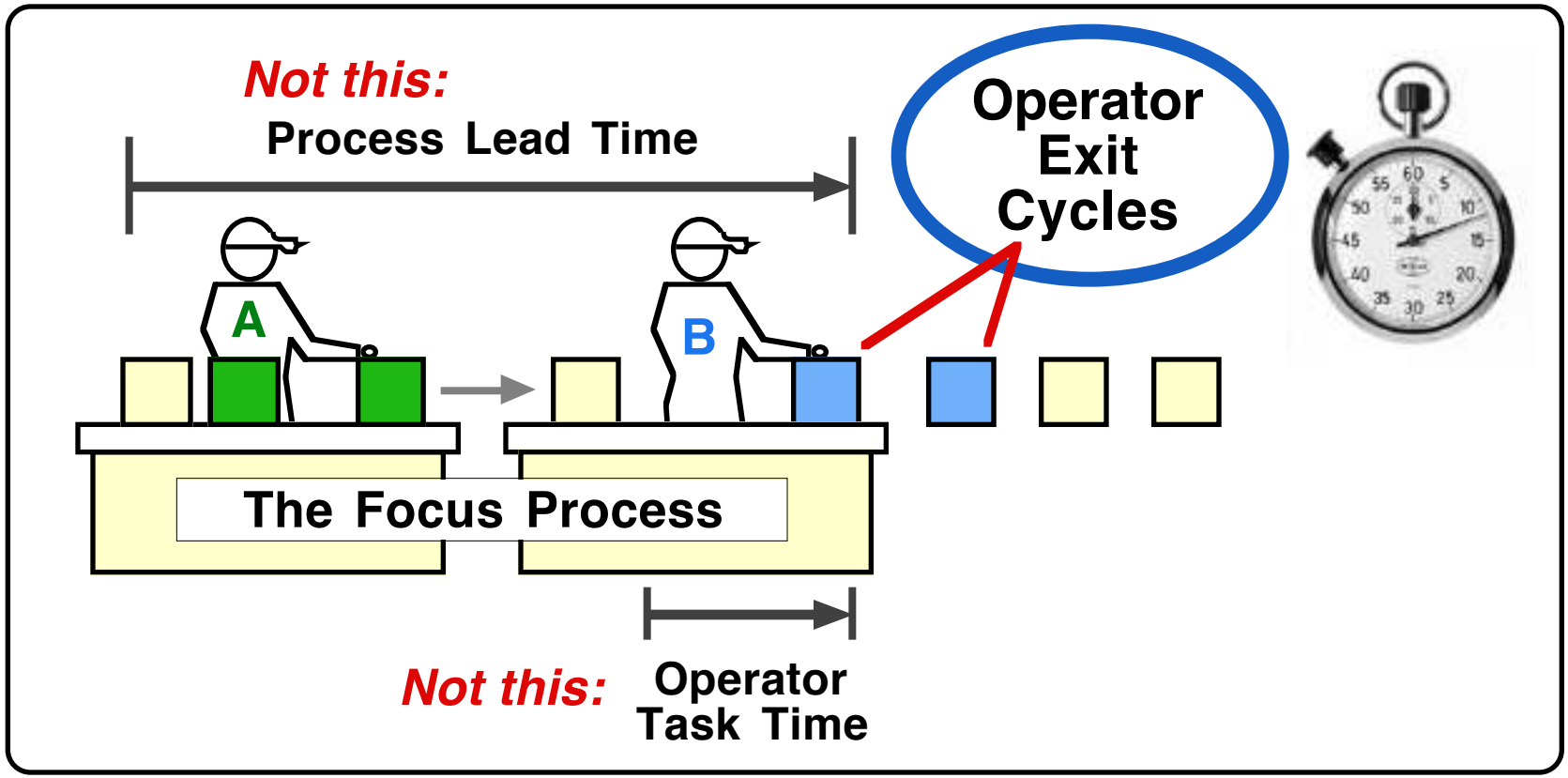

**Operator Exit Cycles**

***Start and stop your stopwatch at the <u>same</u> point, to get the total operator cycle***

# WHAT IS AN "EXIT CYCLE"?

**An Exit Cycle is the actual time between completed units of whatever is the product or service coming off the end of one operator's segment of the process. It's not how long, but *how often*.**

**The exit cycles of the *last operator* in the process often also represent the output fluctuation for the overall process. Check the box on the timing worksheet if you are timing the operator exit cycles that represent overall process output. The run chart from this data will tell you how the overall process is fluctuating.**



# TIMING WORKSHEET

| Process | Metric |
|---|---|
| Date | Operator ☐ |

| Cycle | Observed Times (Data) | Observations about the current operating pattern (Facts) |
|---|---|---|
| 1 | | |
| 2 | | |
| 3 | | |
| 4 | | |
| 5 | | |
| 6 | | |
| 7 | | |
| 8 | | |
| 9 | | |
| 10 | | |
| 11 | | |
| 12 | | |
| 13 | | |
| 14 | | |
| 15 | | |
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| 17 | | |
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| 22 | | |
| 23 | | |
| 24 | | |
| 25 | | |

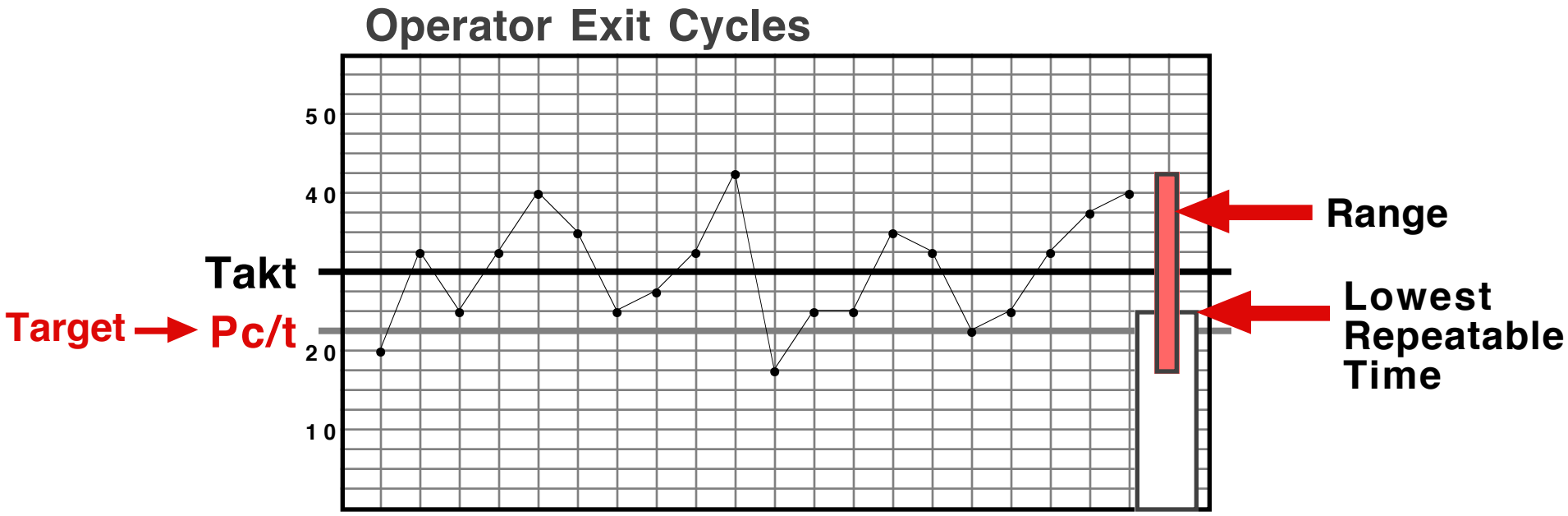
Note wait times here

Check box if this is **process output**

# DRAW A RUN CHART OF THE DATA POINTS, ONE RUN CHART FOR EACH OPERATOR

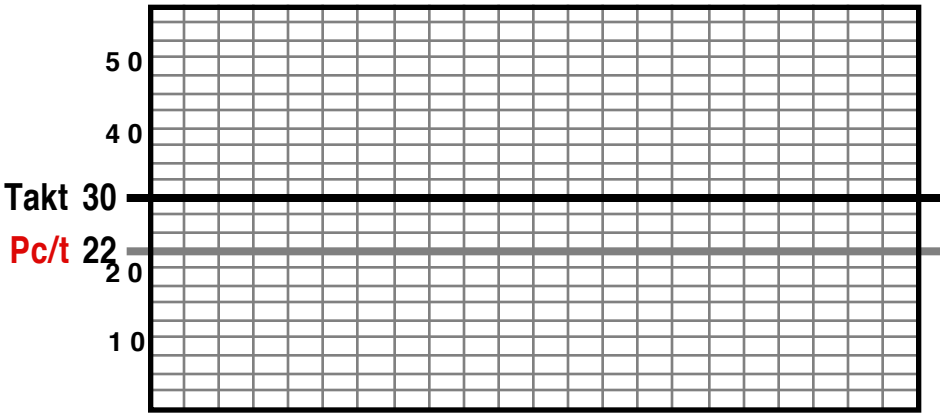
## Run charts help you see and understand process variation

**A run chart is a graph that illustrates process variation over time. Run charts are an excellent way to gather and communicate current-state information.**



# MAKING A RUN CHART - Step by Step

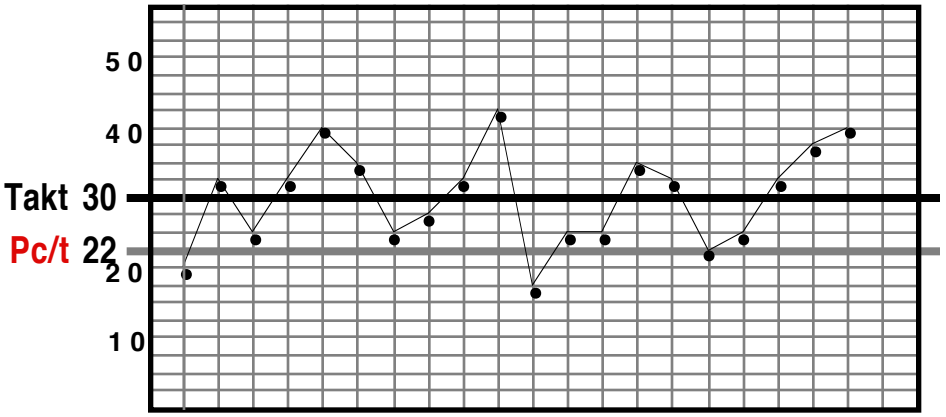
### *Step 1*




1) If you have a Takt Time and/or Planned Cycle Time for the process, draw horizontal lines for them on the chart.

   If you don't have a TT or Pc/t, draw a line for the exit cycle time/rate you'd like to have.

### *Step 2*

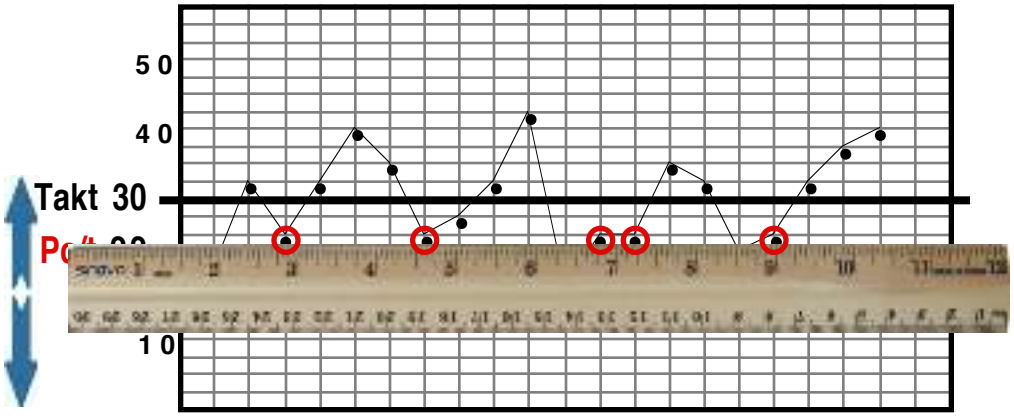



2) Plot & connect the data points

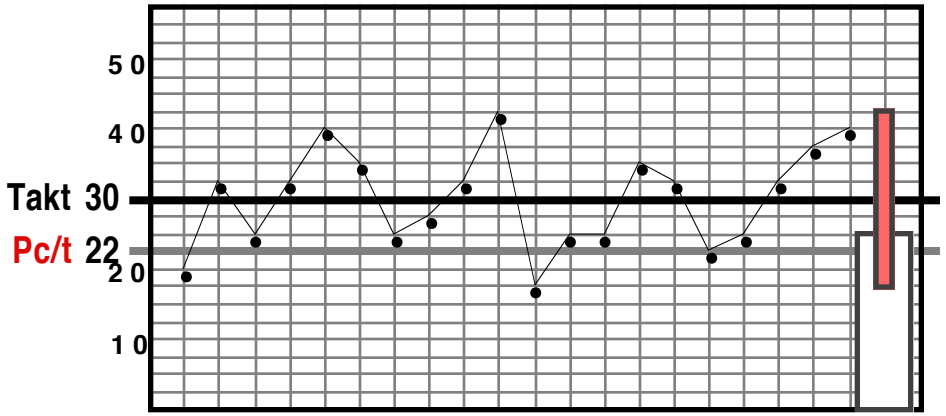
   Note:
   - Do not use averages because they obscure variation
   - Include all data points

# RUN CHART - Step by Step

### *Step 3*




### *Steps 4 & 5*




3) Find the lowest repeatable time by moving a ruler up from the bottom until data points start repeating.

4) Draw a wide bar to show the lowest repeatable time.

   Draw a thin bar to show the range of fluctuation (highest point to lowest point).

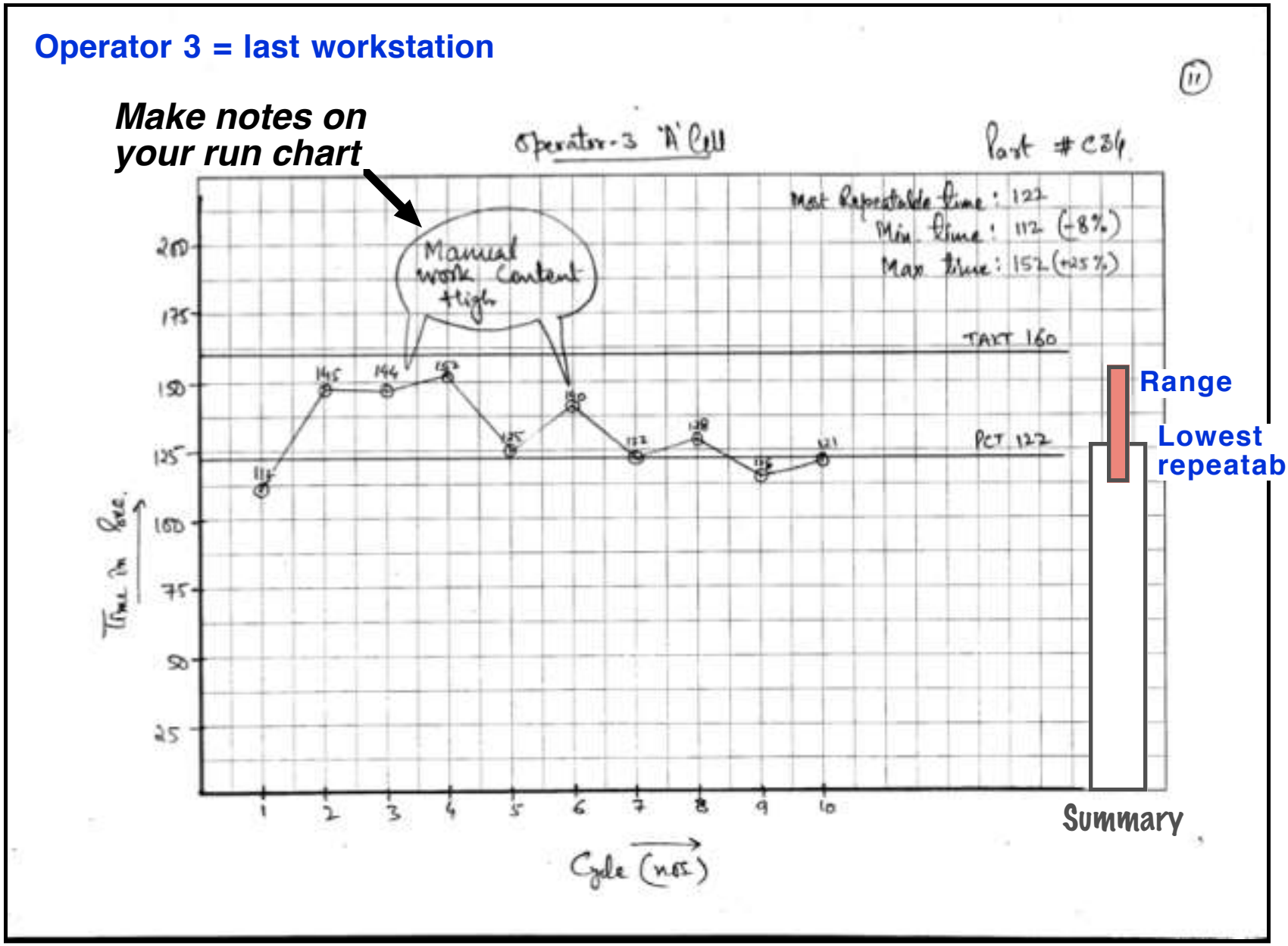
5) Calculate current +/- % variation

   **%+ Var:**
   (Highest point - Pc/t) ÷ Pc/t

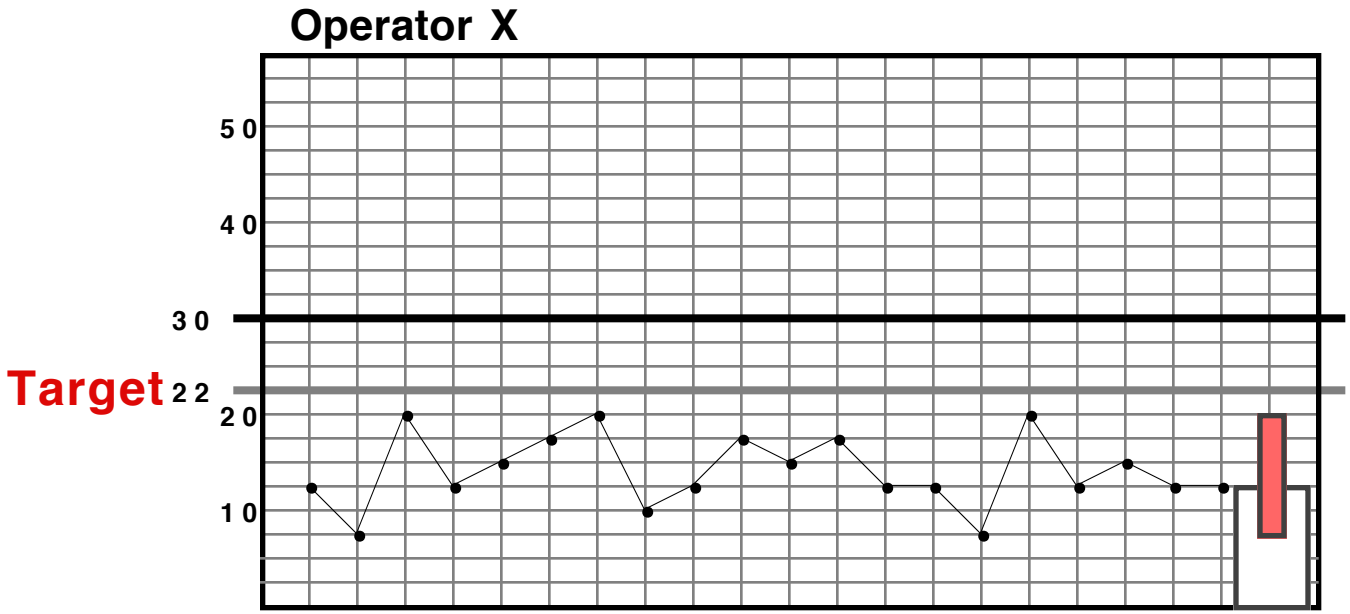
   **%- Var:**
   (Lowest point - Pc/t) ÷ Pc/t

# EXAMPLE RUN CHART OF EXIT CYCLES

**Operator 3 = last workstation**



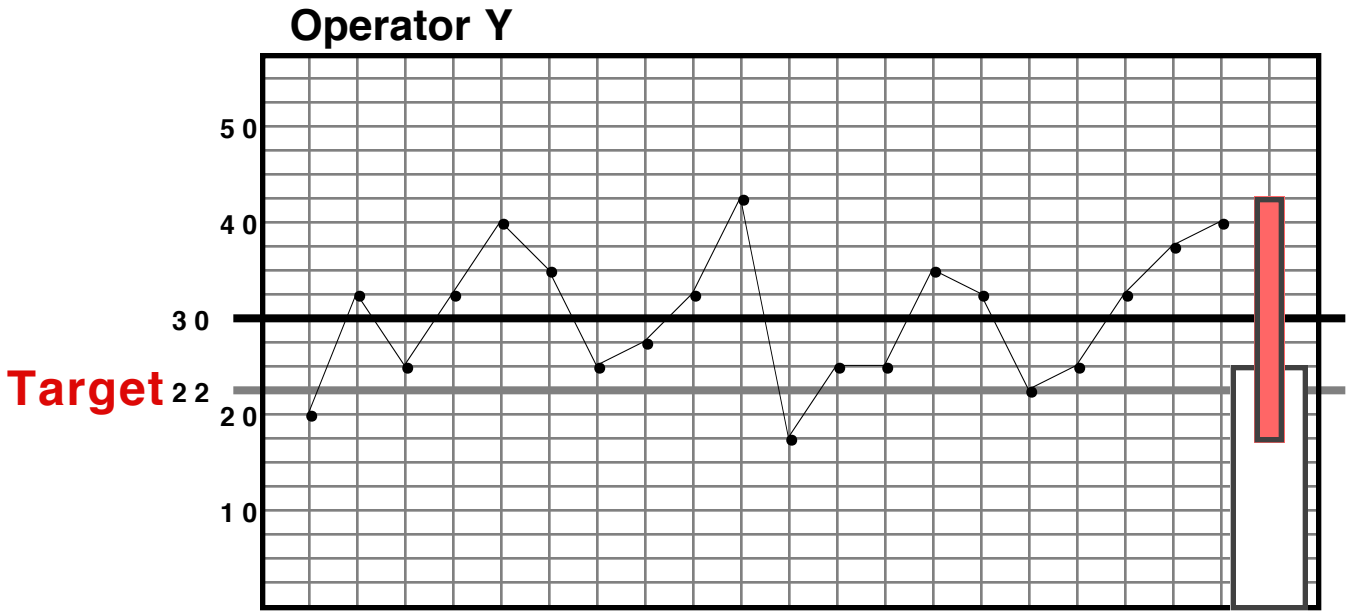
# MORE EXAMPLES




**Range = 8-20 seconds**

**% Variation compared to Pc/t = + 0% / - 63%**

**Lowest repeatable = 13**




**Range = 18-42 seconds**

**% Variation compared to Pc/t = + 91% / - 18%**

**Lowest repeatable = 25**

# 3) RECORD BULLET-POINT OBSERVATIONS

**As you draw your block diagram and time exit cycles, what else do you notice about the pattern of how the process is currently being operated?**

**These are not "issues" or "problems" to address, but simply characteristics of how the focus process currently works. Simply describe what is happening, noting your observations in bullet form.**



# - STEP FOUR -

**Outcome Performance**

How is the process performing over time? (Graph)

Outcome metrics

**Customer Demand & Planned Cycle Time**

What is the rate of demand and the desired rate of 'production'?

**Characteristics of the Current Process**

- Make a block diagram of the work pattern.
- Measure exit cycles and graph fluctuation.
- Record your bullet-point observations.

Process metrics and characteristics

Step ④

**Equipment Capacity**

Are there any equipment constraints? What are they?

*Optional*

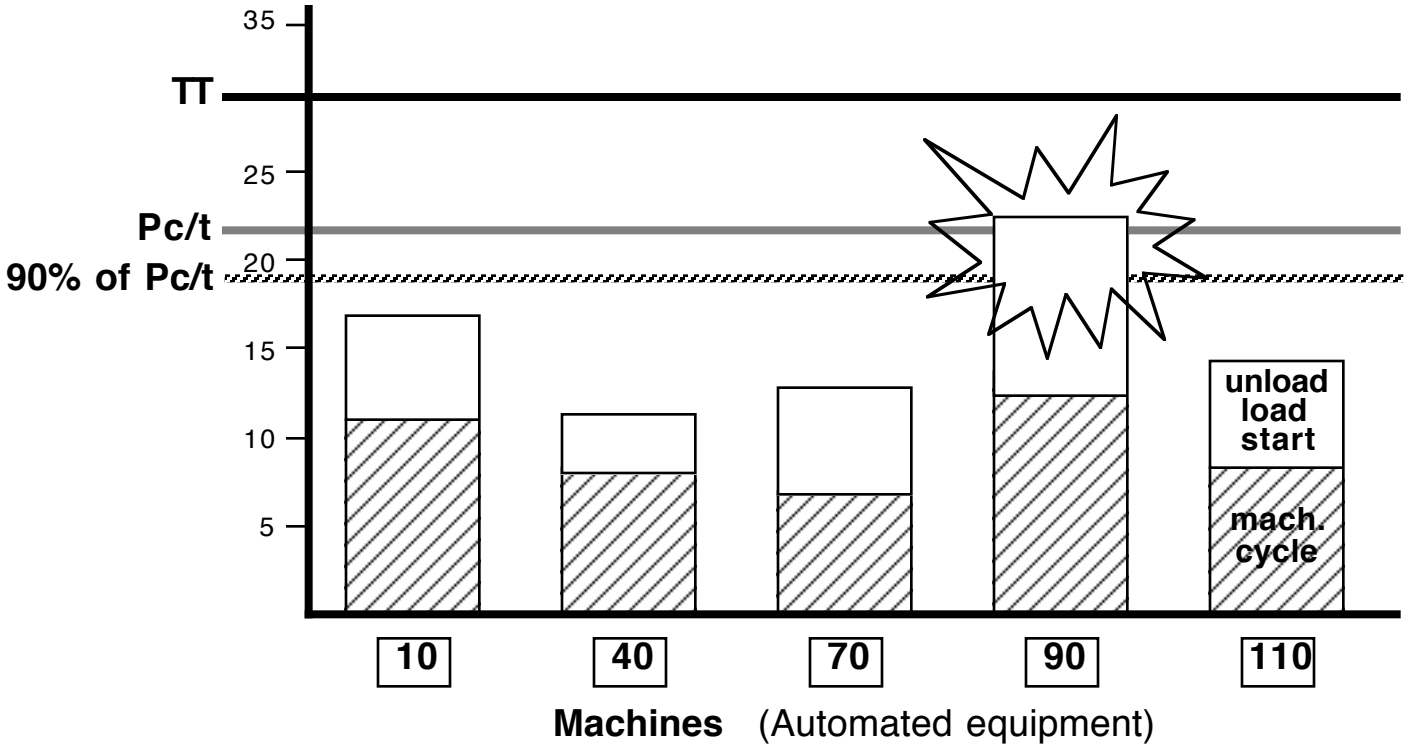
**Necessary Number of Operators (if the process were stable)**

How many people are necessary? (Calculated)

# EQUIPMENT CAPACITY

**This is an important check for those processes that use automated equipment. "Automated Equipment" = machines that can run a cycle without requiring constant human oversight or activity.**

## Machine Capacity Chart




**If this equipment cannot cycle fast enough to meet the planned cycle time then you must address this obstacle!**

# MACHINE CYCLE 90% GUIDELINE

**This guideline applies only to *automated machines* that are able to cycle while the operator does something else. Do not include machines that require operator guidance, such as hand tools, hand welders, arbor presses, etc. Those cycles are naturally included when you measure operator times.**

- **The basic point: It's OK for a machine to finish cycling and wait for the operator to return, but an operator should never have to wait for a machine to finish. A machine only needs to cycle once per takt.**

- **Total machine cycle should be no > 90% of Pc/t in order to make a consistent 1x1 flow possible. (In fully automated lines 95% of Pc/t may be acceptable.) [This guideline applies to machines, not operators.]**

  1. **If machine utilization is too high workstations become close-coupled and small cycle variations telegraph up- and downstream. This causes instability and leads to buffers.**

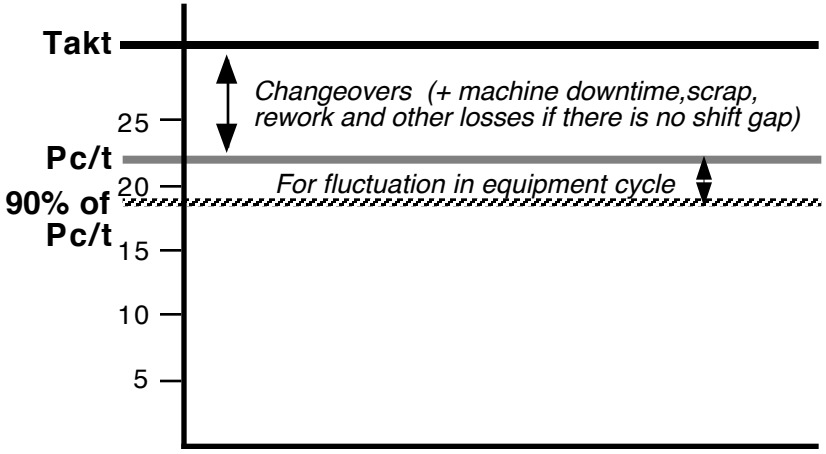
  2. **If machine utilization is too high operators will have to wait for a machine to finish at some workstations, which interrupts their work cycle and causes instability.**

- **The fastest Pc/t a line can run a 1x1 flow (current capacity) is:**

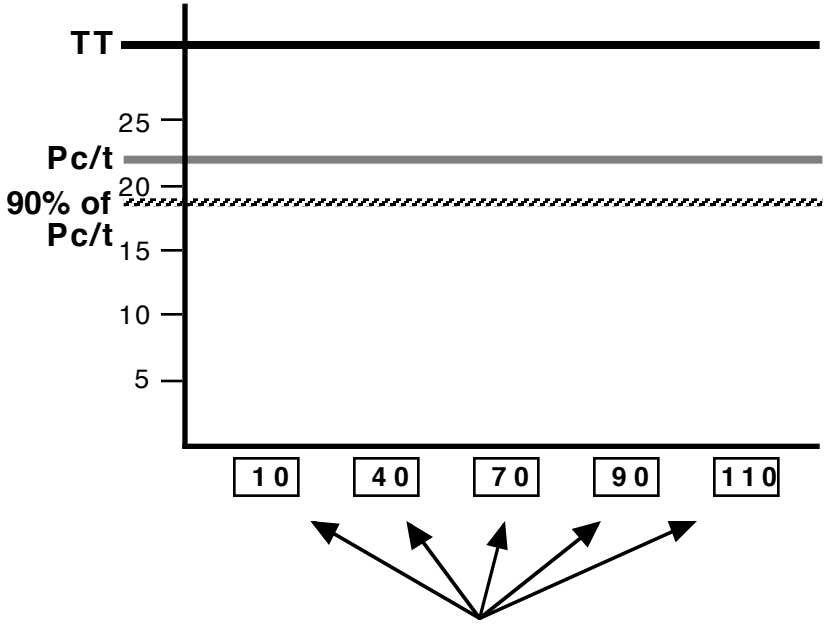
$$\frac{\text{Longest total machine cycle time}}{0.90}$$

# MAKING A MACHINE CAPACITY CHART
## Step by Step

**Accuracy is important in these charts**

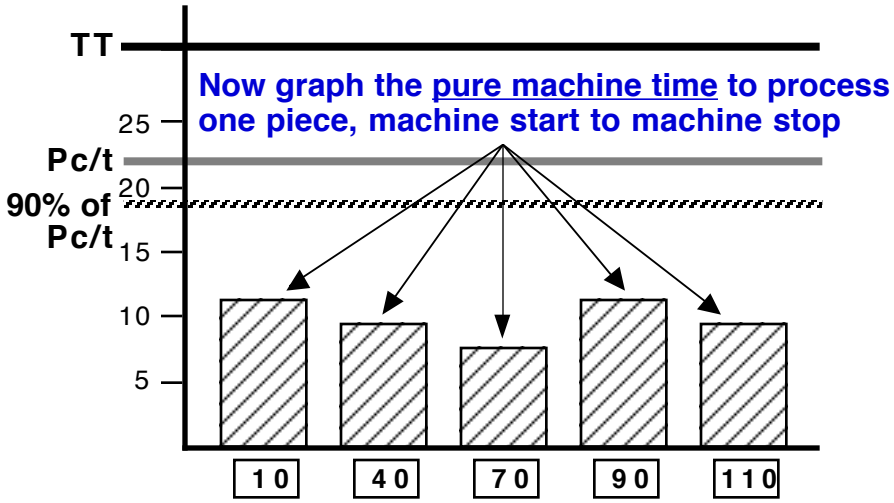


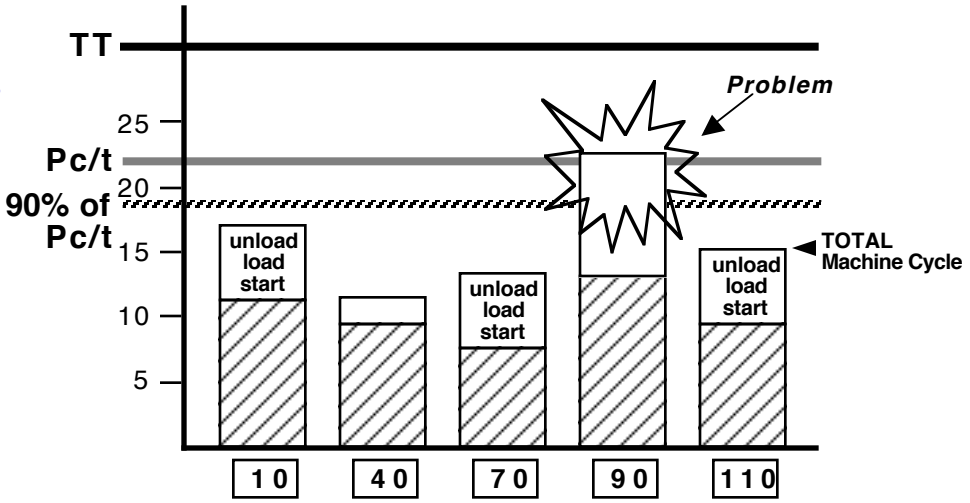

**First draw in lines for the takt time (if calculated), planned cycle time, and 90% of planned cycle time.**




**Next list the automated machines in the process (machines that can cycle without an operator).**

# MACHINE CAPACITY CHART - Step by Step




**Pure machine time is only the time the machine takes from the cycle start to the end of the automatic cycle.**

**Note: You usually only need to measure a few cycles to obtain this number, since machine cycle times are often relatively consistent.**

**Finally, add unload and load times to the machine times. This is the time it takes to unload and load the machine, if the machine has to wait during unloading and loading.**

**The sum of:**

**Pure machine cycle + unload/load time**

**Equals the:**

**Total machine cycle time (TMc/t)**

# WORKSHEET FOR RECORDING MACHINE TIMES

## You don't need to time many cycles when timing machine cycles

| Machine | |
|---|---|
| 1 | |
| 2 | |
| 3 | |
| 4 | |
| 5 | |

| Machine | |
|---|---|
| 1 | |
| 2 | |
| 3 | |
| 4 | |
| 5 | |

| Machine | |
|---|---|
| 1 | |
| 2 | |
| 3 | |
| 4 | |
| 5 | |

| Machine | |
|---|---|
| 1 | |
| 2 | |
| 3 | |
| 4 | |
| 5 | |

# - STEP FIVE -

**Outcome Performance**

How is the process performing over time? (Graph)

Outcome metrics

**Customer Demand & Planned Cycle Time**

What is the rate of demand and the desired rate of 'production'?

**Characteristics of the Current Process**

- Make a block diagram of the work pattern.
- Measure exit cycles and graph fluctuation.
- Record your bullet-point observations.

**Equipment Capacity**

Are there any equipment constraints? What are they?

*Optional*

Process metrics and characteristics

Step ⑤

**Necessary Number of Operators (if the process were stable)**

How many people are necessary? (Calculated)

# NECESSARY NUMBER OF OPERATORS (calculated)
# If the process were stable

**We'll use the sum of the lowest repeatable times taken from the run charts of each operator, minus any wait time in those cycles, to make this calculation. If you observed wait time in an operator's lowest-repeatable cycles, you'll subtract that wait time from the lowest repeatable time in order to get closer to the actual task time.**

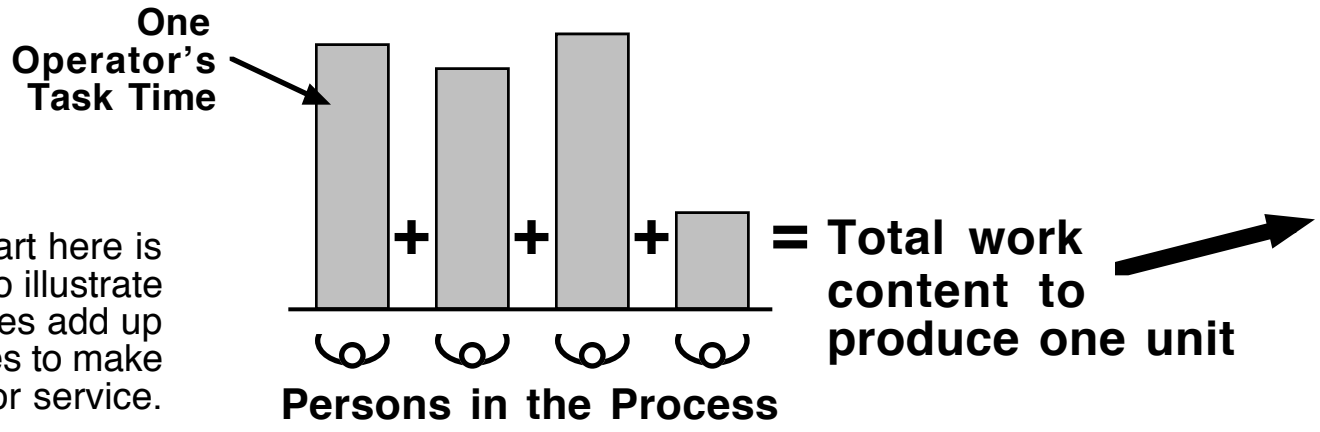
**Notes:**

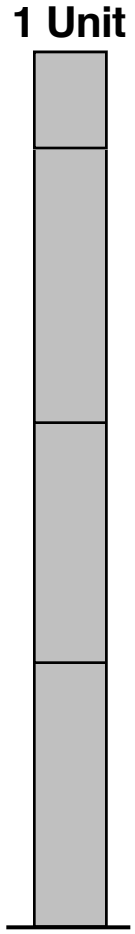
- **This is not about reducing the number of operators, but determining the correct number of operators... if the process were stable and there is no out-of-cycle work.**
- **Note that this calculation is only an estimate for getting started.**
- **The calculated number of operators would only be sufficient if you are able to achieve a limited range of fluctuation in the process. The more fluctuation there is in a process, the more extra people will be needed.**

# LOWEST REPEATABLE TIME AS AN ESTIMATE OF TASK TIME

**You can use each operator's Lowest Repeatable Time as an approximation of the manual work-time content for a task, as long as you now subtract any significant operator wait time that occurred during <u>those</u> lowest-repeatable cycles. An example is waiting for a previous operator to finish. If Operator 2 had to wait for Operator 1, this wait time is not part of the actual work content required to complete a task in that cycle.**

**You can use the sum of the Lowest Repeatable Time for each operator as an estimate the current <u>total</u> work content to complete one unit of the product or service, as shown below.**




The work balance chart here is being used simply to illustrate how individual task times add up to the total time it takes to make one unit of product or service.



# THE NUMBER-OF-PEOPLE CALCULATION

**Operator time and machine time are two separate things. We're looking only at operator time here.**

| Operator | Lowest repeatable operator cycle time, minus any wait time | Notes |
|---|---|---|
| 1 | 15 seconds | |
| 2 | 13 seconds | |
| 3 | 16 seconds | |
| 4 | 25 seconds | |
| | Σ = 69 sec | |

Estimated total in-cycle operator work time to process one piece

$$\text{Necessary number of people} = \frac{\text{Total work content to process 1 unit}}{\text{Planned cycle time or target rate}}$$

$$\frac{\text{69 sec. total cycle time}}{\text{22 sec. Pc/t}} = \text{3.2 operators}$$



# WHY IS IT OK TO USE LOWEST REPEATABLE TIME?

**Because these times & the number-of-operators calculation are just a starting point for PDCA!**

**This approach is acceptable if you plan to work with rapid PDCA cycles (as with the improvement kata) and will do so daily. PDCA starts early.**

**Then the initial times don't need to be exact, because you will notice analysis errors and other problems along the way, and adjust as you move forward.**

**You're not setting a standard at this point. You're getting current-condition information & data to establish your first target condition. As you move toward that first target condition:**

- **You'll learn more about the process, which can be incorporated into the next target condition**
- **You can get more detailed times for the work elements if necessary**

# A FEW SUMMARY POINTS ABOUT TIMING

## In Step 3 of Process Analysis:

- **You take the unadultered exit cycles as an indication of fluctuation in each operator's work. For the last operator in the process this is often an indication of output fluctuation for the process as a whole.**

- **As you time the exit cycles you make a note of any significant wait times, but you don't do anything with that information at that point.**

## In Step 5 of Process Analysis:

- **Here you estimate the number of people needed in the process by summing the lowest repeatable time for each operator. If there is significant wait time included in those lowest-repeatable times then you would subtract that wait time at this point, because it is not task time.**

# SUMMARIZING THE INITIAL CURRENT CONDITION

**Outcome Performance**

How is the process performin

**Customer Demand & Planned Cycle Ti**

What is the rate of demand
rate of 'production'?

**Characteristics of the Current Proce**

- Make a block diagram of
- Measure exit cycles and
- Record your bullet-point

**Equipment Capacity**

Are there any equipmen
What are they?

**Necessary Number of Operator**

How many people are

**The Learner should use these headings and subheadings in compiling and presenting his or her analysis summary.**

**This reinforces the analysis pattern and makes it easier for a coach to go from Learner to Learner.**

**On the next pages are three different versions of a Current Condition Summary Form, for use with many different kinds of work processes.**

**This form plus any additional pages of data, such as the block diagram, run charts and machine capacity chart, should be posted in the "Current Condition" field of the Learner's storyboard.**

***Once you've defined the next Target Condition, this form will get cut in half.***



| CURRENT CONDITION / TARGET CONDITION | | Challenge: | |
|---|---|---|---|
| Learner: Coach: Process: | | Outcome Metric | Process Metric |
| **Categories** | **Current Condition** Date | **Target Condition** | Achieve-By Date |
| **Outcome Performance** *(Results)* | *show run chart* | | |
| **Process Characteristics and Operating Pattern** *(Pattern of Working)* | *show block diagram or swim-lane diagram* | | |

# CURRENT CONDITION / TARGET CONDITION

**Challenge:**

**Learner:** **Coach:** **Process:**

| **Outcome Metric** | **Process Metric** |
|---|---|

| | Categories | Current Condition (Date) | Target Condition (Achieve-By Date) |
|---|---|---|---|
| 1 | Outcome Performance *(Results)* | *show run chart* | |
| 2 | Rate of Demand<br>Rate of Production | | |
| 3 | Operating Pattern | *show block diagram*<br>*show all run charts* | *show block diagram* |
| 4 | Capacity | *show chart* | *show chart* |
| 5 | Number of People Required | | |

# CURRENT CONDITION / TARGET CONDITION

**Challenge:**

**Learner:** **Coach:** **Process:**

| Outcome Metric | Process Metric |
|---|---|
| | |

| | Categories | Current Condition (Date) | Target Condition (Achieve-By Date) |
|---|---|---|---|
| 1 Outcome Performance | Actual output / shift | *show run chart* | |
| | Overtime? | | |
| 2 Rate of Demand & Rate of Production | Takt time | | |
| | Pc/t | | |
| | # of Shifts | | |
| 3 Operating Pattern | Process steps and sequence | *show block diagram* | *show block diagram* |
| | Batch size | | |
| | Where WIP Accumulates | | |
| | Number of operators | | |
| | % exit cycle fluctuation (at end of line) | *+ show all run charts* | |
| | Other attributes of the process | | |
| 4 Capacity | Capacity chart | *show chart* | *show chart* |
| 5 People Required | Calculated number of operators | | |

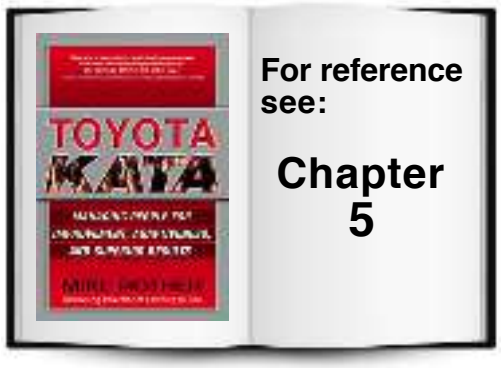
# Chapter 6

## The Improvement Kata - Planning Phase

## Step 3: ESTABLISH THE NEXT TARGET CONDITION

**Practice this Routine**




**For reference see:**

**Chapter 5**

# ORIENTATION

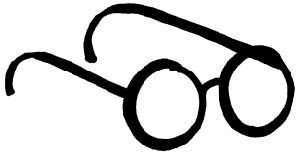



LEARNER

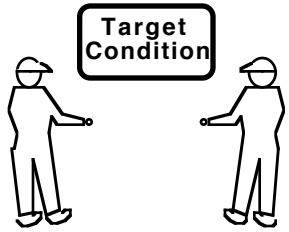
**Understand the Direction**




**Grasp the Current Condition**

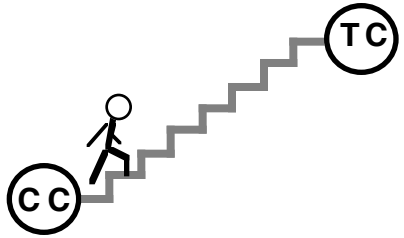


**Establish the Next Target Condition**




**Describing what circumstances you will strive for next**

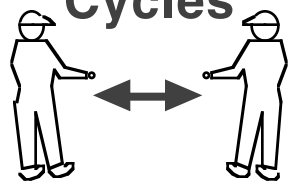
**Iterate Toward the Target Condition**




COACH

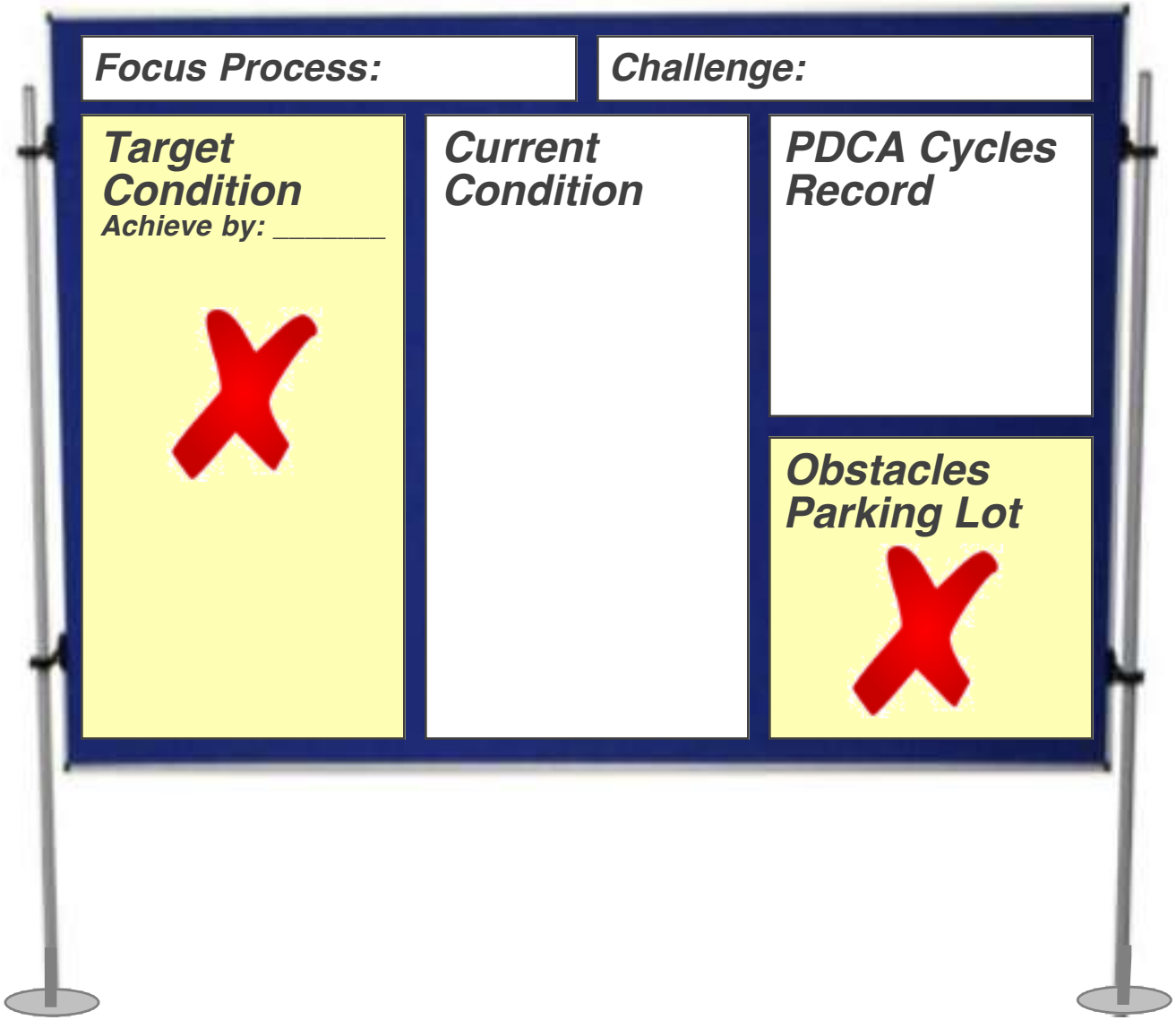
**'Planning' Coaching Cycles**

**'Executing' Coaching Cycles**



# LEARNER'S STORYBOARD

**Learner and Coach are now concentrating on these two fields** ✗

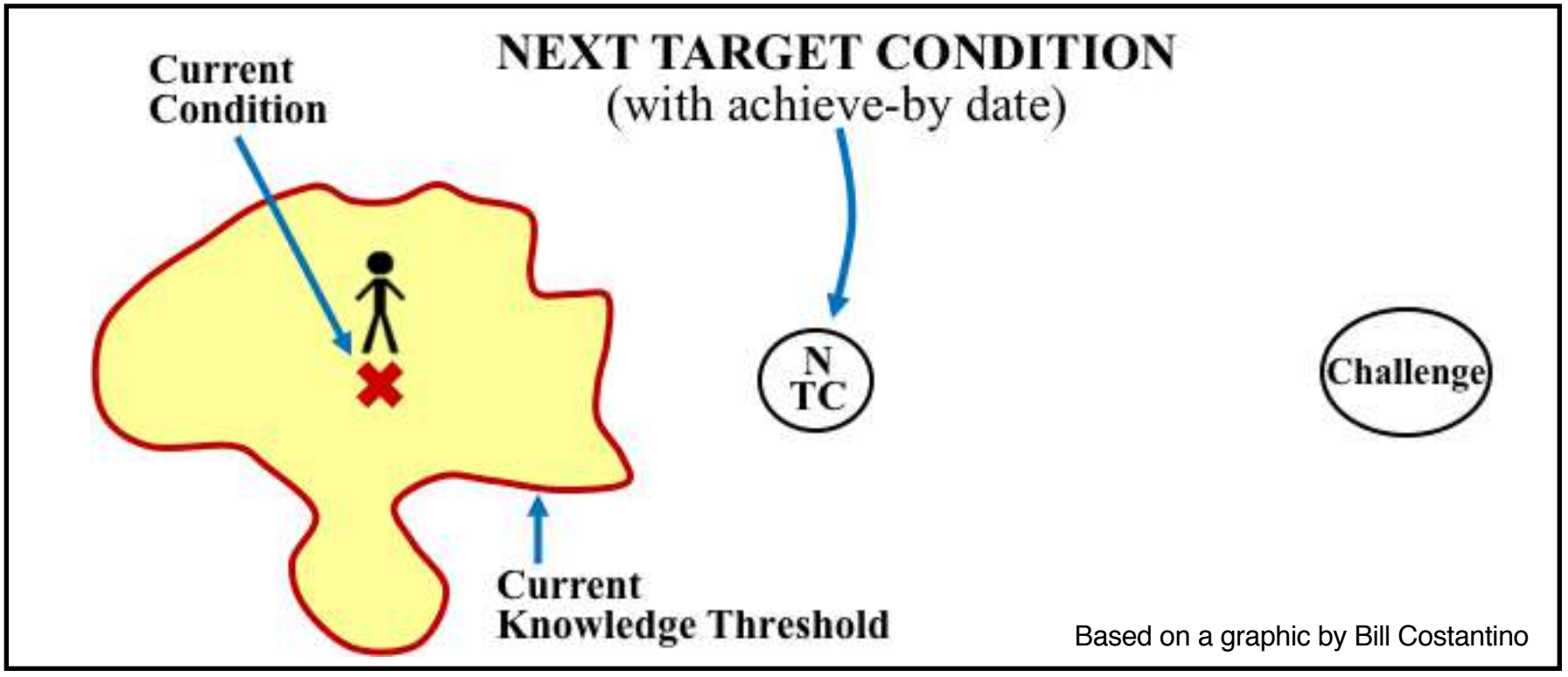



Concept
Overview

# WHAT IS A *TARGET CONDITION*?

## A Target Condition is a common picture of success

- A **Target Condition** is an interim goal on the way to the Challenge, described in greater detail than the Challenge. It usually takes several successive target conditions to reach a Challenge, so it is sometimes called the *"Next Target Condition."*
- A **Target Condition** only describes where you want to be next, <u>not how to get there</u>. That will be figured out through experimenting in the next step of the IK pattern.
- A **Target Condition** describes a desired future set of circumstances that lie beyond our current knowledge threshold. We don't yet know how we will get there.
- A **Target Condition** has a specified achieve-by date, which is often between 1 week and 3 months out. Longer than that is often ineffective and should generally be broken down to smaller Target-Condition increments.



# A TARGET CONDITION IS AN ESSENTIAL ELEMENT FOR ACTIVATING & MOBILIZING HUMAN INGENUITY



**A Target Condition is a key element in the creative process.**

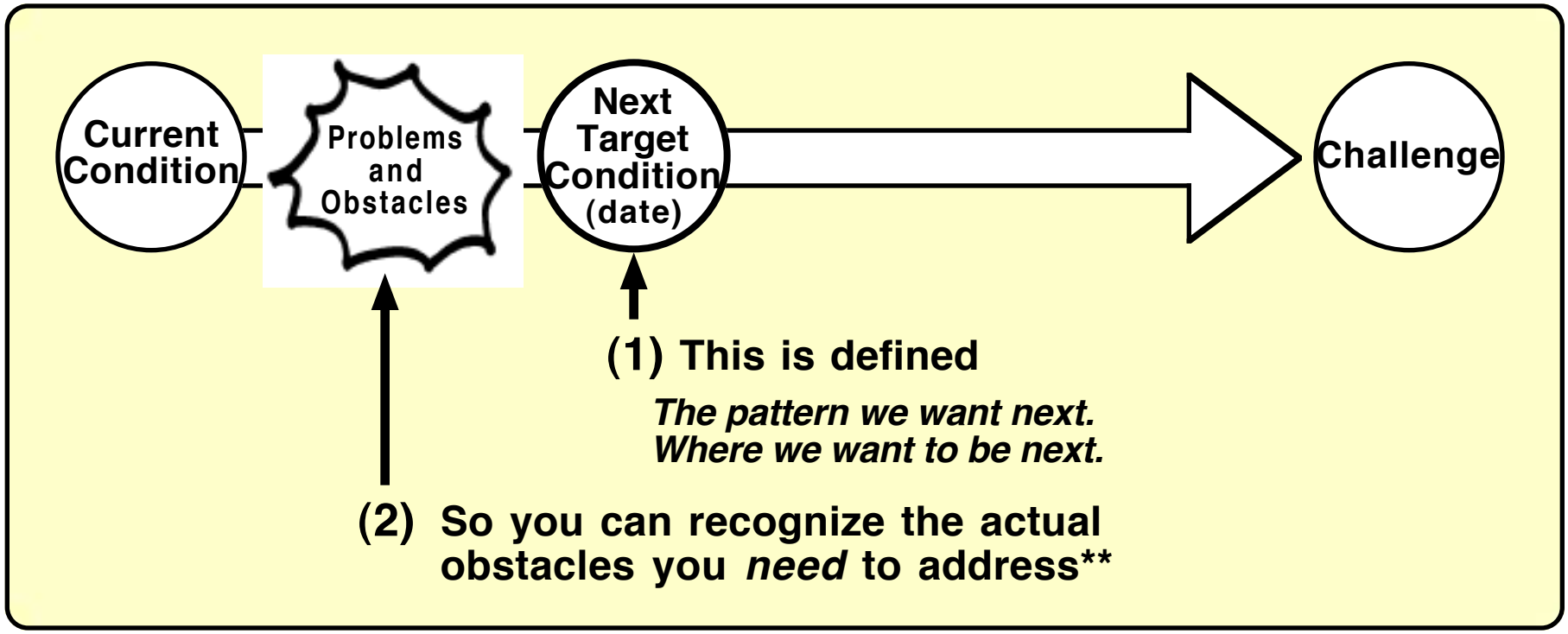
**A Target Condition is a forward-looking new goal (a positive future projection) rather than a backward reflection of problems. It's about moving toward something as a path to achievement.**

**A Target Condition prompts us to consider a different set of circumstances from those that currently exist.**

# A TARGET CONDITION IS A SET OF CONSTRAINTS THAT HELP YOU WORK SCIENTIFICALLY

## It's like a "Research Topic" in traditional science

**By defining a Target Condition and striving to achieve it, you learn what is preventing you. That shows you specific things to focus on.**



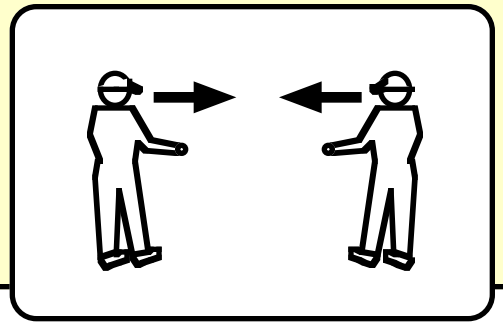

** The Improvement Kata involves going after only the *right* issues one at a time, i.e., those obstacles you actually find are preventing you from getting to the specific Target Condition you're striving to reach. There will be many things you *don't* work on.

# A TARGET CONDITION ENABLES TEAMWORK

## Mutual effort toward a mutual end

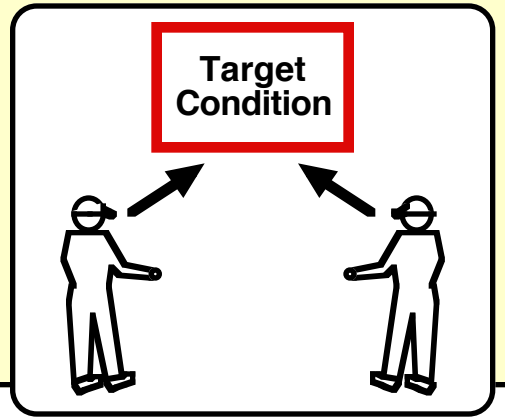
### *WITHOUT* A TARGET CONDITION

- Disorganized discussion about *solutions*.
- Exchange of opinions. Debate about my idea versus your idea. *"Who's right?"*
- Prioritization by dominant individuals.
- No experimentation.



### *WITH* A TARGET CONDITION

- Structured discussion about next experiment toward a common picture of success.
- *"What do we need to work on next to reach our objective?"*
- Moving forward scientifically.




**Once you've experienced the role of a Target Condition you'll find it difficult to work without one!**

# A TARGET CONDITION HELPS YOU BEAT ENTROPY

## Without something to strive for, any process will naturally tend to degrade




**It's estimated that 80-95% of the variation in a work process is random, or *common cause* variation. These are systemic problems. Although problems are occurring, the process is actually statistically stable. These problems are normal in the current system.**

**In the case of systemic problems, examining each failure and searching for the root cause in order to solve that problem ("troubleshooting") is not a good approach for improving.**

**In order to take action against the results of common cause variation, the system itself must be changed. A systemic improvement is needed.**

**That's what a Target Condition represents.**

# THINK OF A TARGET CONDITION AS SOMETHING NEW YOU ARE AIMING FOR... SCIENTIFICALLY

- ***What was our last step toward the Target Condition?***
- ***What did we expect to happen?***
- ***What actually happened & what did we learn?***
- ***What is our next step?***

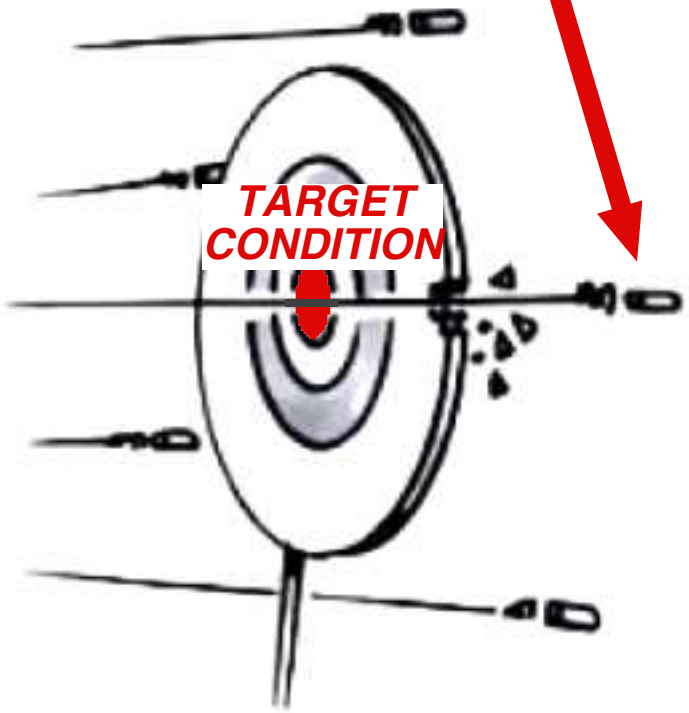
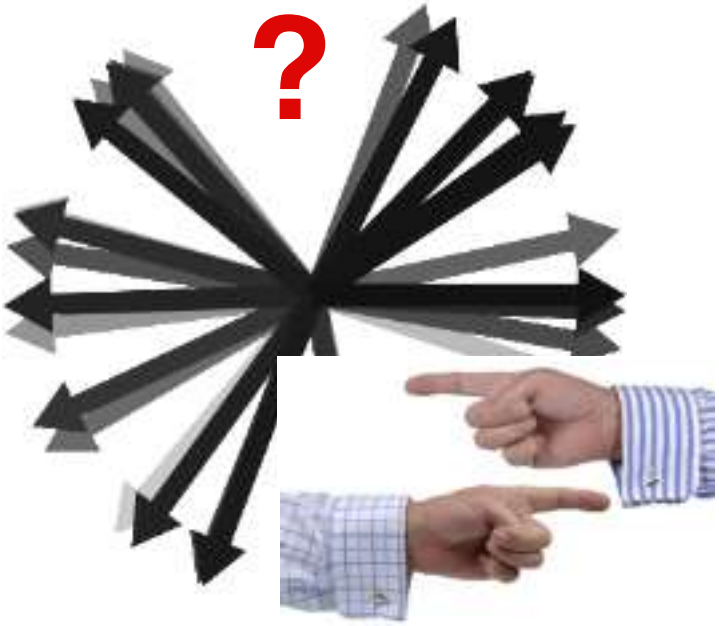



Illustration from *The Team Handbook*, page 3-33

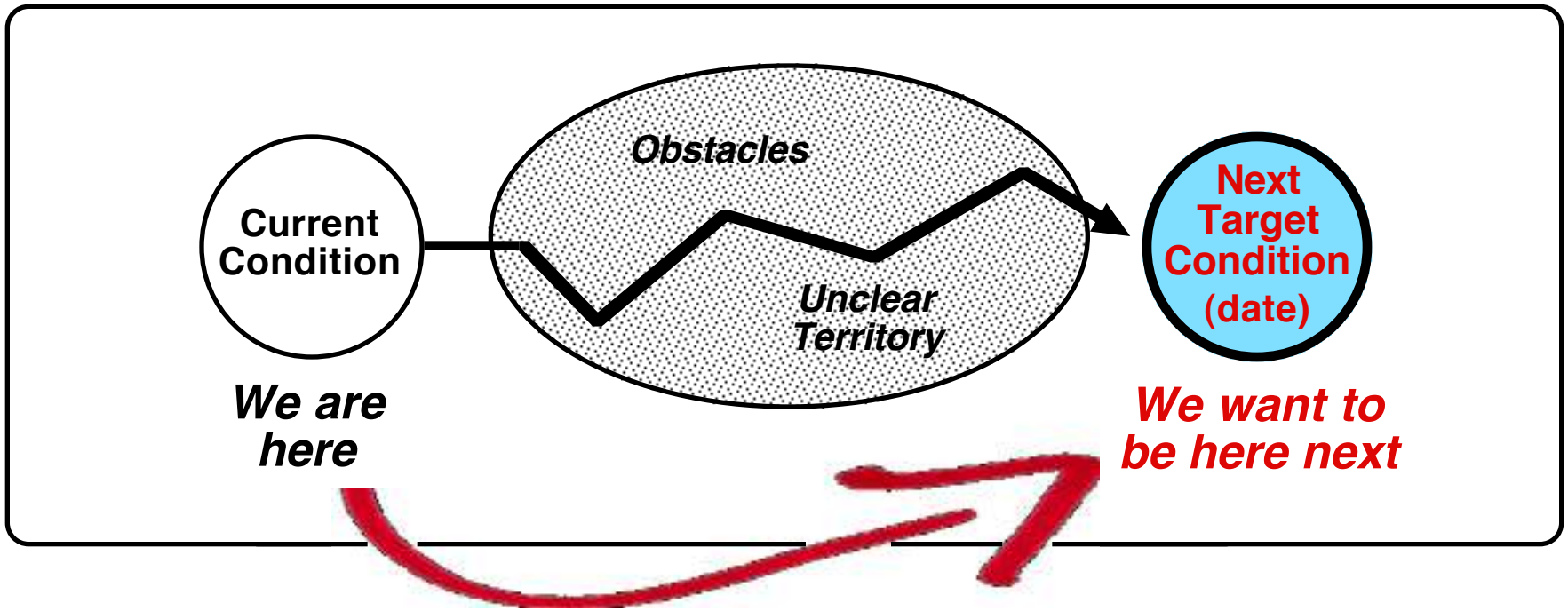
**Operating without a Target Condition leads to acting based on opinions**






# EXPRESS A TARGET CONDITION AS IF YOU WERE ALREADY THERE

**Establishing a Target Condition is like time travel. Pretend you have fast-forwarded to the achieve-by date and are looking at the focus process. The Target Condition is a description of what you see.**




**A Target Condition answers questions like:**

- ***How do we want this process to be operating / functioning on (date)?***
- ***What functionality do we want to have by (date)?***
- ***What is the target pattern we envision existing on the achieve-by date?***

# A Target Condition describes both a desired outcome and desired operating attributes that generate that outcome

**A Target Condition includes both of these elements and is therefore more than just an outcome goal**

| TARGET CONDITION | | |
|---|---|---|
| Desired Operating Attributes *"How the game is played"* | + | Desired Outcome *"The score"* |
| Desired attributes of how basketball free throws are shot | Examples | 80% of basketball free throws made |
| Desired attributes of how math and science are taught.<br>Desired attributes of student practice. | | All 6th grade students in our school passing the standardized test for math and science |

# YOUR EXPERIMENTING WILL TAKE PLACE ON THE OPERATING ATTRIBUTES



**The *"construction site"* will be here**

***Focus your experimenting here, to achieve the desired outcome***

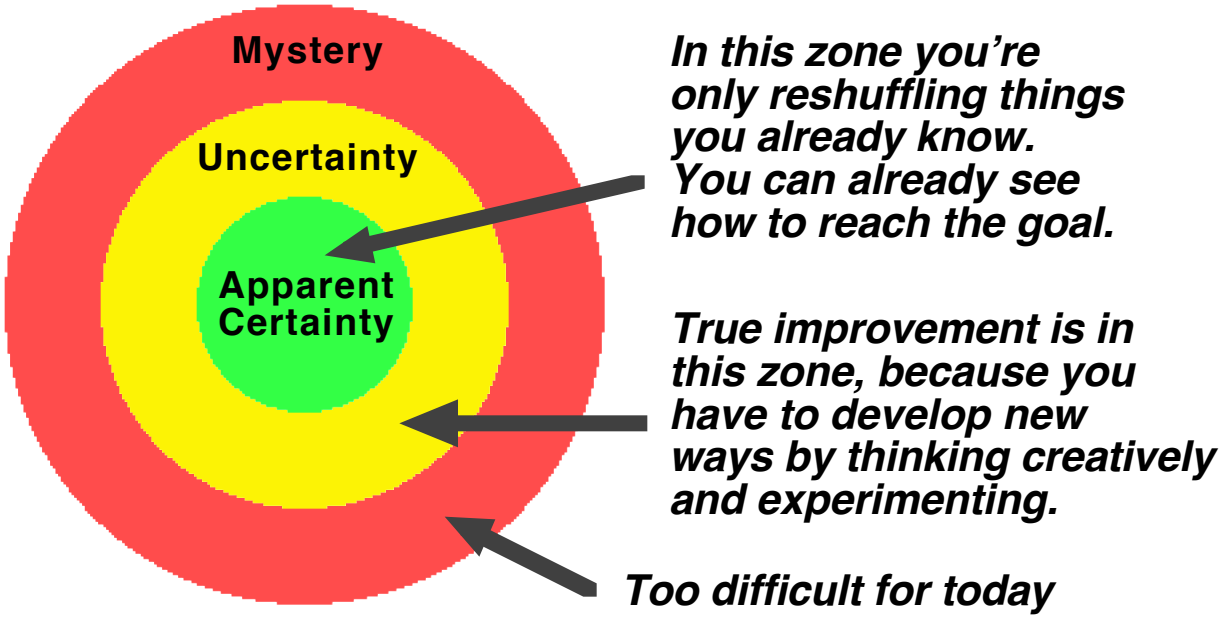
| TARGET CONDITION | | |
|---|---|---|
| **Desired Operating Attributes** + | | **Desired Outcome** |
| ***This is actionable*** | | ***This can't be achieved directly*** |
| **Desired attributes of how basketball free throws are shot** | → | **80% of basketball free throws made** |
| **Desired attributes of how math and science are taught.**<br>**Desired attributes of student practice.** | → | **All 6th grade students in our school passing the standardized test for math and science** |

# A TARGET CONDITION SHOULD BE CHALLENGING

## A Target Condition lies outside what you currently know

**Don't limit a Target Condition to what you already know. As you define a Target Condition, you should not yet know exactly how you will achieve it. This is normal. Otherwise you'll just be in an *implementation* mode rather than in a creative *improving and innovating* mode.**

**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.**




***"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**




## A Target Condition is not about the highest payoff or lowest-risk option. It's something you need to strive for next in order to get closer to meeting your overarching challenge.

**Don't utilize cost/benefit analysis (ROI) to determine what a Target Condition should be. Using cost/benefit analysis in this way means you're only operating within the scope of what you already think you know; within your current knowledge threshold. You can't really assign a cost to what you don't yet know.**

**In other words, don't use cost-benefit analysis to determine *where to go*. First determine where you want or need to be next—the Target Condition—and then you can utilize cost/benefit analysis along the way to help you determine *how* to get there.**

**What you are doing is defining the next Target Condition you need to achieve in order to move toward the challenge, and then working iteratively to achieve it within budget and other constraints. A Target Condition should be achieved within target cost and time, of course, but it usually takes ingenuity & resourcefulness along the way to achieve the goal within those constraints.**

**In this managerial system, cost/benefit analysis is used less for determining direction and more for helping to definine where we need to get creative in order to achieve a desired condition.**

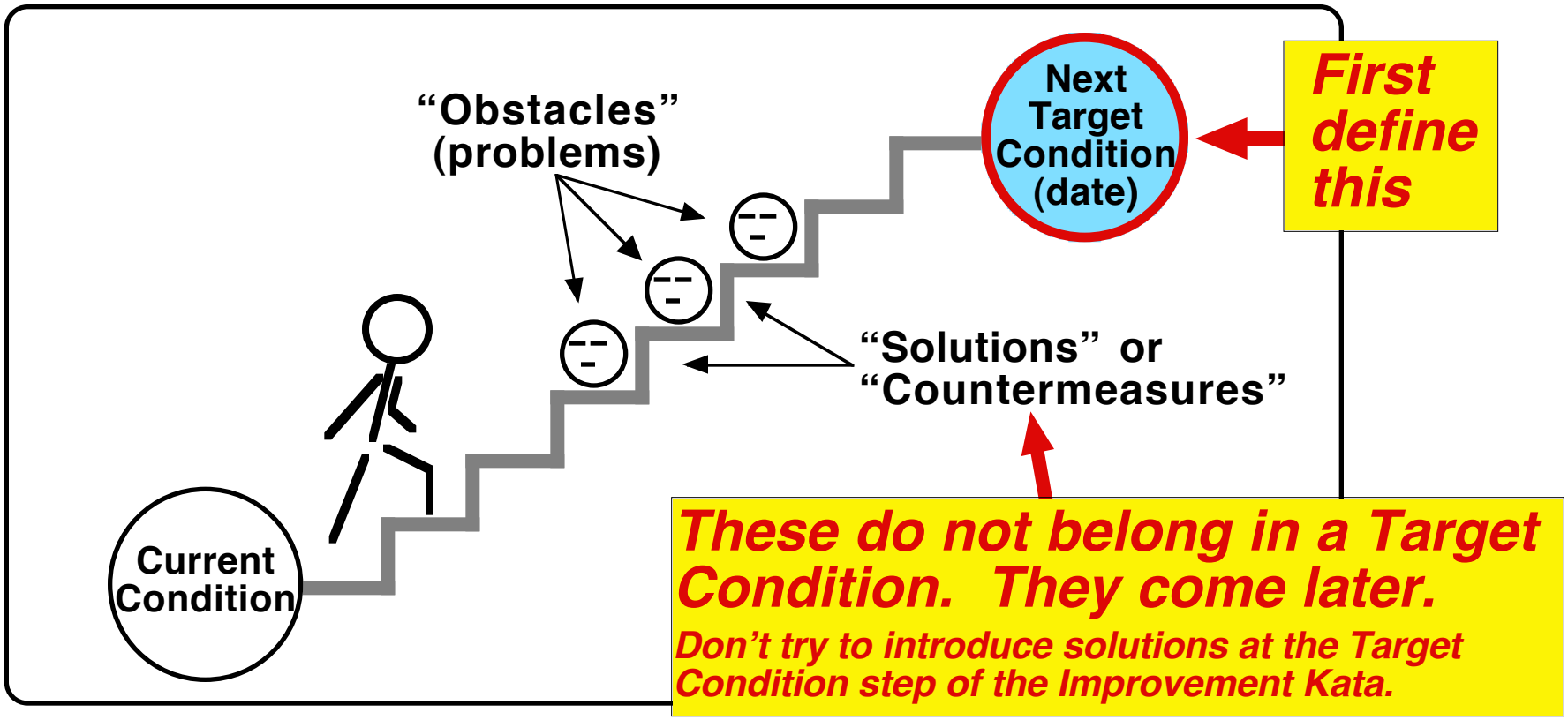
| A TARGET CONDITION IS NOT | WHY |
|---|---|
| A Target Condition is not about avoiding negative outcomes. | A Target Condition is about achieving new outcomes. |
| A Target Condition is not an either/or choice between existing options. | A Target Condition represents a new situation that did not exist previously.<br><br>You are aiming for all the attributes of the Target Condition to exist *simultaneously.* It's "and" not "or." |
| A Target Condition does not mean setting a stretch goal and then just letting people struggle with it. | The Improvement Kata is about giving people challenges *and* teaching them (through practice) an effective way of meeting them. |

# DO NOT PUT SOLUTIONS IN A TARGET CONDITION

## This is a common error in defining a Target Condition

**A *Target Condition* does not contain *solutions*. It is only a description of set of performance attributes you want to reach by a specified date. Slow down and just describe that... it's too early to talk about solutions.**

**You don't yet know how you will get there, and that's normal. Later, in the 'Executing' phase of the Improvement Kata, you'll work iteratively to overcome *obstacles* that lie between you and the Target Condition, by developing and testing *solutions* or "countermeasures".**



# EXAMPLE

## Don’t put solutions in a Target Condition

| | |
|---|---|
| **VISION:** | **No harm to patients.** |
| **CHALLENGE (1 year):** | **A specific rate of medical errors lower than today’s** |

| NOT a Target Condition | USEFUL Target Condition |
|---|---|
| ***Visual boards in every patient’s room.*** | ***The visual boards in every patient’s room are complete and accurate.*** |
| **In this case the team already knows the answer, so there is no process of experimentation, discovery and learning. The stated goal is within the team’s threshold of knowledge and thus is not a Target Condition.** | **The team does not yet know how it will reach this Target Condition. To get the boards to be "complete and accurate" will require a process of discovery and change. Now the team can conduct experiments against the obstacles they find are preventing the boards from being complete and accurate.** |

**Many problem solvers mistakenly think of the solutions they already have in mind as a Target Condition. The "lack of a proposed Lean tool" isn't a Target Condition, but on the other hand, to make a Lean tool actually work will surface a lot of underlying issues.**

**Here's a tip. When a team is prematurely focusing on solutions, ask what effect they envision those solutions having. What they say then will be closer to a real Target Condition.**

Example by Michael Lombard, Drew Locher and Mark Rosenthal

# THE DIFFERENCE BETWEEN "TARGET CONDITION" AND "SOLUTIONS"

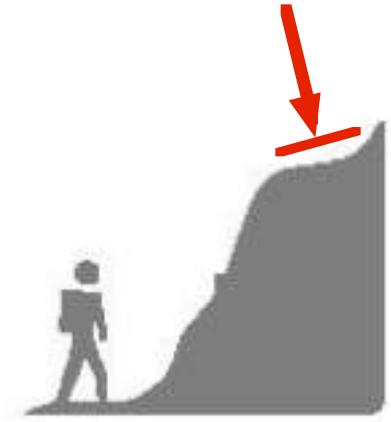
**TARGET CONDITION** → **PLAN** → **SOLUTIONS**

**A description and specification of a desired new operating pattern, performance attributes, characteristics or functionality you want a process or system to have on a future date.**

**A prediction of the steps that will be required to achieve the Target Condition.**

**(Every plan is only a theory)**

**These are the actual steps, techniques and countermeasures that you learn are necessary for achieving the Target Condition in reality.**







**The exact path that gets you to the Target Condition will only be known in hindsight.**

# WHEN YOU FINISH THE 'TARGET CONDITION' STEP OF THE IK THERE WILL BE UNCERTAINTY

## The path to your Target Condition should be non-obvious. That's normal and correct!

**We have a natural tendency to state solutions we already have in mind as goals, which is unscientific. As you establish a Target Condition, people on the team will often already have ideas about how it can be reached. It's important to recognize that these are only theories about the potential path, and that while you can acknowledge them (and they may be right), they should not be included in your Target Condition.**

**You are heading into the grey zone of uncertainty, so formulate your Target Condition in a way that remains open to solutions other than those you might currently think will get you there.**



**You'll be making lots of course corrections as you strive to achieve your Target Condition and learn through experimenting**

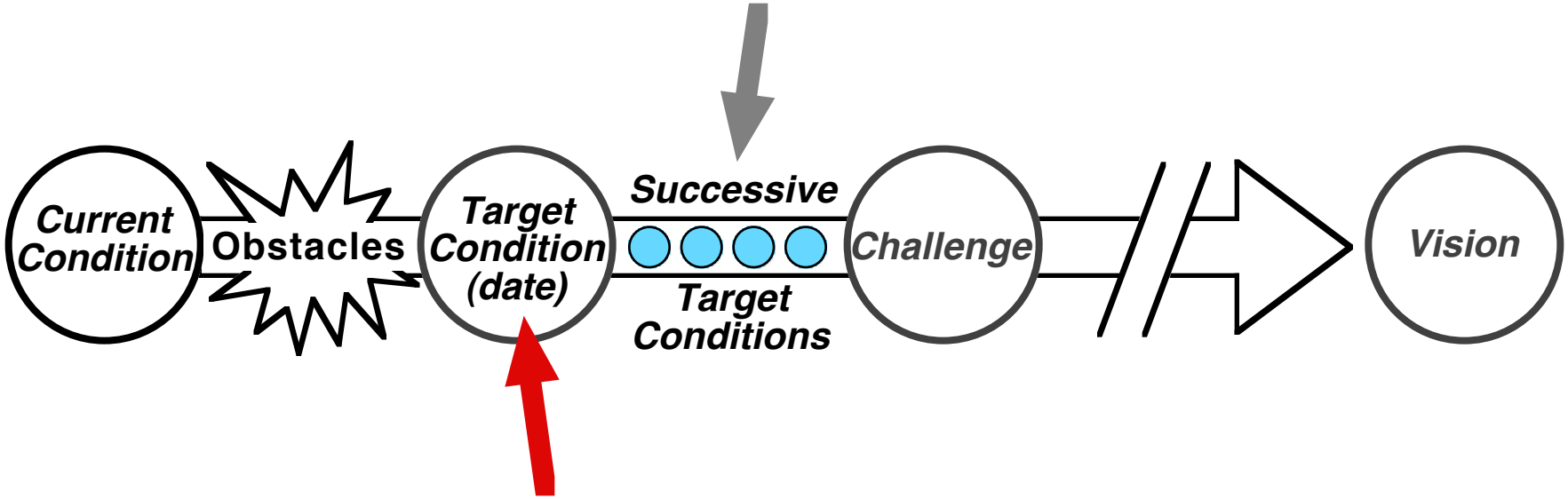


# Practice Routines

# KEEP IN MIND THAT YOU DON'T NEED TO REACH THE CHALLENGE IN ONE LEAP

## There will be several target conditions on the way to the challenge

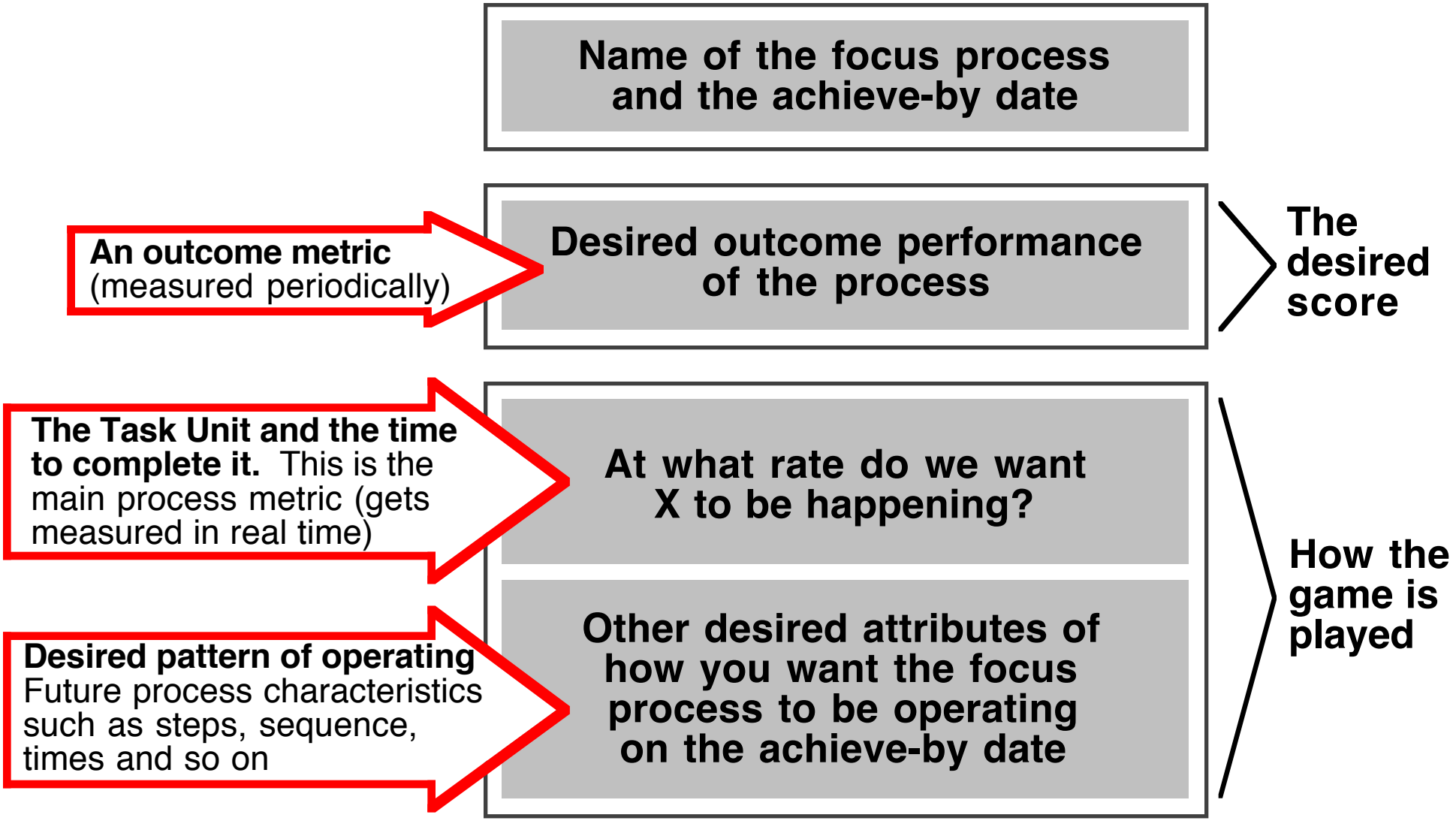
**The exact series of target conditions required to meet the overarching challenge can't be defined in advance. When you reach one Target Condition you'll know a lot more about what the next Target Condition should be.**




**You're only trying to specify the next Target Condition at this time**

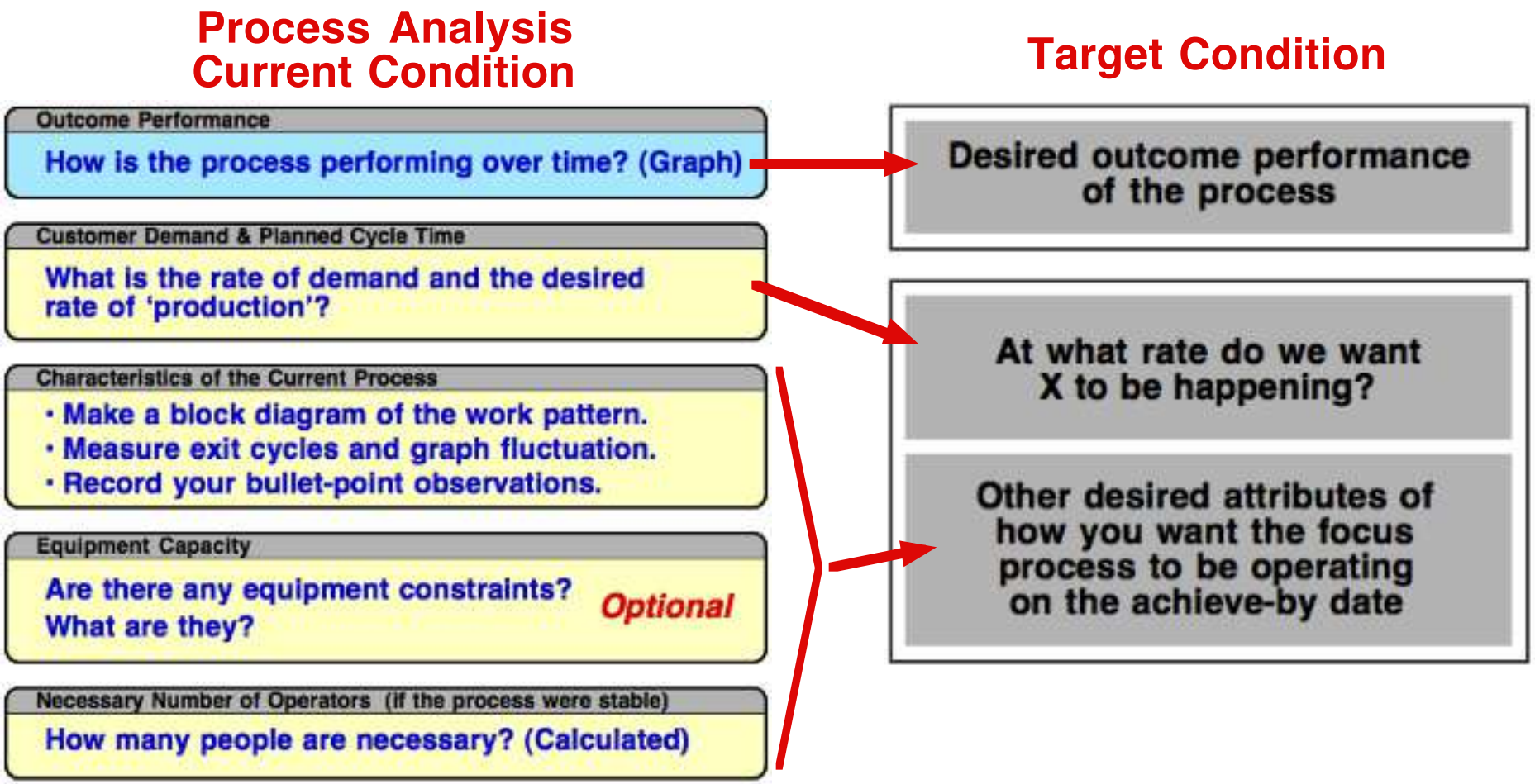
# ELEMENTS OF A GOOD TARGET CONDITION

## Note that a Target Condition is not just an outcome metric



# REFER TO YOUR PROCESS ANALYSIS

## Describe the next Target Condition for the focus process based on your observations and analysis of its Current Condition



# EXAMPLE TARGET CONDITION CONTENTS

**The elements in a Target Condition reflect the level you are at in the organization (process / loop / value stream). The following are some process-level examples.**

| | |
|---|---|
| **Name of the focus process and the achieve-by date** | **1 week - 3 months in the future** |
| **Desired outcome performance of the process** | **A measure of process performance over time**<br>**Examples:** • Number of items per hour, shift, day or week<br>• Overtime<br>• Productivity<br>• Target Cost<br>• Quality |
| **At what rate do we want X to be happening?** | **'Takt Time' or the target rate for a process characteristic** |
| **Other desired attributes of how you want the focus process to be operating on the achieve-by date** | **Process characteristics such as:**<br>• Number of shifts<br>• Amount of downtime<br>• Number of people<br>• Number of shifts<br>• Where 1x1 flow is desired<br>• Amount of cycle fluctuation<br>• Inventory amounts<br>• Production sequence & lot sizes<br>• Changeover time |

| Do not put these in a Target Condition | WHY |
|---|---|
| **Do not use words like these in a Target Condition:**<br>**"Minimize" "Reduce"**<br>**"Improve" "Increase"** | **No verbs in a Target Condition! This forces you to actually describe the conditions you want to have in place when you get there.**<br>**A Target Condition describes a desired pattern at a future point in time, not actions. Transport yourself to the future and state the Target Condition as if you are already there.** |
| **These are not a Target Condition:**<br>***--> Have visual boards in every patient room***<br>***--> Apply 5S** (workplace organization & visual systems)*<br>***--> Install a barcode system*** | **These are countermeasures, which should not be confused with a Target Condition. They are more suitable as experiments on the way to the Target Condition.**<br>**First describe attributes of how you want the focus process to be operating on the achieve-by date. Countermeasures are then developed *as needed* through experiments as you strive to reach that Target Condition.** |
| **These kinds of statements alone ≠ a Target Condition:**<br>**"A pull system" (kanban)**<br>**"Milk-run material delivery"** | **Not enough descriptive detail. A kanban or material-delivery system can be a Target Condition, but you need to describe the attributes or pattern of how you want it to operate.** |

# Steps to Establishing a Target Condition

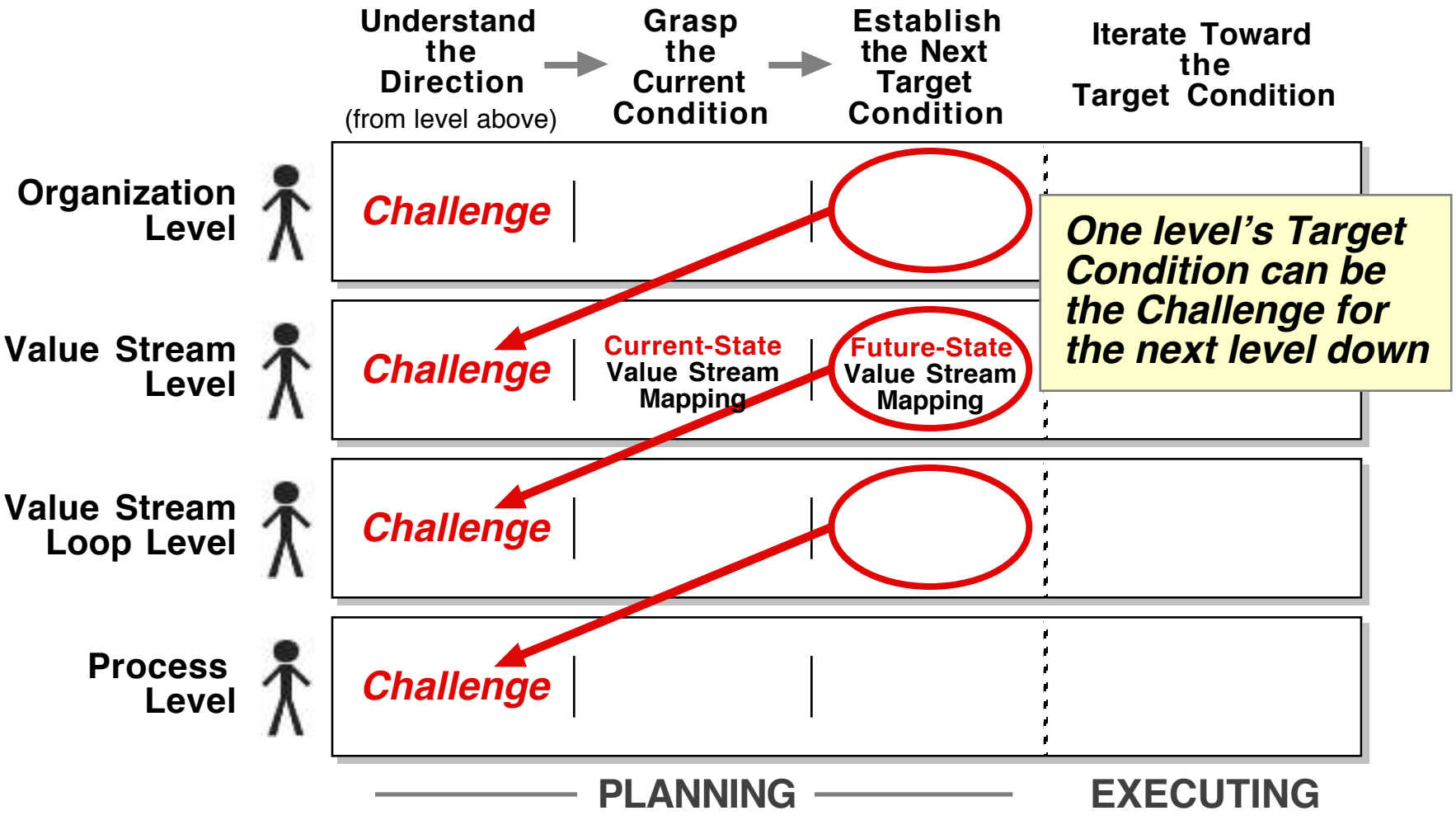


1. Review your Challenge
2. Set the TC achieve-by date
3. Define the desired outcome performance
4. Define the desired attributes
5. Start the ‘Obstacles Parking Lot’

# TC STEP 1: REVIEW YOUR CHALLENGE

**You should not establish a Target Condition without first understanding the Challenge from the first step of the Improvement Kata pattern. That Challenge is the frame within which Target Conditions should be defined.**

**What is the future-state design for your value stream, and what does your process need to do to make that design possible? Note that oftentimes the Target Condition at the level above you will be the Challenge for your level.**



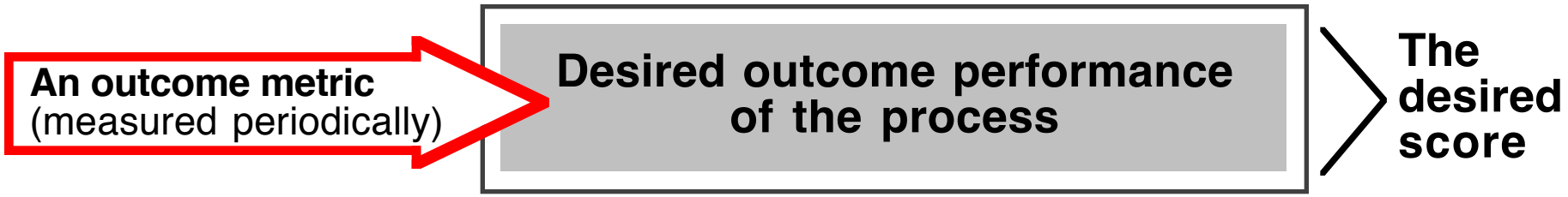
# TC STEP 2: AGREE ON THE TC ACHIEVE-BY DATE

**The Coach proposes an achieve-by date (level of difficulty) for the Learner's next Target Condition based on the Learner's Improvement Kata skill level. This table is a general guideline.**

**In the begining shorter is better for learning because then there will be more repetitions of the Improvement Kata pattern.**

| Target Condition Degree-of-Difficulty Guideline | | |
|---|---|---|
| **Learner's Skill Level** | **Characteristics of the Skill Level** | **Maximum TC Achieve-By Date** |
| ***Expert*** | No longer relies on rules / guidelines / maxims<br>Grasp of situations & decision making intuitive<br>Vision of what is possible | **??** |
| ***Proficient*** | Sees what is most important in a situation<br>Perceives deviations from the normal pattern<br>Maxims vary according to situation | **Target condition ≤ 3 months out** |
| ***Competent*** | Copes with crowdedness<br>Sees actions partially in terms of LT goals<br>Has standardized and routinized procedures | **Target condition ≤ 1 month out** |
| ***Advanced Beginner*** | Action based on attributes or aspects<br>Situational perception still limited<br>All aspects are given equal importance | **Target condition ≤ 2 weeks out** |
| ***Novice*** | Adherence to rules or plans<br>Little situational perception<br>No discretionary judgement | **Target condition ≤ 2 weeks out** |

# TC STEP 3: STATE THE NECESSARY OUTCOME PERFORMANCE




**Based on the Challenge, there is usually an outcome performance level that the focus process will need to achieve, in order for the Challenge to be met. However, that outcome performance level may be too far away to use in the first few target conditions.**

**Based on the Challenge + the analysis of the current state + the achieve-by-date either the Learner or the Coach proposes the desired outcome performance to be reached by the achieve-by date.**



**This outcome-performance element of the Target Condition should be mathematically consistent. That is, the Learner and Coach should derive and be able to show the rationale for the outcome target mathematically.**

**For instance, if a process's outcome goal is a specific Lead Time number, then this number should come from a calculation that determines what process Lead Time is necessary for achieving the future-state value stream design. Just shooting for a *"50% reduction"* or any other ad-hoc number is not acceptable, and suggests that the Learner is not sufficiently informed about the overarching Challenge.**

# THE REMAINING STEPS ARE DONE BY THE LEARNER, IN AN ITERATIVE DIALOG WITH THE COACH




**You may think a Target Condition is a goal given to the Learner by the Coach, but that is incorrect. Developing the Target Condition is a back-and-forth process between the Learner and the Coach.**

**The Learner defines the Target Condition and proposes it to the Coach. The Learner receives feedback from the Coach and fine-tunes the Target Condition accordingly. This process repeats until Coach and Learner come to consensus on the Target Condition. The Learner may have to rethink and adjust the Target Condition several times.**

**The Coach asks the Learner to use the right side of the Current Condition / Target Condition form that was used in the process analysis, to describe how the Learner would like the focus process to be operating on the achieve-by date.**

# TC STEP 4: DEFINE DESIRED ATTRIBUTES

**The Learner should now develop the target process characteristics and operating pattern, as much as s/he can at this point**

**The Task Unit and the time to complete it.** This is the primary process metric (measured in real time)

**Desired pattern of operating** Future process characteristics such as steps, sequence, times and so on

**At what rate do we want X to be happening?**

**Other desired attributes of how you want the focus process to be operating on the achieve-by date**

**How the game is played**

**The target process characteristics and operating pattern are a kind of hypothesis that says, *"If I create a process that follows this pattern, then we will get the desired process outcome performance."* The process characteristics and operating pattern are what the Learner will actually be able to influence and work on in order to change the focus process's outcome performance.**



**Remember... the Learner should avoid thinking of specific solutions at this step of the Improvement Kata. You are describing how you want the focus process to operate**

# Caution in Steps 3 & 4

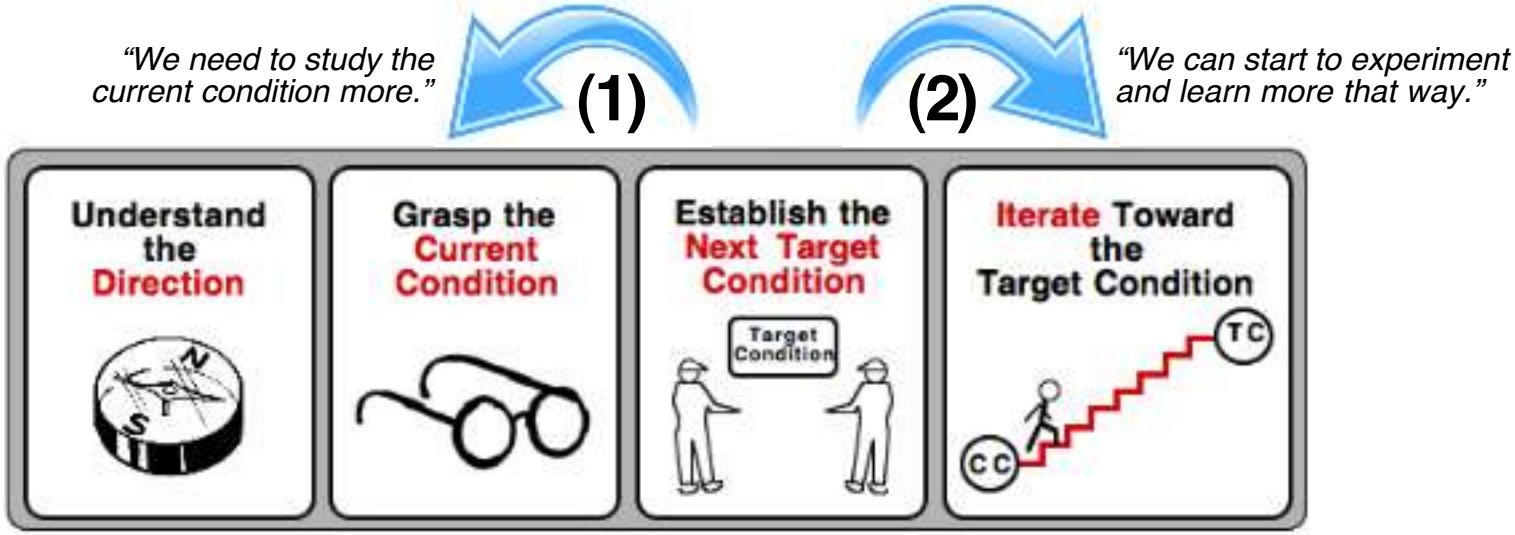
# DON'T CROSS OVER THE THRESHOLD OF KNOWLEDGE!

**The 'Threshold of Knowledge' (TOK) is the point at which we have no facts & data and start guessing. Don't add items to the Target Condition based on conjecture. When the Learner hits a TOK --> STOP! It's better to say *"I don't know"* or *"not sure."***

**You then have two options:**

**(1) Get more information, for example by additional analysis of the current condition of the focus process.**

**(2) Leave these parts of the Target Condition blank and flesh them out as you learn more in the experimenting phase of the Improvement Kata.**



# YOU CAN'T CHANGE A TARGET CONDITION BUT YOU CAN ADD TO IT

**Once a Target Condition is established, its content and achieve-by date should not be changed. This is done so we take time to analyze the current condition, think carefully about the Target Condition and, when the going gets tough, work hard to understand and with creativity get through the obstacles that arise step by step. This way you achieve a new level of system performance, rather than simply altering the Target Condition.**

***Do or do not. There is no try.*** **~ Yoda**

**But it is OK to leave details out of a Target Condition and add them as you work toward the TC and learn more. The Target Condition can be fleshed out with additional detail as you experiment and your knowledge of reality increases.**

**And remember... at any point in the Improvement Kata pattern you can conduct quick side experiments to test ideas and see further. Incorporate what you learn into the Target Condition.**

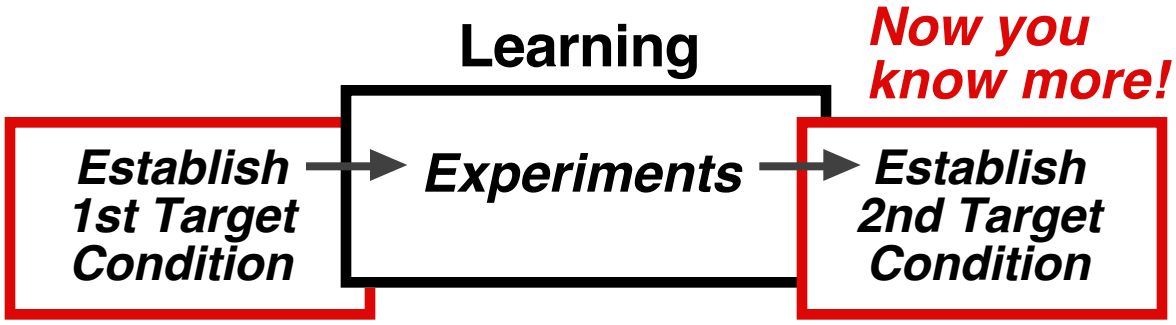
# YOUR FIRST TARGET CONDITION WON'T BE PERFECT

## Don't worry about getting everything right

**Developing a good Target Condition is a skill that comes with experience, and your first Target Condition probably won't be the best.**

**Since the achieve-by date for a beginner's first few target conditions is short (1-2 weeks) it's OK if you make mistakes in establishing the first Target Condition. This will quickly become apparent and get corrected when you establish the next Target Condition for the focus process. (There's always a next Target Condition.)**

**It's a good learning experience. Many details come from the experiments in Step 4 of the Improvement Kata pattern. Your knowledge increases on the way to the Target Condition.**

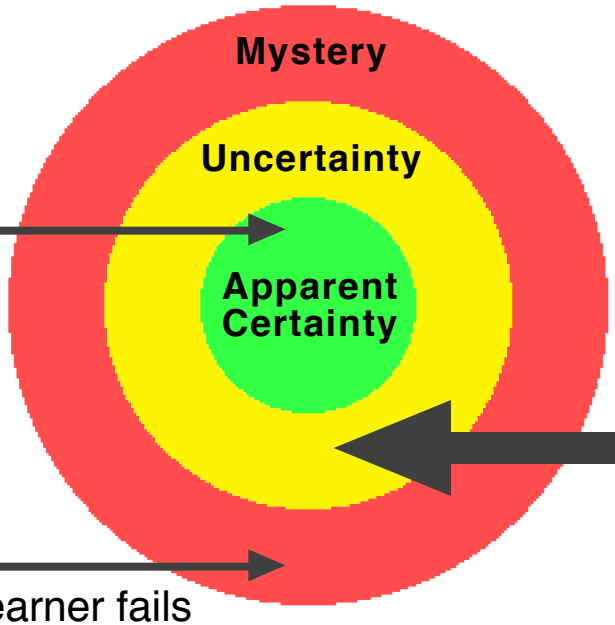


# THE TARGET CONDITION SHOULD NOT BE EASY

## The Coach should consider the Learner's current Improvement Kata skill level, and go just beyond it

**A good Target Condition takes the Learner beyond their current Improvement Kata skill level and compels them to learn, grow and adapt. The Coach decides how much of a stretch the next Target Condition should be, trying to have the Learner practice just over the edge of their capability.**

**Learning a new skill requires stretching and experiencing small failures along the way. That's normal.**




**Too easy**
The Learner already knows s/he can do it, so when the Target Condition is reached there is no increase in self-efficacy.

**Too hard**
If a beginner Learner fails then self-efficacy is decreased.



**It's important that the Learner is challenged, so s/he experiences a sense of accomplishment and an increase in self-efficacy.**

# TARGET CONDITION PLANNING FORM

**Three versions of the Current Condition / Target Condition form are on the next pages**

**Refer to the Current Condition summary on the left side of the form and answer the following questions as you fill out the right side:**

**--> What you will keep the same?**

**--> What do you want to change?**



**Upon completion, you can cut the form where indicated and post the right side of the form in the "Target Condition" field of your storyboard.**

# CURRENT CONDITION / TARGET CONDITION

**Challenge:**

**Learner:** **Coach:** **Process:**

| **Outcome Metric** | **Process Metric** |
|---|---|

| **Categories** | **Current Condition** Date | **Target Condition** Achieve-By Date |
|---|---|---|
| **Outcome Performance** *(Results)* | *show run chart* | |
| **Process Characteristics and Operating Pattern** *(Pattern of Working)* | *show block diagram or swim-lane diagram* | |

# CURRENT CONDITION / TARGET CONDITION

**Challenge:**

**Learner:** **Coach:** **Process:**

| **Outcome Metric** | **Process Metric** |
|---|---|

| | Categories | Current Condition (Date) | Target Condition (Achieve-By Date) |
|---|---|---|---|
| 1 | Outcome Performance *(Results)* | *show run chart* | |
| 2 | Rate of Demand<br>Rate of Production | | |
| 3 | Operating Pattern | *show block diagram*<br>*show all run charts* | *show block diagram* |
| 4 | Capacity | *show chart* | *show chart* |
| 5 | Number of People Required | | |

# CURRENT CONDITION / TARGET CONDITION

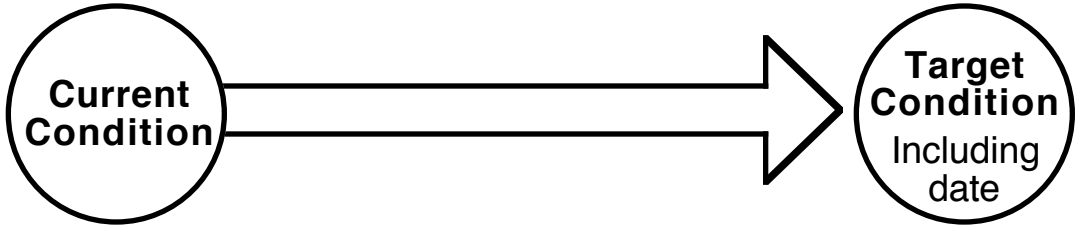
**Challenge:**

**Learner:** **Coach:** **Process:**

| **Outcome Metric** | **Process Metric** |
|---|---|

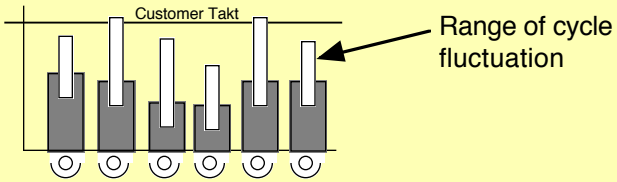
| Categories | | Current Condition (Date) | Target Condition (Achieve-By Date) |
|---|---|---|---|
| 1 Outcome Performance | Actual output / shift | *show run chart* | |
| | Overtime? | | |
| 2 Rate of Demand & Rate of Production | Takt time | | |
| | Pc/t | | |
| | # of Shifts | | |
| 3 Operating Pattern | Process steps and sequence | *show block diagram* | *show block diagram* |
| | Batch size | | |
| | Where WIP Accumulates | | |
| | Number of operators | | |
| | % exit cycle fluctuation (at end of line) | *+ show all run charts* | |
| | Other attributes of the process | | |
| 4 Capacity | Capacity chart | *show chart* | *show chart* |
| 5 People Required | Calculated number of operators | | |

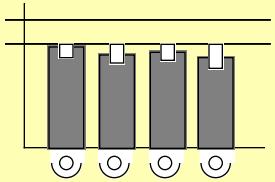
# NOTE THAT NOT EVERYTHING HAS TO CHANGE




***Not everything is changed***

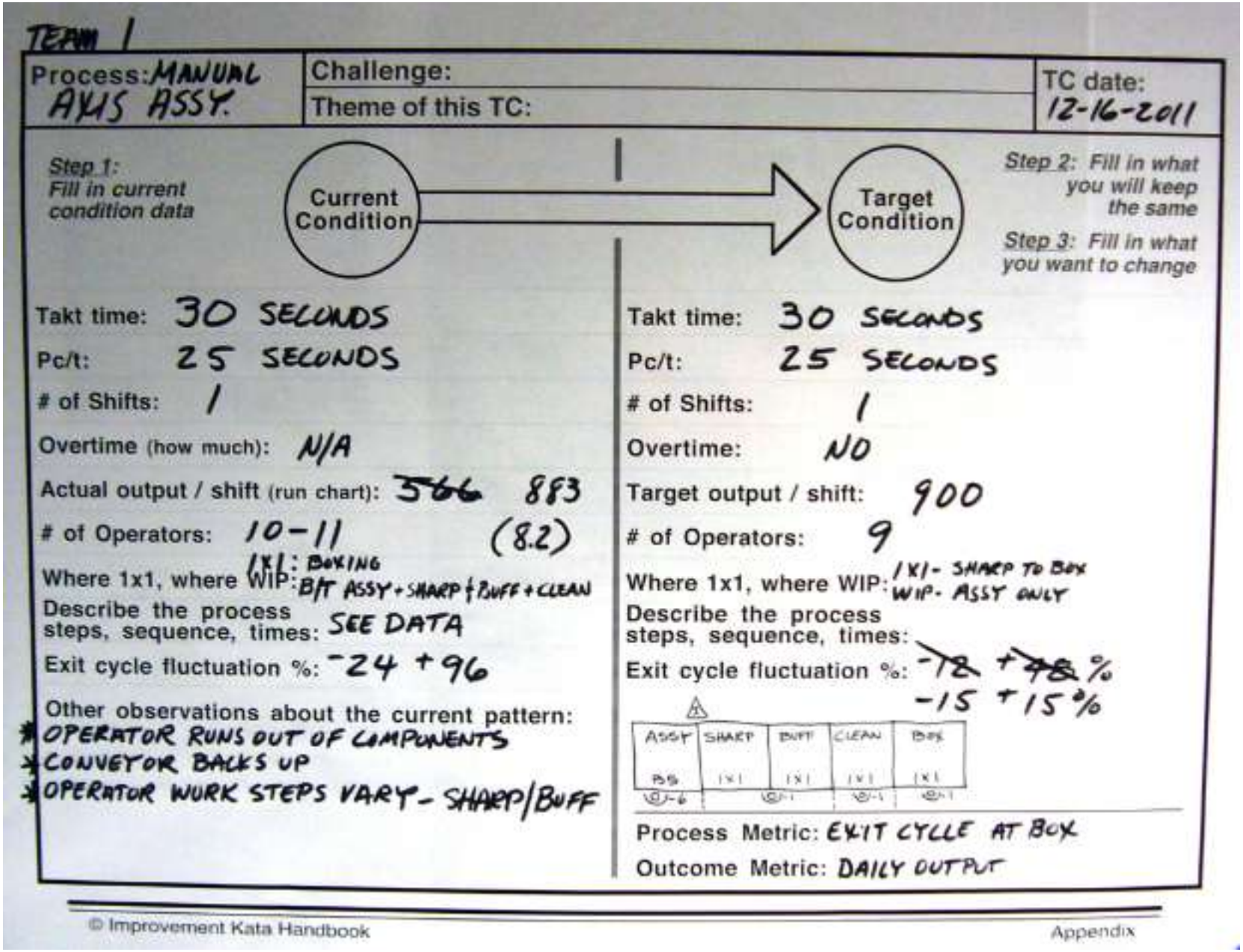
| | | |
|---|---|---|
| Customer Takt 30 sec | | **Customer Takt 30 sec** |
| Planned cycle time 25 sec | | **Planned cycle time 25 sec** |
| Two shifts + overtime | → | **Two shifts, no overtime** |
| Small, varying WIP between workstations | → | **1x1 Flow from stations 10 --> 110, 3 pieces SWIP after station 110** |
| 6 Operators, underutilized | → | **4 Operators (incl. steps, sequence, times)** |




| | | |
|---|---|---|
| Oper. cycle fluctuation +/- 100% | → | **Oper. cycle fluctuation +/- 10%** |
| Output cycle fluctuation +/- 70% | → | **Output cycle fluctuation +/- 10%** |
| Lot size 3 days | | **Lot size 3 days** |
| Output = 650-750 / shift | → | **Output = 850 pieces per shift** |

# A MANUFACTURING EXAMPLE



TEAM 1

| Process: MANUAL AXLE ASSY. | Challenge: / Theme of this TC: | TC date: 12-16-2011 |
|---|---|---|

Step 1: Fill in current condition data

Current Condition

Target Condition

Step 2: Fill in what you will keep the same

Step 3: Fill in what you want to change

| | Current Condition | Target Condition |
|---|---|---|
| Takt time: | 30 SECONDS | 30 SECONDS |
| Pc/t: | 25 SECONDS | 25 SECONDS |
| # of Shifts: | 1 | 1 |
| Overtime (how much): | N/A | NO |
| Actual output / shift (run chart): | ~~566~~ 883 | |
| Target output / shift: | | 900 |
| # of Operators: | 10-11 (8.2) | 9 |
| Where 1x1, where WIP: | 1x1: BOXING B/T ASSY + SHARP & BUFF + CLEAN | 1x1 - SHARP TO BOX WIP - ASSY ONLY |
| Describe the process steps, sequence, times: | SEE DATA | |
| Exit cycle fluctuation %: | -24 +96 | ~~-12 +48~~ % -15 +15 % |

Other observations about the current pattern:

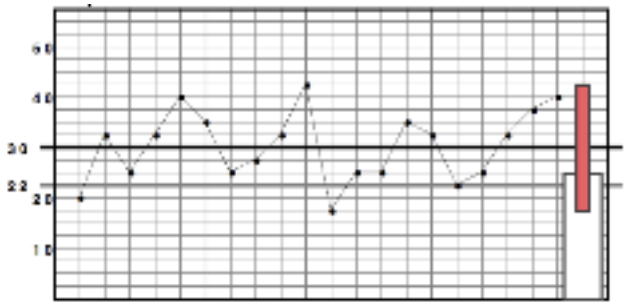
* OPERATOR RUNS OUT OF COMPONENTS
* CONVEYOR BACKS UP
* OPERATOR WORK STEPS VARY - SHARP/BUFF



Process Metric: EXIT CYCLE AT BOX

Outcome Metric: DAILY OUTPUT

© Improvement Kata Handbook Appendix



# ABOUT TARGET CONDITION CYCLE FLUCTUATION

**There are a few different ways to give a numerical value to the fluctuation / variation you find in process cycles. What's most important is that you can quantify the following:**

**a) Where you are (taken from an exit-cycles run chart)**

**b) How much fluctuation / variation you want to have next**

**In response to (b) the Learner may say "zero," but that's not possible. Better to say something like:**

**a) *"We currently observe -61% / +24% variation in the process exit cycles"***

**b) *"By** (achieve-by date) **we want the varation to be within +/- 15%"***

**This sets the Coach and Learner up to go through the Five Questions daily and engage in purpose-driven improvement.**

**Notice that this is not about in-control / out-of-control -- as in statistical process control -- but simply, *"What variation do we currently have?"* and *"What variation do we want next?"***

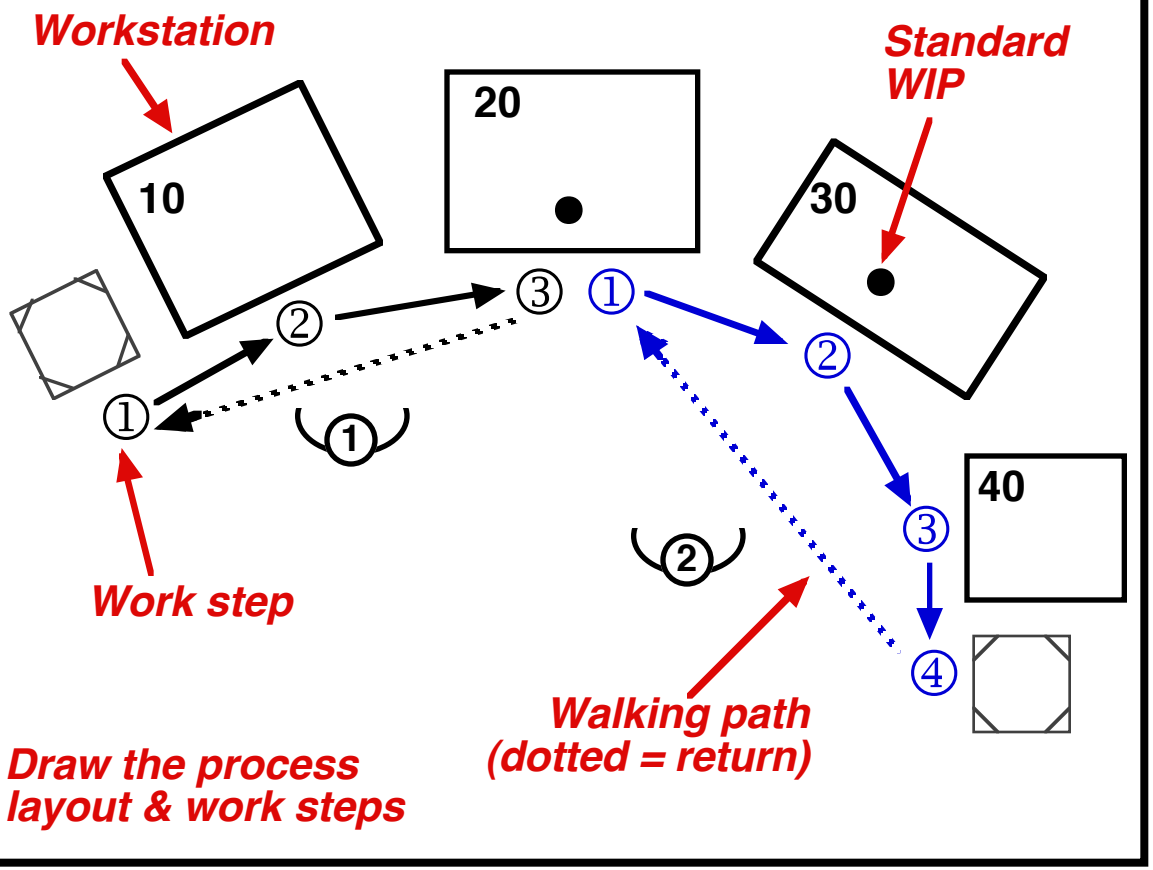
# YOU SHOULD DEFINE THE DESIRED PROCESS STEPS, SEQUENCE & TIMES AS MUCH AS POSSIBLE

## Use this form, or a swim-lane diagram, etc.

**WORK STEPS & SEQUENCE** | **Process:** | **Date:**

| Operator | Operator | Operator | Operator |
|---|---|---|---|
| | | | |
| | | | |
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Work Sequence ① ② ③ | Walking → | Return to Start ⇠ | Standard WIP ●

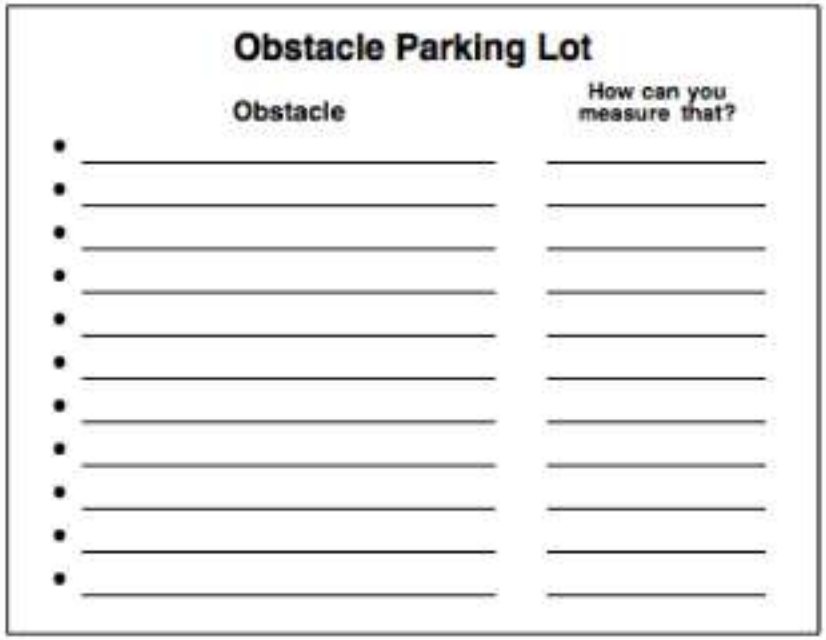


# TC STEP 5: START THE 'OBSTACLES PARKING LOT'

## These are obstacles relative to the Target Condition

**As the Learner establishes the next Target Condition s/he will start to gain insight into some of the obstacles that are in the way. The Learner should start a simple "Obstacles Parking Lot," which is a list of obstacles that s/he thinks will prevent you from reaching the Target Condition.**

**Note that there are obstacles that are not yet known, which will be discovered and added to the OPL along the way.**



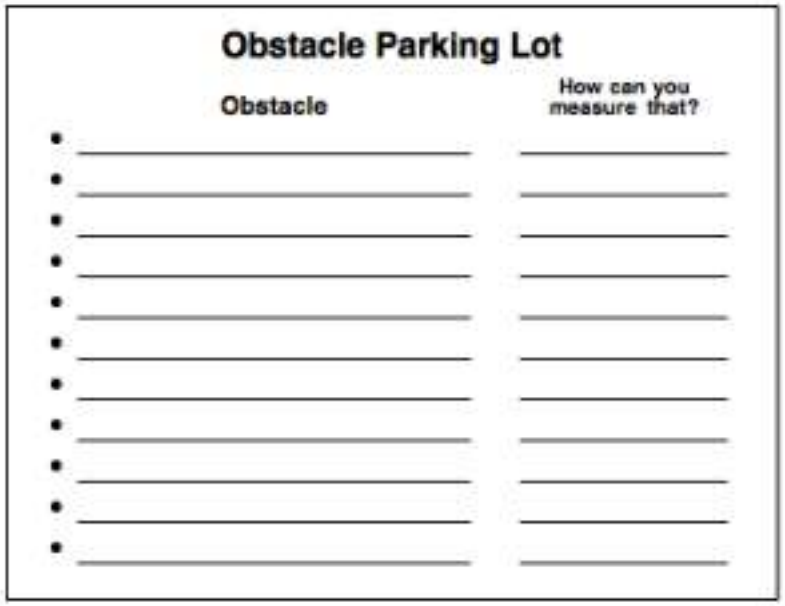

**A photocopy-ready OPL form is in the Appendix. The Learner should continue to update the OPL on the storyboard as s/he learns more in the 'executing' phase of the Improvement Kata.**

# WHAT IS AN "OBSTACLE"?

**Obstacles are <u>problems</u> that appear to be preventing you from reaching the Target Condition... stated as problems. Obstacles are often mistakenly stated as countermeasures or solutions that the Learner already has in mind.**

|  **This is a Countermeasure or Solution** |  **This is an Obstacle** |
|---|---|
| "Lack of a standard"<br><br>**Here the Learner is already thinking that they want to implement a standard as a solution. Too soon!** | "Variability in how the work is done" |

# PURPOSE OF THE OBSTACLES PARKING LOT




**Do not Pareto this list and do not turn it into an action-item list! It's simply a place to note and hold perceived obstacles, which you may or may not work on.**

**The obstacles you actually work on and the steps you actually take will be determined through your experiments in the next step of the IK pattern.**

**The purpose of the Obstacles Parking Lot is:**

1) **To bring in the reality that this will not be easy.**

2) **To help the Learner understand that they shouldn't tackle several obstacles at once. The OPL helps prevent the Learner from going after several issues or ideas simultaneously, which is usually an unscientific approach.**

3) **To help the Learner recognize the limits of prediction and perception. Some perceived obstacles will turn out to not be obstacles, and other obstacles will arise along the way.**

# *OBSTACLE* IS A GOOD WORD TO USE

## When we visualize the struggle we may actually be more motivated than if we just visualize the Target Condition

**Practicing the Improvement Kata pattern is not supposed to sound easy like... problem -> cause -> countermeasure -> check -> sustain and then you have a new state. That sort of unrealistic thinking tends to keep us inside our current knowledge thresholds.**

**Overcoming obstacles on the way to your next Target Condition helps develop self-efficacy. Failed experiments there are normal and help develop a useful humbleness.**

**Being mindful of the overall Challenge, the Current Condition, the next Target Condition *and* of real obstacles that are in the way to that Target Condition is a good setup for working effectively toward your goals.**

***How we visualize what we will be undertaking is important, but what happens once we get started may be even more important. That's the subject of the next step of the Improvement Kata pattern and of the next chapter!***

# Target Conditions for Office & Service Processes



# ESTABLISHING A TARGET CONDITION FOR OFFICE AND SERVICE PROCESSES

## Suggestions for processes where the work content varies

- **Keep in mind that all you are trying to do is define a *pattern* of working to then iteratively (scientifically) strive to achieve.**

- **In administrative processes the sequence and volume of work is often variable. A useful tactic is to set a "pitch" as a framework. This means establishing a target pattern by fitting work into consistent-sized time increments at set times (a "pitch").**

  **For example, instead of releasing work to an administrative process by natural customer orders -- whereby the amount and timing of work can vary greatly -- release work in equal portions to fill that consistent, scheduled time increment or "pitch."**

  **The pitch is not a "takt time" calculation, but simply an intelligently-selected time increment. An example might be *three applications processed every day from 1-2PM*.**

- **Note that this is not something to simply be implemented or forced on the operators, but a *target condition* you work toward iteratively by seeing and overcoming obstacles to it. You're establishing what you want to be happening in that pitch increment, so you can see what you need to work on to get there.**

# ESTABLISHING A TARGET CONDITION FOR OFFICE AND SERVICE PROCESSES

## (continued)

- **One tactic is to classify work by type and only do one type per pitch, or release a mix that fits the time-frame of the pitch increment. Three categories, small/medium/large or regular-daily/project/sporadic are often sufficient.**

- **Your initial target condition doesn't have to be perfect. Once you have a first basic target pattern, it's a matter of applying PDCA (coached daily with the 5 Coaching Kata Questions) to find and break through obstacles that are preventing you from getting there.**

  **As you do that you'll learn more about the patterns in the work, which you can integrate into the next target condition. Eventually, after you discover and remove enough obstacles that cause variability, you may be able to better understand patterns in the customer demand and even calculate a takt time for this work.**

# Office & Service Processes

# DEFINE A TARGET PATTERN OF TIME/WORK PITCHES




**Pattern hard to see. Random chasing after problems. No target condition to strive for.**

***How the work arrives***

| Job 1 | Job 2 | Job 3 | Job 4 | Job 5 | Job 6 | Job 7 |
|---|---|---|---|---|---|---|

**A daily pitch pattern to iteratively strive toward.**

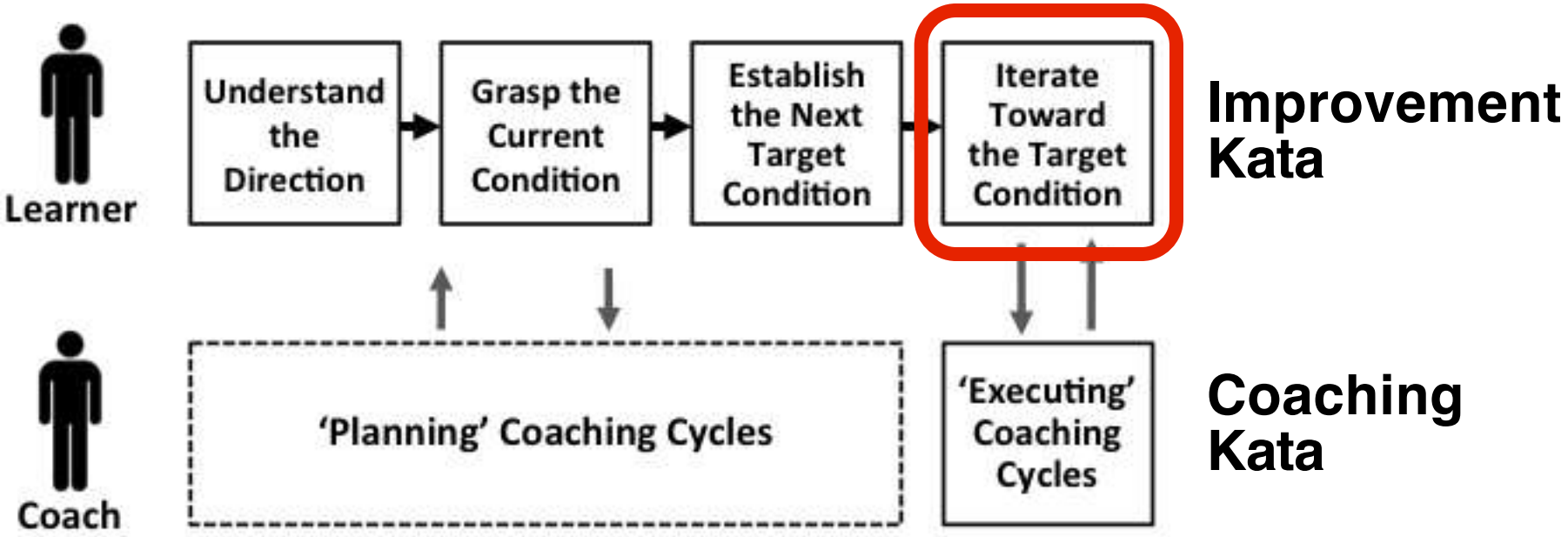
***Work split into consistent increments***

| Job 1 | Job 2 | Job 3 | Job 4 | Job 5 | Job 6 | Job 7 |
|---|---|---|---|---|---|---|

**Don't worry about the increments being perfect at the start. Define a target increment, make that part of your target condition, and start asking the Five Coaching Kata Questions.**

# EXECUTING PHASE
## *How to Get There*

### Chapter 7. Step 4: Iterate Toward the Target Condition





# TIME TO SHIFT GEARS

**Having a next Target Condition (based on a grasp of the current condition and aimed at the challenge) is important, but great execution is equally important. If you have those two together then anything is possible.**

**This chapter of the Improvement Kata Handbook gives you starter routines (Kata) for practicing a highly-effective, scientific approach to execution.**

**In this phase the Learner moves toward the Target Condition iteratively though experiments, while the Coach accompanies the process via daily Coaching Cycles with the Five Coaching Kata Questions.**

**It's in this phase that the logic of the Improvement Kata pattern usually becomes clear to the beginner Learner. The "why" we are working this way becomes apparent sometime during the executing coaching cycles.**

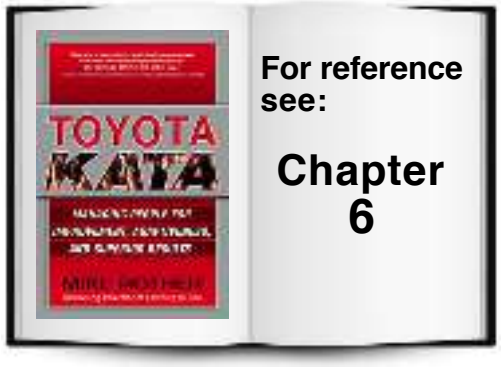
# Chapter 7

## The Improvement Kata - Executing Phase

## Step 4: ITERATE TOWARD THE TARGET CONDITION

**Practice this Routine**




**For reference see:**

**Chapter 6**

# ORIENTATION



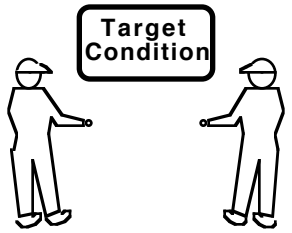

**Understand the Direction**



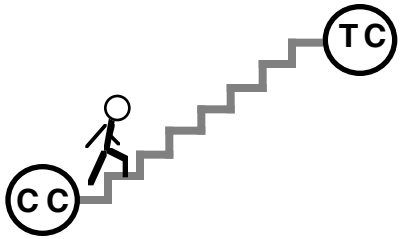

**Grasp the Current Condition**



**Establish the Next Target Condition**




**Iterate Toward the Target Condition**



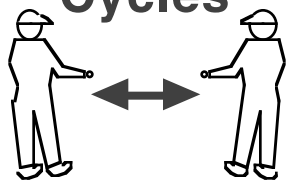



LEARNER

**The discovery process between Current Condition and Target Condition**

**'Planning' Coaching Cycles**

**'Executing' Coaching Cycles**

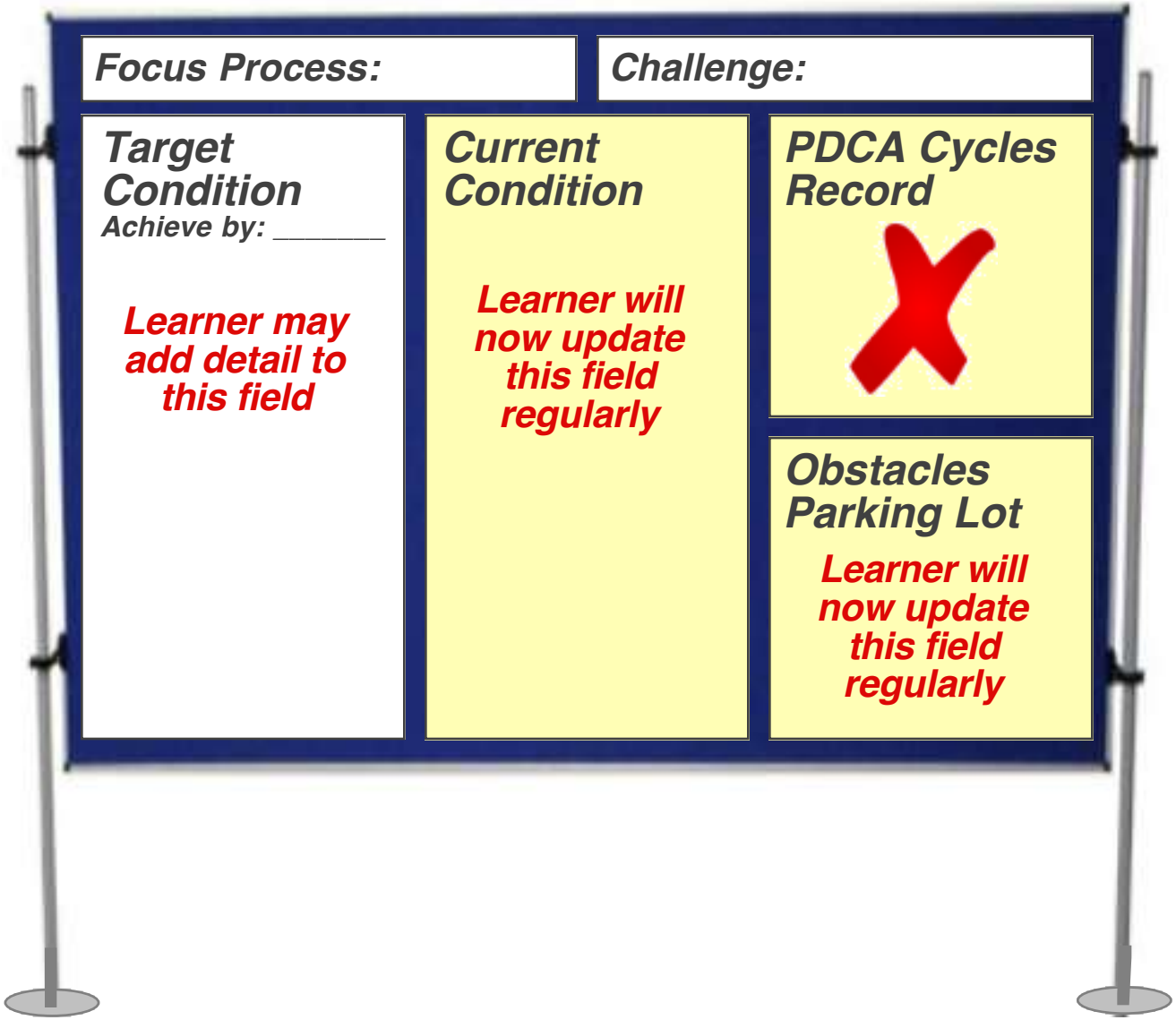





COACH

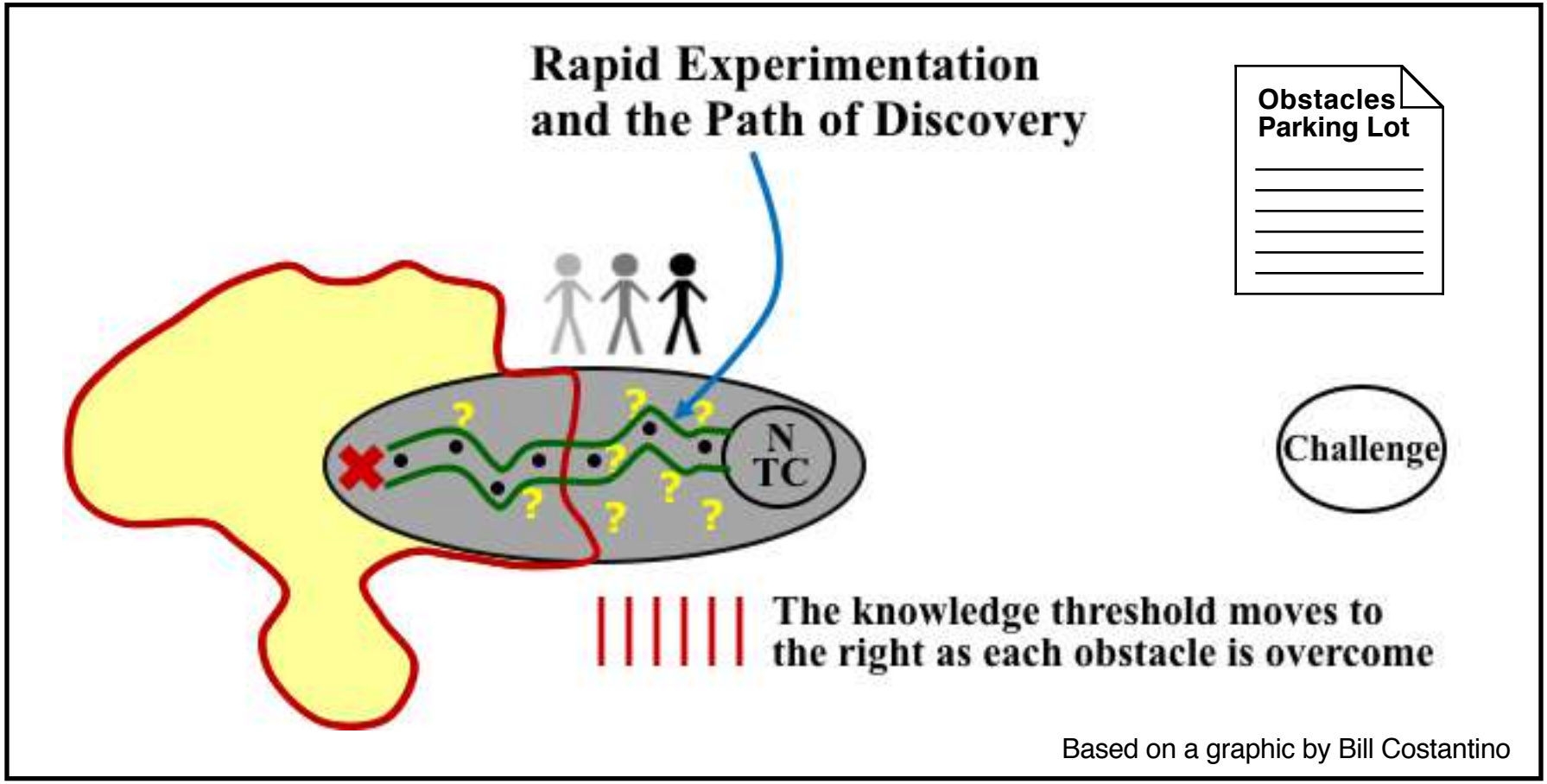
# LEARNER'S STORYBOARD

**The Learner is now concentrating on this field** 




Concept
Overview

# THIS CHAPTER GIVES YOU A STRUCTURED STARTER ROUTINE TO PRACTICE, THAT HELPS ANYONE LEARN HOW TO CONDUCT EXPERIMENTS THE RIGHT WAY



# NOW THAT YOU HAVE A TARGET CONDITION, HOW DO YOU GET THERE?

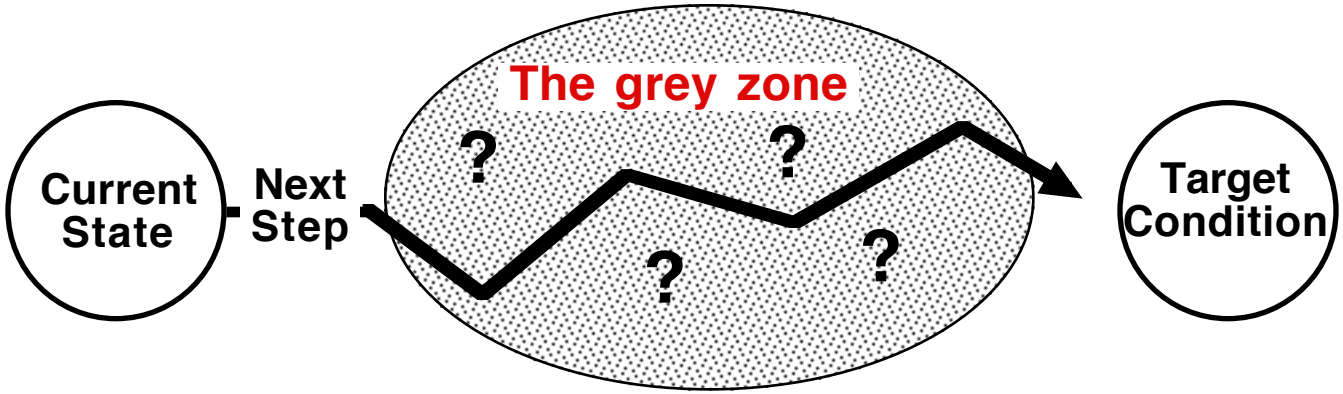


# Most Important:
# ASSUME THE PATH IS UNCLEAR

## Be open to steps other than those you thought would get you there

**We make plans and intend to execute them. But reality is neither linear nor predictable enough for this alone to be an effective means for achieving our Target Conditions.**

**With complex, dynamic 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.**




**The Target Condition you established in the last step is the setup and frame for experimenting -- at the point of your *advancing* Threshold of Knowledge. Progressing to the Target Condition boils down to acknowledging knowledge thresholds, testing, being receptive to learning and marshalling your team's ingenuity to adapt based on what you learn. This is the action of innovation!**

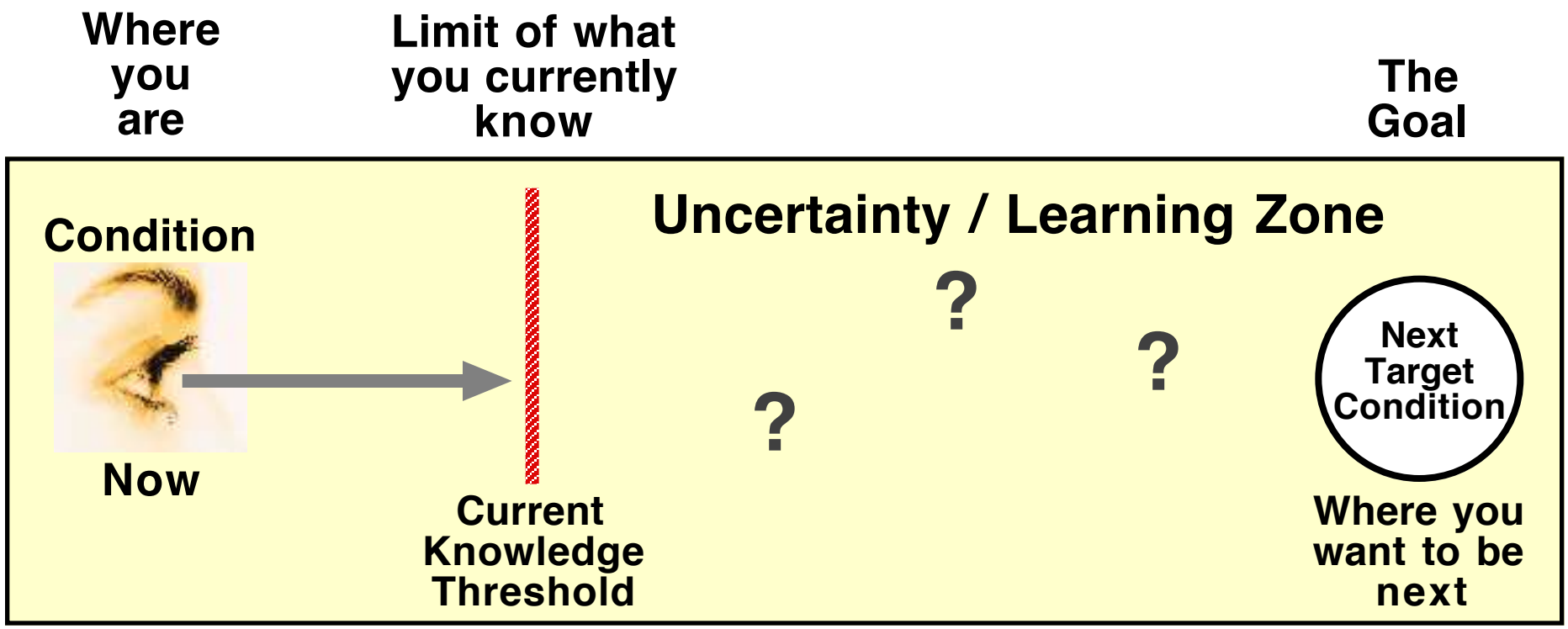
# TIME TO PUT ON YOUR SCIENTIST HAT...



# ...AND WATCH FOR KNOWLEDGE THRESHOLDS

# WHAT'S THE *THRESHOLD OF KNOWLEDGE*?

**It's the point at which you have no facts & data and start guessing**






***There's <u>always</u> a knowledge threshold, and it's closer than you think!***

***You never know for sure how you are going to get there until you get there.***

# SCIENTIFIC THINKING MEANS LEARNING ALONG THE WAY TO THE TARGET CONDITION

**Since the path to a challenging goal can't be predicted with exactness, we have to find that path by experimenting like a scientist. With each step and insight a scientist may adjust his or her thinking based on what has just been learned.**

**The scientific process can't tell us what's ahead. It only confirms or refutes the results of experiments.**

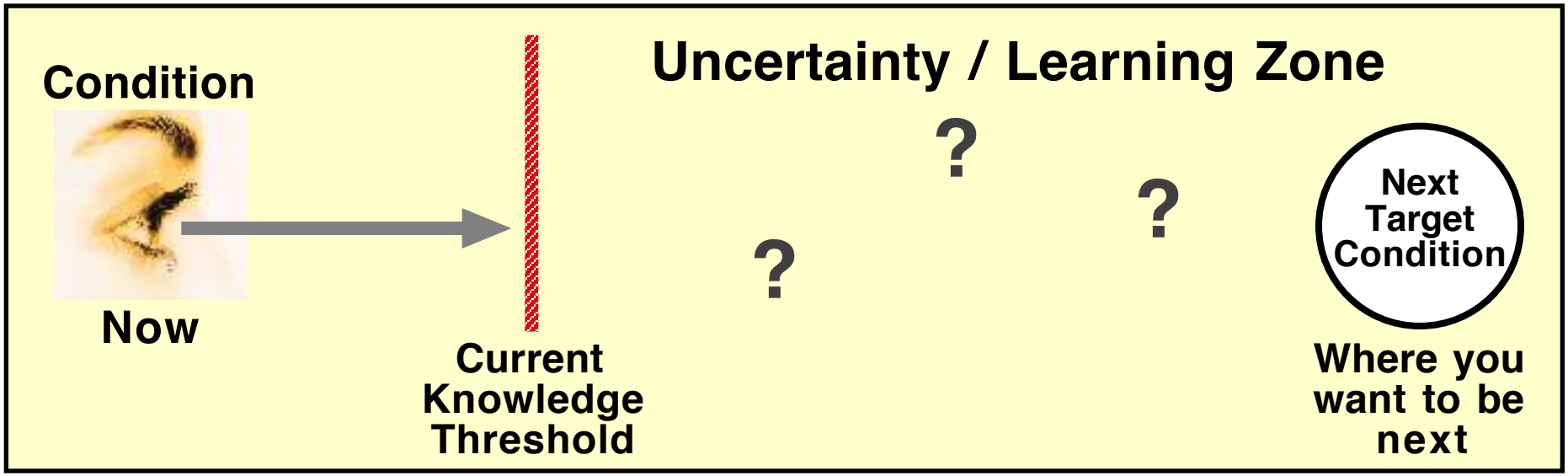
**A trick to making effective progress toward a challenging target condition is not to try to *decide* the way forward, but to *iterate* your way forward by experimenting as cheaply and rapidly as possible. This is the *action of innovation*.**

| | |
|---|---|
| **What we may think *scientific thinking* is** | **Objective and certain:** *"We have made the right plan"*   |
| **What *scientific thinking* really is** | **Always provisional:** *"Our plan is a hypothesis"*   |

# WHAT SHOULD YOU DO AT THE THRESHOLD OF KNOWLEDGE?

1) **Acknowledge it.** (Difficult to do, until you get in the habit.)
   Key realization: There's always a threshold of knowledge.

2) **Stop and see further by conducting an experiment.** Don't deliberate over answers. Deliberate over the next experiment: *What do we need to learn next, how will we test that and how will we measure it?*

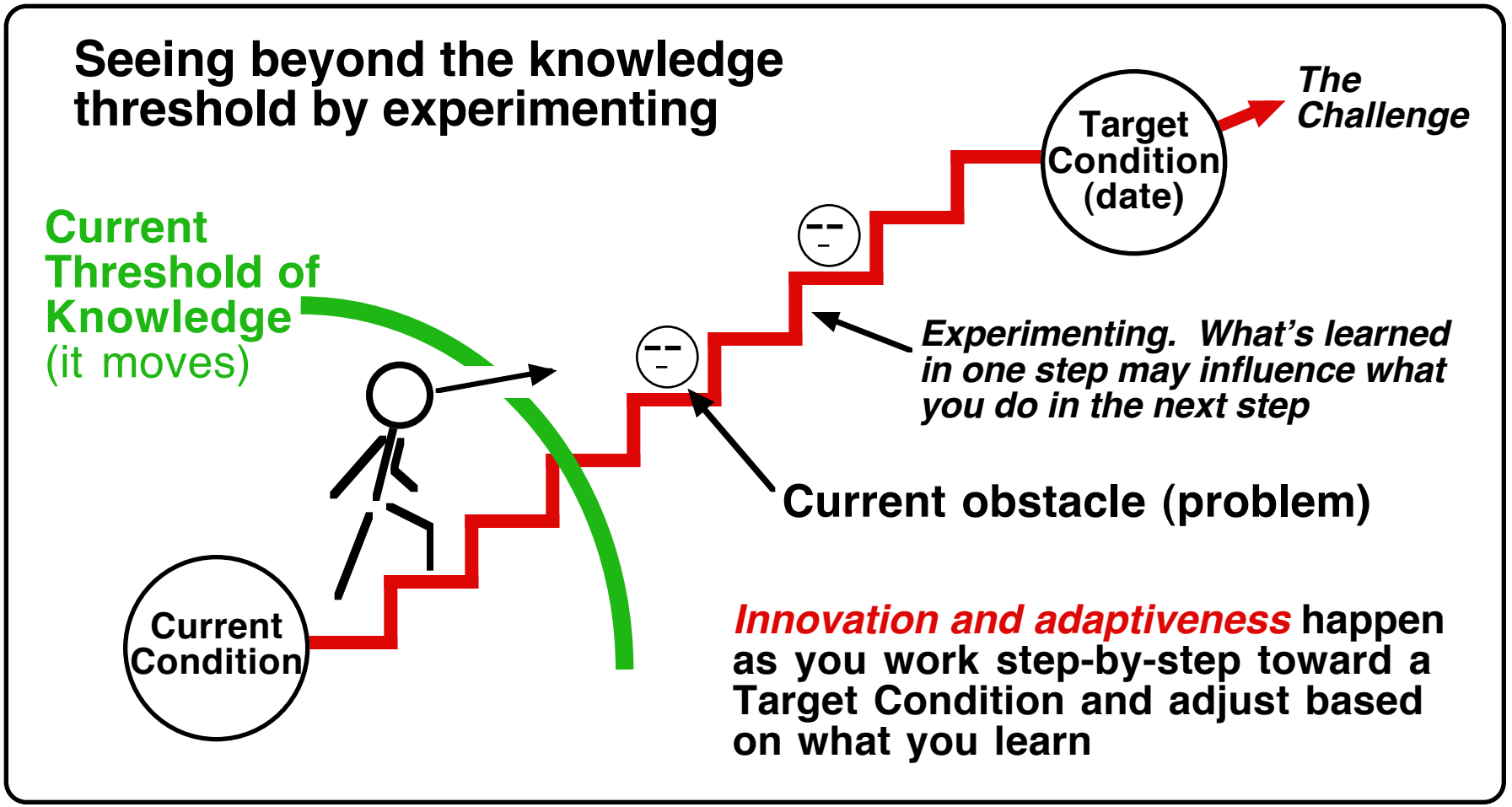



***The path can't be determined in advance through logic and debate***

# HOW TO WORK TOWARD THE TARGET CONDITION

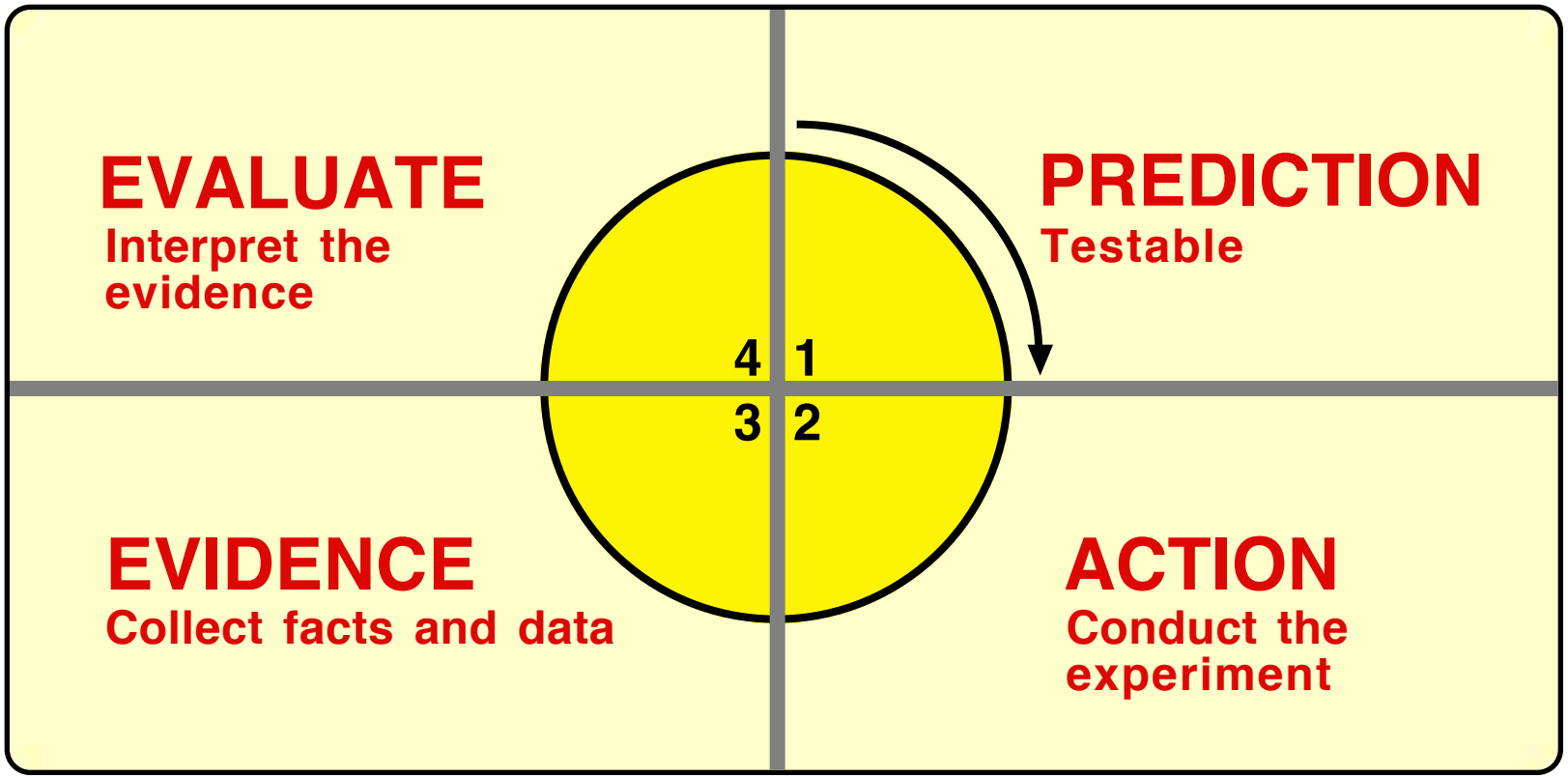
## Step at a time, with learning and adjustments along the way

**With the Improvement Kata you learn as you strive to reach the Target Condition, and adapt based on what you're learning. Find the route to the Target Condition by learning from experiments and focusing on the next step based on that learning. This is how the adaptive "Learning Organization" becomes a reality.**



# IT'S THE SCIENTIFIC LEARNING CYCLE

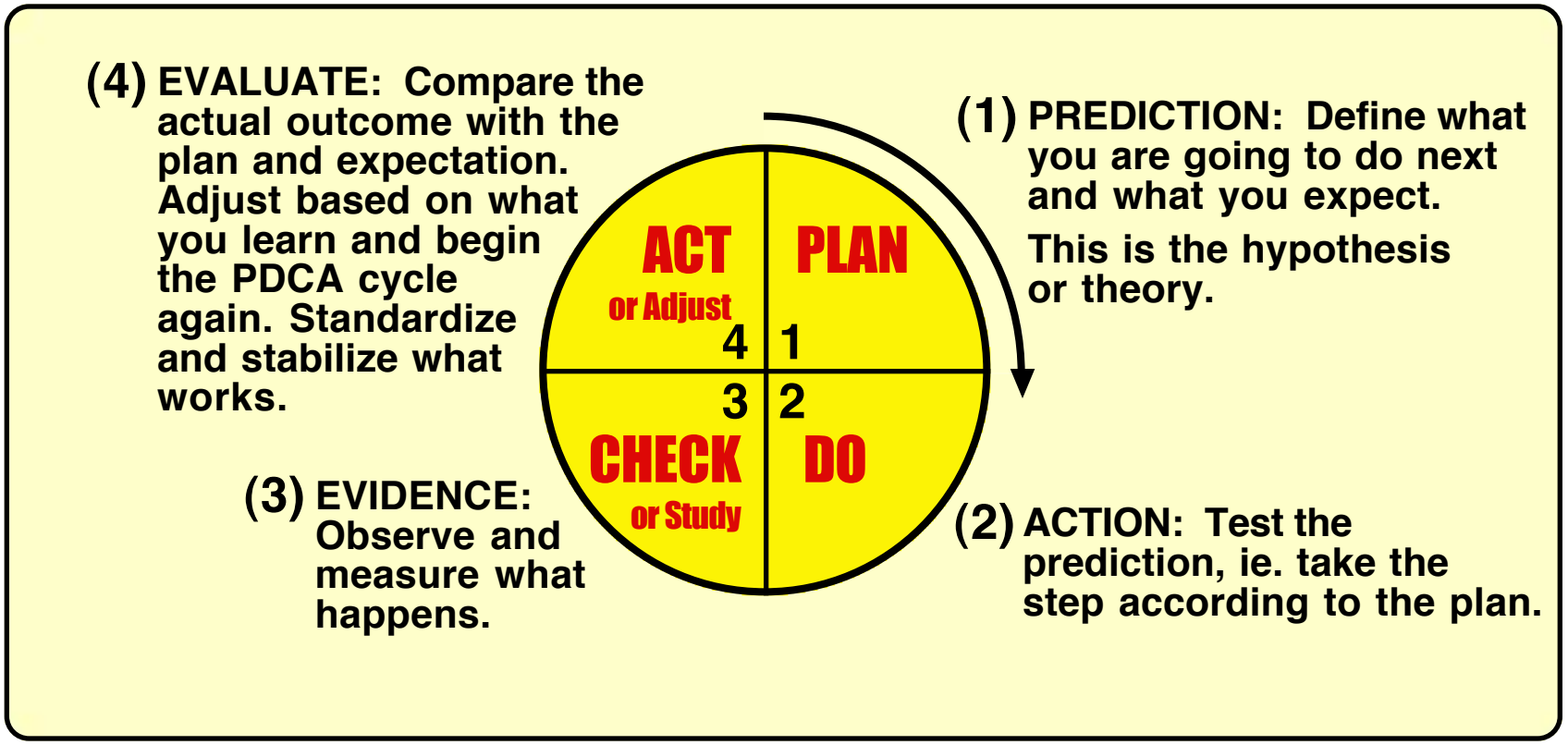
## Which is the scientific process of acquiring knowledge




**This cycle gives you a practical way to reach a Target Condition, by providing a systematic way of working through the uncertain 'grey zone' between here and there.**

# THIS CYCLE OF ITERATION IS OFTEN CALLED:

## "Plan-Do-Check-Act" (PDCA)
## -- or --
## "Plan-Do-Study-Adjust" (PDSA)




**Let's take a closer look at how PDCA actually works...**

# THREE KEY POINTS ABOUT PDCA






# PDCA IS NOT ABOUT IMPLEMENTING SOLUTIONS

## It's about learning what you will need to do to reach your Target Condition

**You and your team may think that nearly every step you take should bring a measureable benefit. Ironically, this mindset keeps you in the predictable zone and prevents you from really improving, adapting and innovating. You're only working with what you already know or think.**



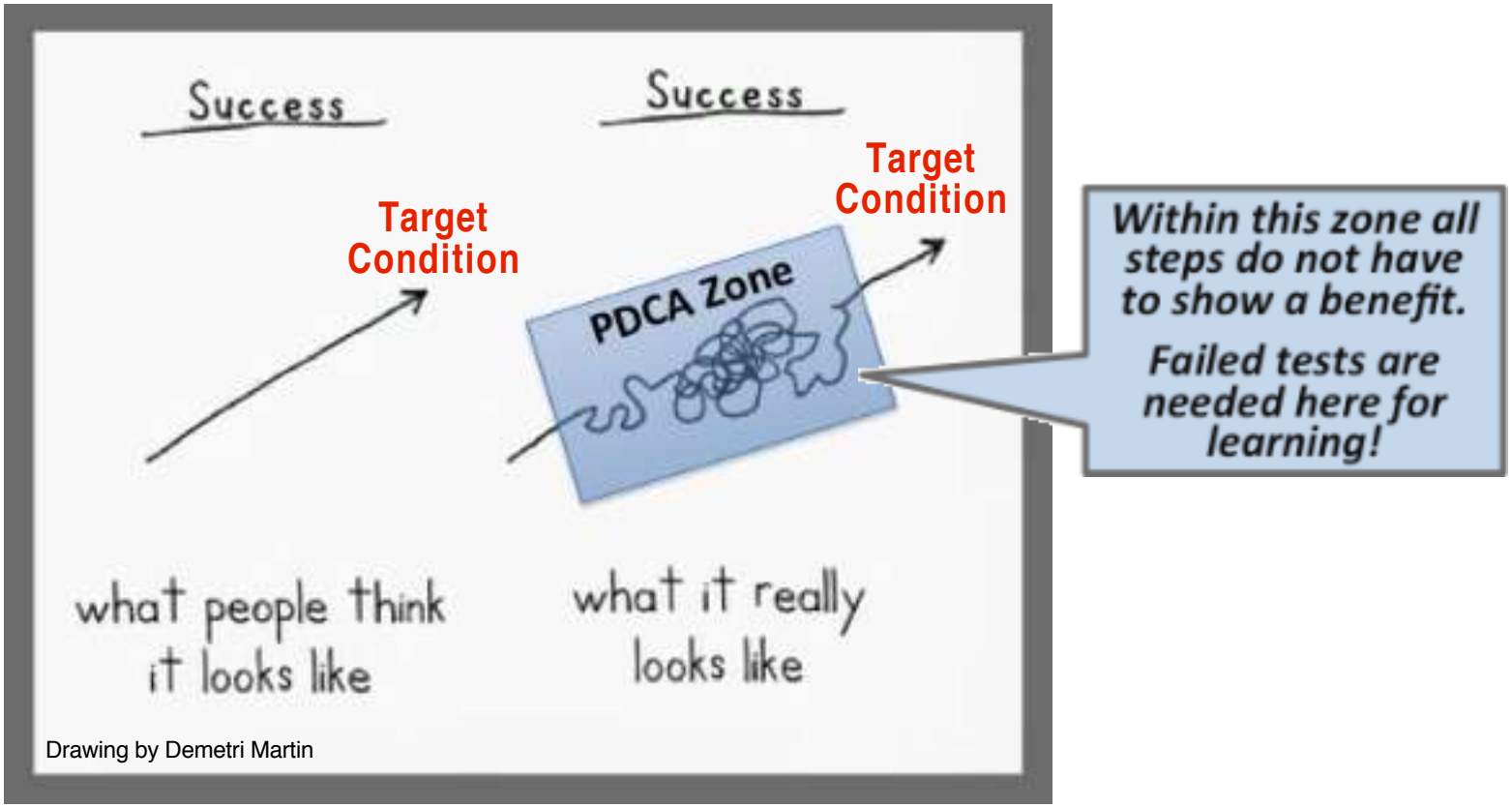
**In the scientific approach, every step does not bring a measureable benefit. Rather, it's the Target Condition (which has an achieve-by date and is measureable) that carries the benefit. The steps you take are the *learning process* you go through for getting there.**

# THE PATH TO THE TARGET CONDITION WILL NOT BE A STRAIGHT LINE

**The PDCA procedure is specified, but the path is not. Things will occur along the way that shift your thinking and cause you to revise your ideas. That's normal. The target condition remains the same, but the path shifts as you learn.**

**Failed predictions along the way are useful discoveries that show you what you need to focus on to achieve the target condition by the achieve-by date, and lead you to the next step. With each experiment the Learner learns a little more about what s/he needs to do to reach the target condition.**

**There must be room to make small errors and learn things along the way**



Key Point 2 about PDCA

# PREDICTION ERROR, OR *SURPRISE* IS A BIG PART OF HOW PDCA HELPS YOU LEARN AND IMPROVE



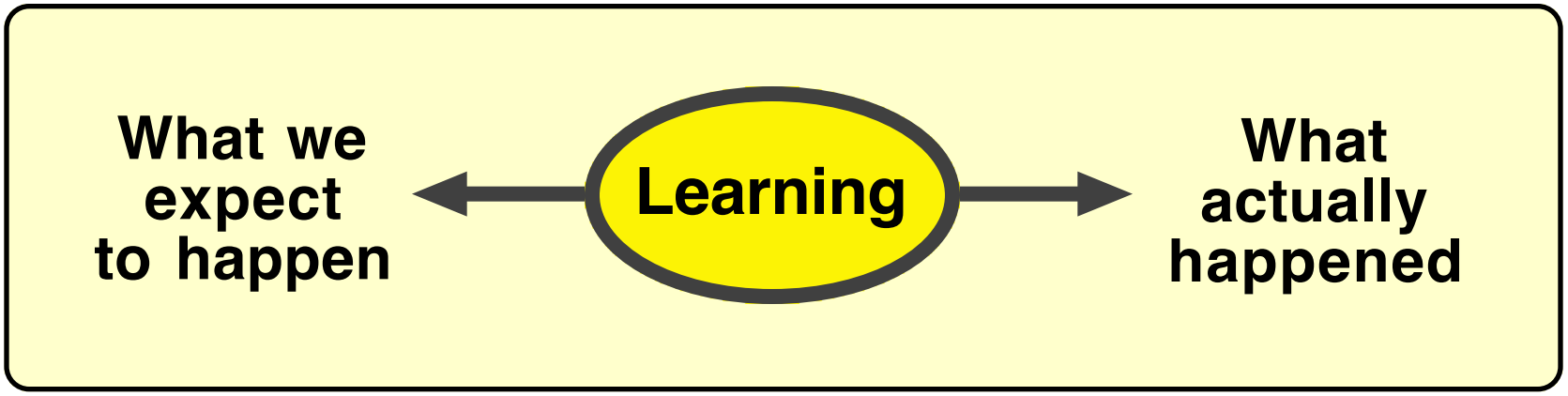

**Unexpected results (surprises) are very effective in driving learning. The Improvement Kata process seeks to use these lessons.**

**When a hypothesis is refuted this is in particular when you can gain new insight that helps you learn, improve, adapt and innovate. The purpose of PDCA is to generate surprises and thus opportunities for learning & progress toward the target condition.**




# THE CORE DYNAMIC OF SCIENTIFIC THINKING

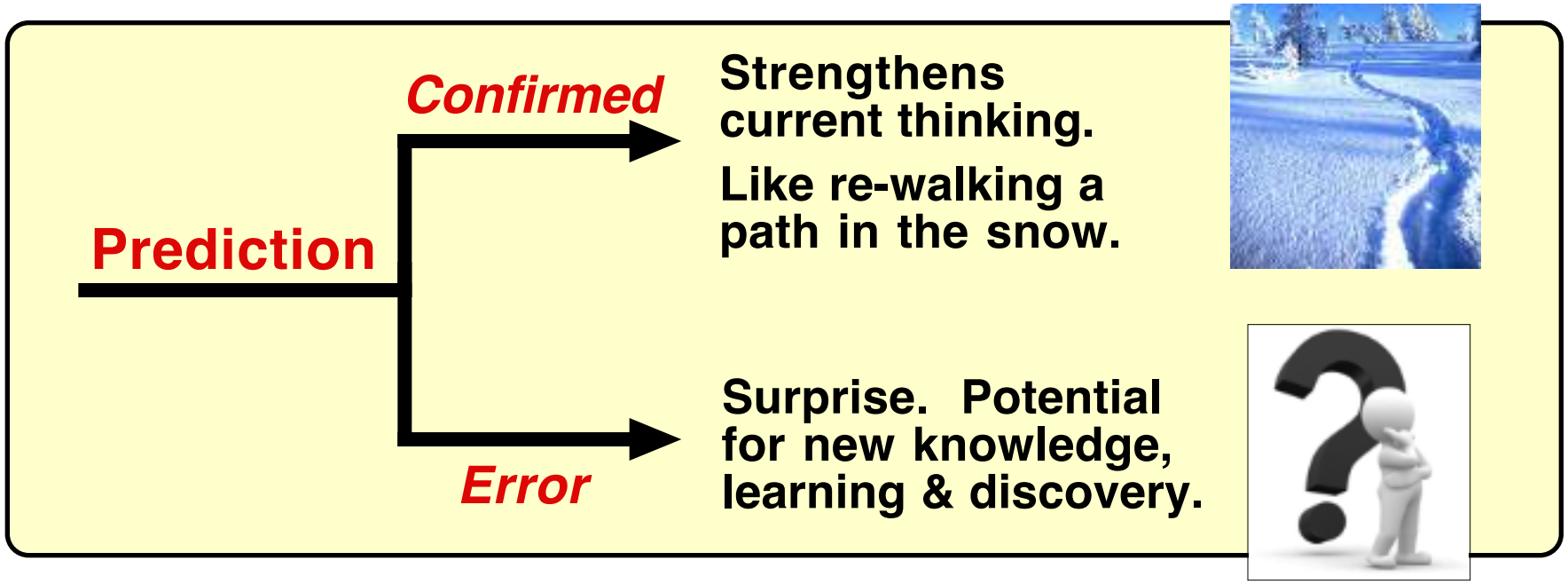
**Scientific thinking is a routine of intentional coordination between what we think will happen (theory), what actually happens (evidence), and learning from the difference. This is the dynamic that allows you to reach challenging new goals through unclear territory.**




**Of course, you need to be able to measure your experiment, so you can compare your prediction with the actual outcome.**

# HOW PREDICTION ERROR HELPS YOU PROGRESS TOWARD THE TARGET CONDITION

**When a result is as-predicted it confirms something you already thought. When a result is *different* than predicted you are about to learn something new.**



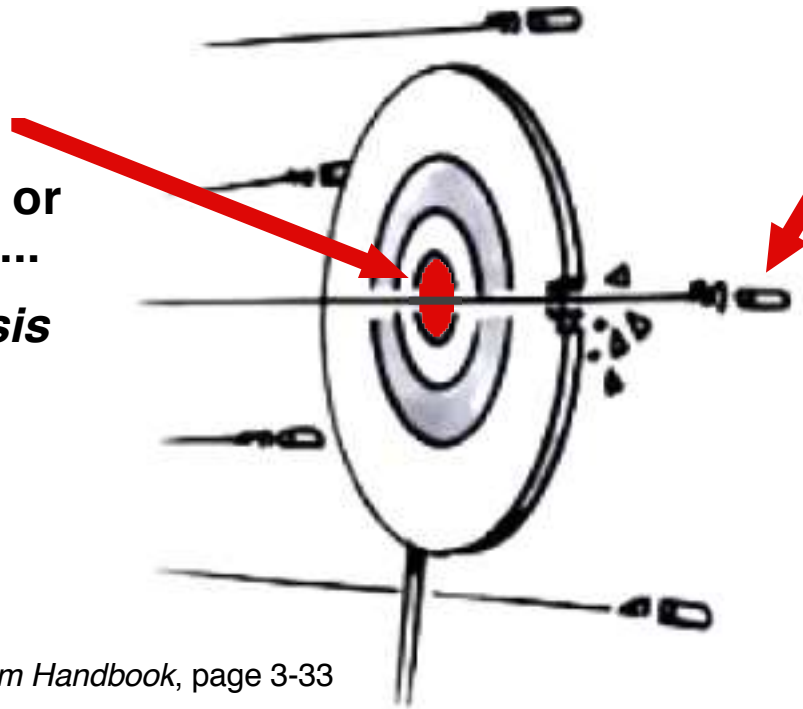

**Prediction confirmation holds you in place, while prediction error leads you out of your assumptions and forces exploration. When experimentation is done right, small failures often provide new insight that advance your design.**

*"If the result confirms the hypothesis, then you've made a measurement.*
*If the result is contrary to the hypothesis, then you've made a discovery."* ~ Enrico Fermi

# WE LEARN FROM REFUTED HYPOTHESES

**The "P" of PDCA is an expectation or a prediction...**

**...a *hypothesis***



**The "C" of PDCA is a reflection...**

***What are we learning from this?***

***What do we need to adjust?***

Illustration from *The Team Handbook*, page 3-33

**A refuted hypothesis is useful because it impels you to challenge your beliefs, learn and adjust your approach. Unexpected results redirect your thinking, forcing new interpretations and steps. When you reflect and attempt to understand why your prediction was inaccurate you discover new insights and build new knowledge.**

**This is because a refuted hypotheses reveals a *knowledge threshold.* When something other than what you predicted happens -- when a plan, step, belief or hypothesis turns out to be incorrect -- it makes a knowledge threshold visible & puts you at the *learning edge.***

# YOU NEVER ACTUALLY KNOW WHAT THE RESULT OF A STEP WILL BE

## This is a key mindset to learn




**A foundation of the Execution phase of the Improvement Kata is that whatever you think will happen with the next step is capable of being disconfirmed by evidence from taking that step. Without this capability there is little reason for conducting experiments.**

**Try to think of yourself as conducting experiments for the purpose of reconciling the new evidence you get from the experiment with what you were thinking when you planned the step. If you plan and take steps only to make something happen, rather than to test and potentially revise an idea, then your knowledge threshold won't change.**

**In an experiment you're primarily looking for facts and data that poke holes in your idea, not for confirmation of your idea. This may seem counterintuitive, but once you practice it will make sense and can be of great use.**

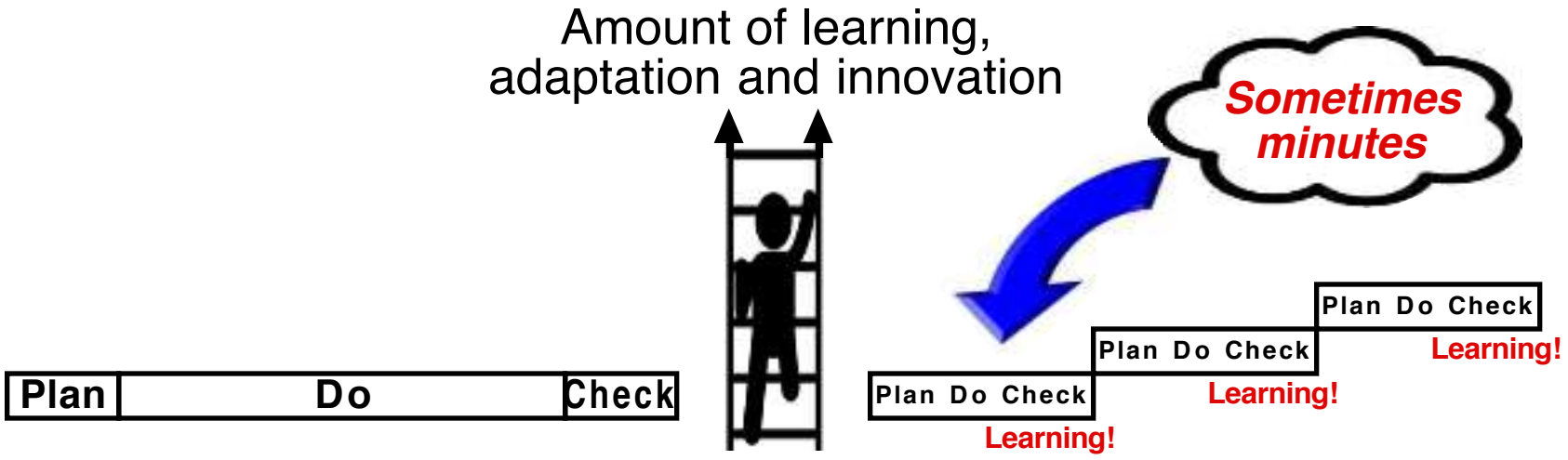
Key Point 3 about PDCA

# RAPID & FREQUENT EXPERIMENTS = MORE LEARNING

## Learn early, learn often

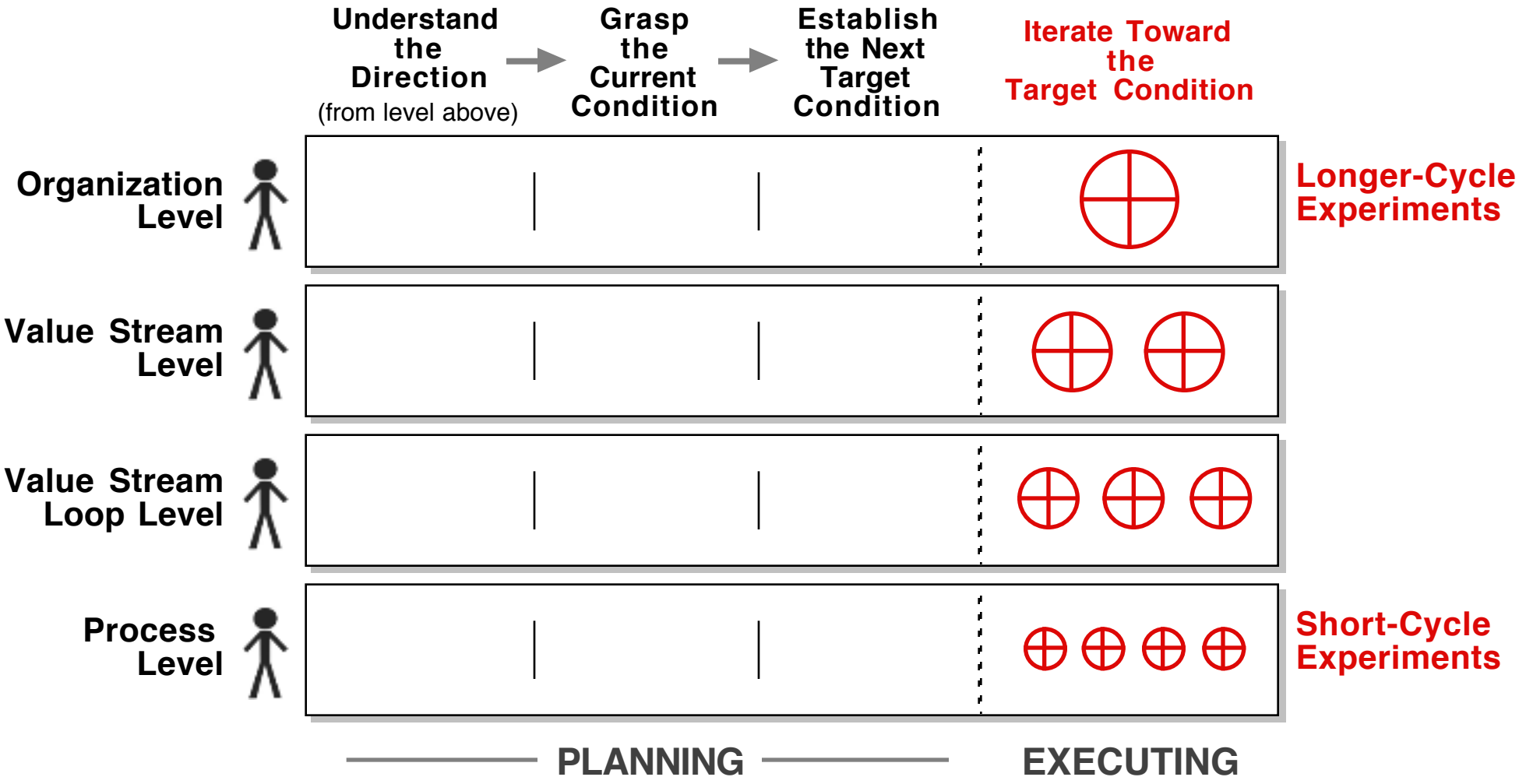
**If prediction *error* is how we learn, then ideally we want those errors to happen as soon as possible. Some of the most useful learning comes from short, cheap and frequent PDCA cycles (daily experiments). The Improvement Kata pattern is about testing and learning in as rapid and frequent cycles as possible.**

### Long PDCA cycles don't produce enough timely learning to activate team ingenuity



# AS RAPID & FREQUENT AS POSSIBLE

**The faster you are able to learn, the more successful you'll be in reaching the target condition. But how rapidly you can experiment may vary depending on the level in the organization**



# WHY RAPID & FREQUENT CYCLES?

**PDCA is used at all levels of an organization. However, the learning that is most useful for improvement, adaptation and innovation often comes from experiments at the process level. Why?**



**--> At the process level you pick up useful detail. Checks at a higher, macro level alone may lead only to conjecture about why something happened -- rather than useful, detailed facts and data for adaptation -- because at this level there are often too many variables in play to discern cause & effect.**

**--> At the process level there is often enough time to adjust and still reach the target condition in time. Checks at higher levels of granularity may come too late to do much about it.**

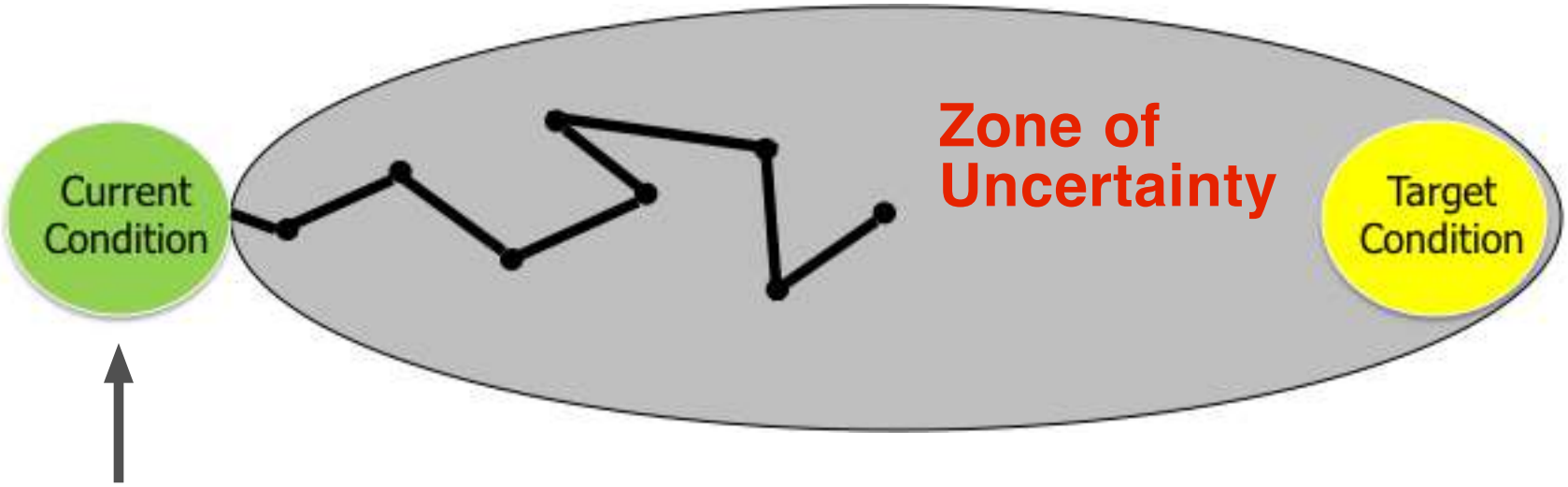
**--> Small, process-level PDCA cycles are experiments that can be done on a scale where failures (learning) are inexpensive and don't harm the customer.**

**Learning at higher levels often comes from agglomerating (bundling) the findings of experiments at the process level.**

# In Summary:

## STRIVE TOWARD THE TARGET CONDITION THROUGH ITERATIVE LEARNING

**Small, rapid experiments advance your knowledge quickly**




**YOU DON'T KNOW HOW TO GET FROM HERE TO THERE!**

Experimenting the right way



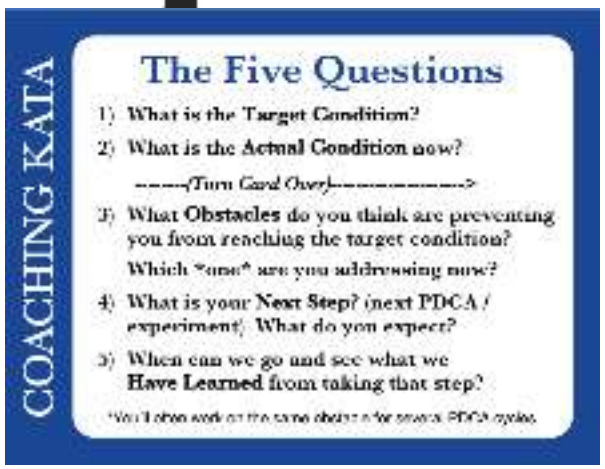
# Practice Routines

# TWO POWERFUL ROUTINES FOR ACHIEVING ANY TARGET CONDITION

**The Five Coaching Kata Questions (Coach) and the PDCA Cycles Record (Learner) are used <u>together</u>, in daily Coaching Cycles at the Learner's storyboard. Use these two routines to teach and foster systematic and effective experimentation. Follow these Kata exactly until you can internalize their patterns.**

**COACH**

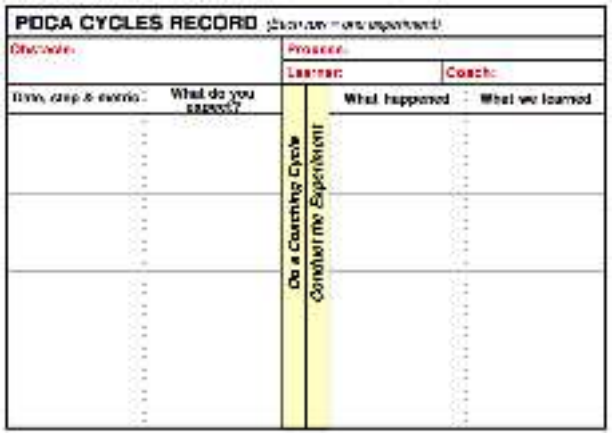
**The 5 Questions**




**Daily Dialog**

**PDCA Cycles Record**

**LEARNER**



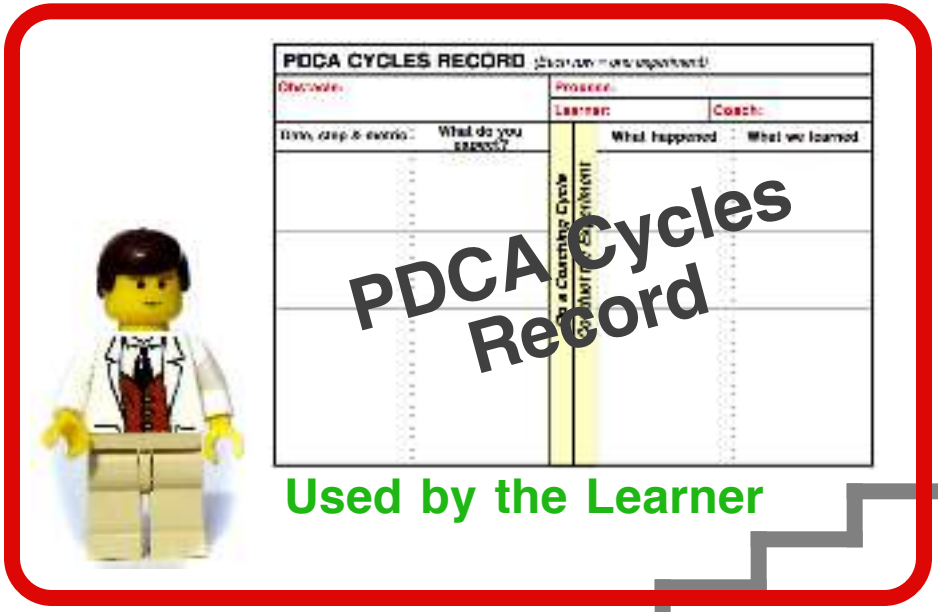

**The Coach asks the Five Coaching Kata Questions before each experiment the Learner conducts. How to use them is described in the <u>Part III</u>.**

**The PDCA Cycles Record is the Learner's main tool for planning the next experiment and reflecting on the last experiment. How to use it is described in <u>this chapter</u>.**

These forms are available in the Appendix & on the Toyota Kata Website

# THE LEARNER'S PDCA ROUTINE STEP-BY-STEP

## The following pages explain how the Learner should practice experimenting with the PDCA Cycles Record




This Chapter

Target Condition

Daily Dialog

Current Condition





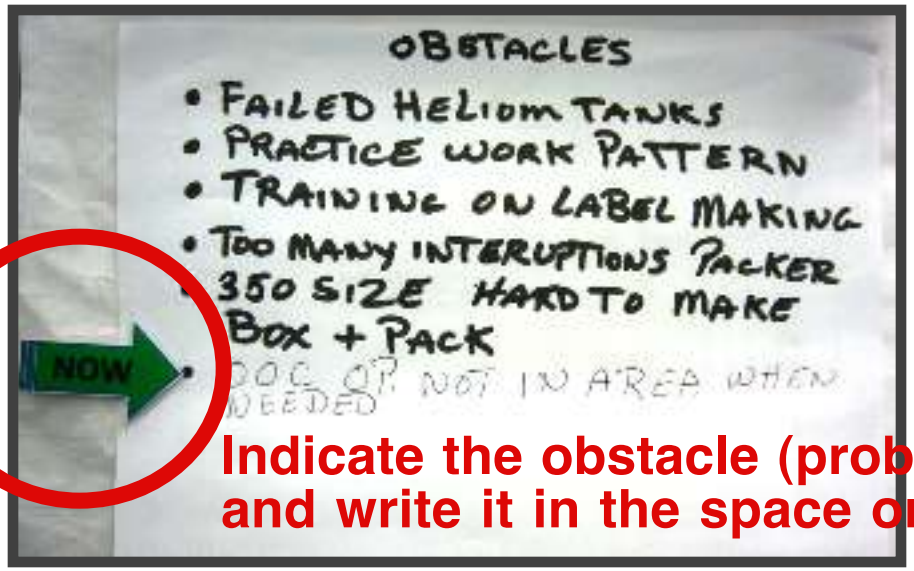

Part III

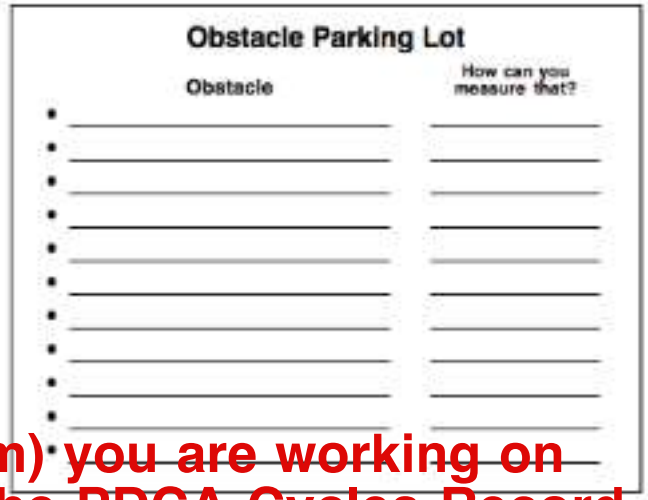
# FIRST, PICK ONE OBSTACLE AND WRITE IT ON THE PDCA CYCLES RECORD

**Do your experiments against <u>one</u> obstacle. Put an arrow on the Obstacles Parking Lot to indicate visually what obstacle is currently being experimented against, and write this obstacle in the space provided on the PDCA Cycles Record.**

**You are free to select whatever obstacle you want. You don't need to start with the biggest obstacle. In fact, for Improvement Kata beginners it's better to not tackle the biggest obstacle right away so the Learner can first develop some skill and self-efficacy.**

**It doesn't matter where you start because once you get going you're locked into the chain of PDCA cycles, where what you learn in one step leads to the next step. The obstacles that you will need to work on will wait patiently until you encounter them. If you pick a wrong obstacle that will soon make itself known through your experiments.**

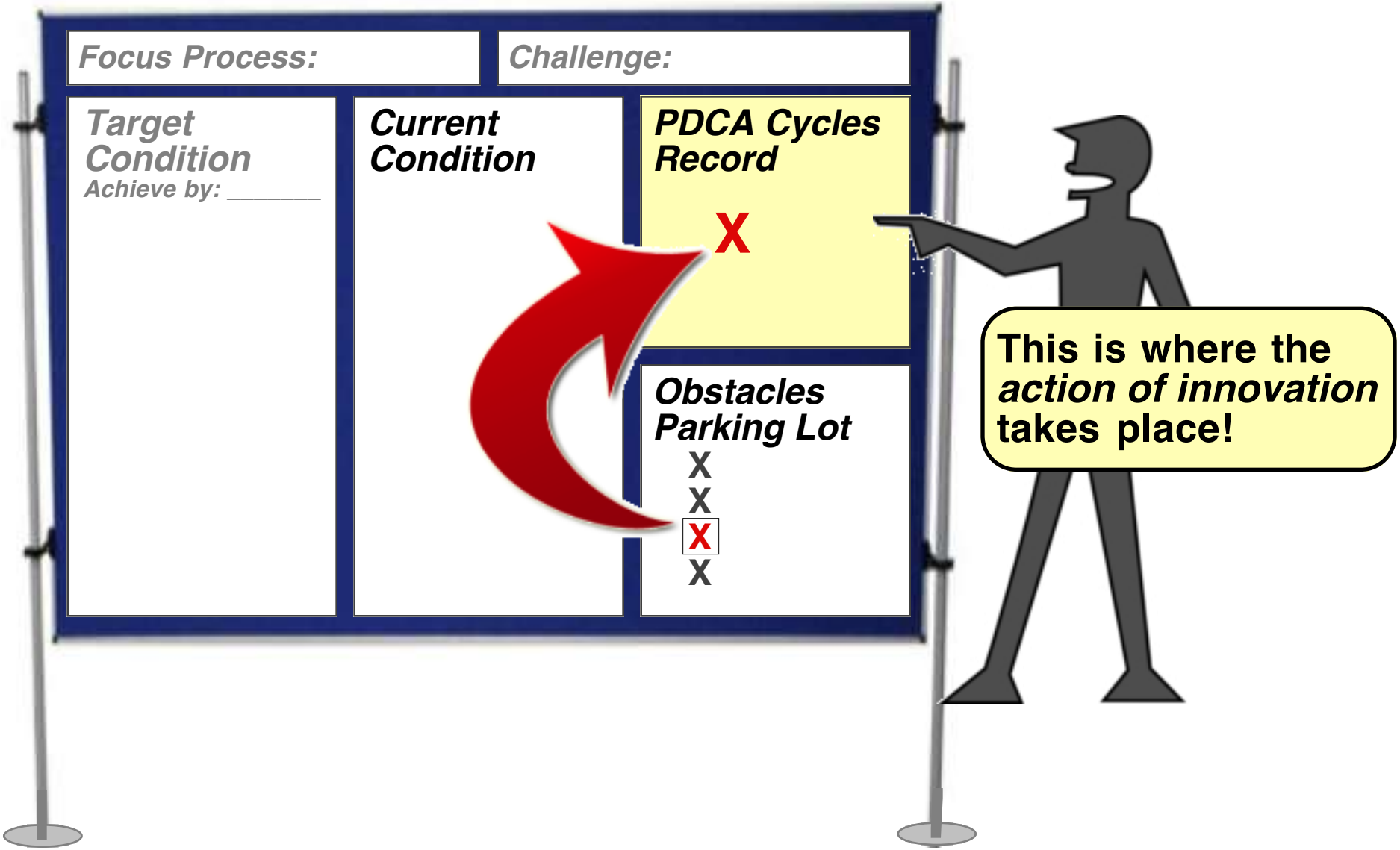



**Indicate the obstacle (problem) you are working on and write it in the space on the PDCA Cycles Record**

# YOU'RE MOVING ONE OBSTACLE AT A TIME UP THE STORYBOARD

## What problem are we working on now?



# THE LEARNER'S PDCA CYCLES RECORD

## PDCA CYCLES RECORD *(Each row = one experiment)*

**Obstacle:**

**Process:**

**Learner:**

**Coach:**

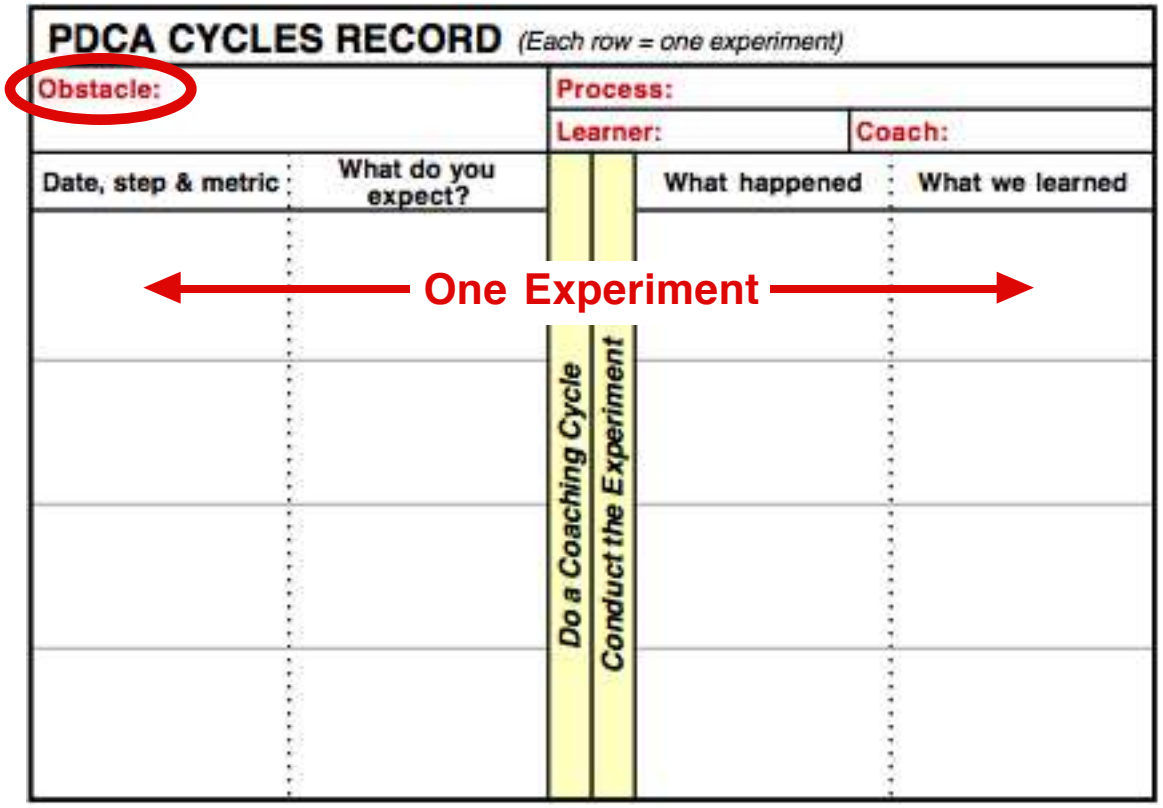
| Date, step & metric | What do you expect? | *Do a Coaching Cycle* | *Conduct the Experiment* | What happened | What we learned |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

# LAYOUT OF THE PDCA CYCLES RECORD

## The PDCA Cycles Record is the Learner's main tool for communicating (a) the plan for the next experiment and (b) the reflection from the last experiment

- **Each PDCA Cycles Record form is dedicated to one obstacle. It usually takes a series of experiments to overcome an obstacle. When the Learner starts working on a new obstacle, s/he should start a new PDCA Cycles Record.**
- **Each row represents one experiment against the current obstacle.**
- **The form has a 'Prediction Side' and an 'Evidence Side'**

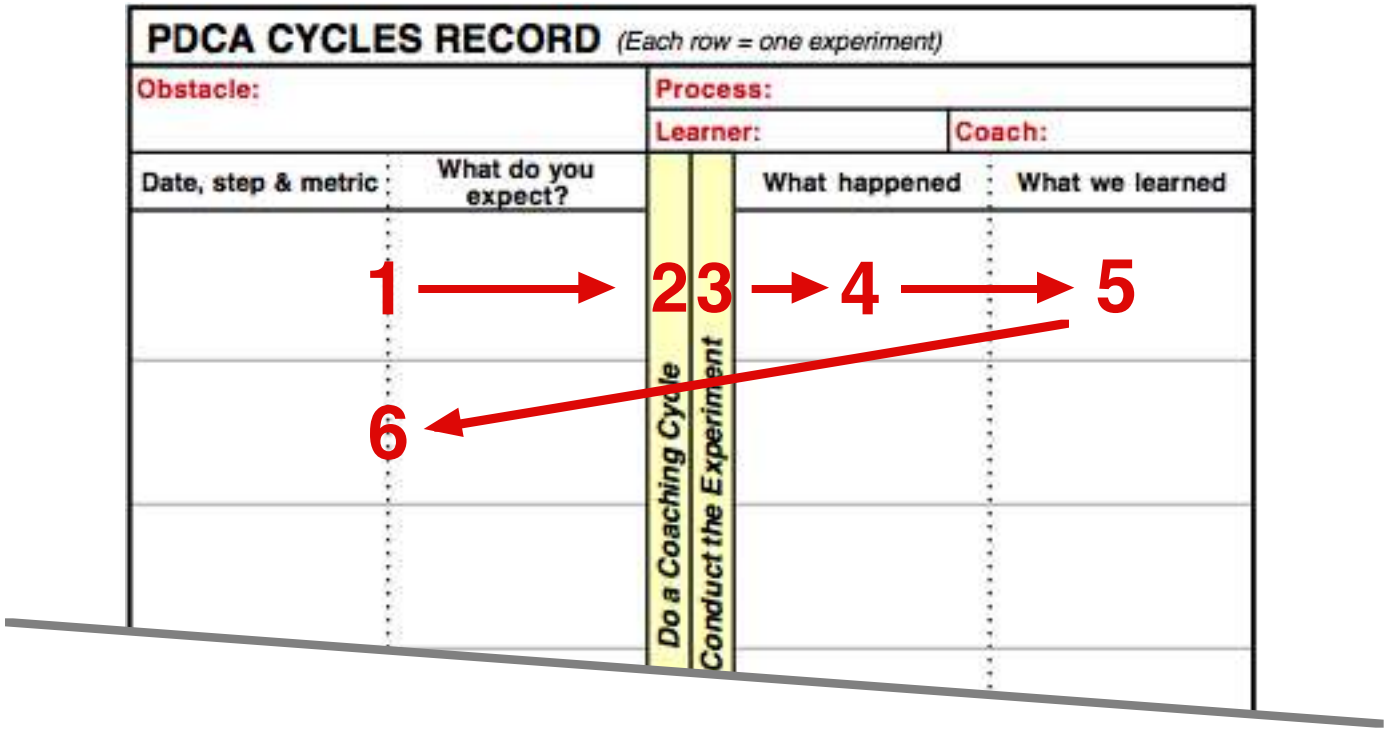
***This is the obstacle to the Target Condition, that the Learner is currently working on***




**The information on the PDCA Cycles Record is written by the Learner *before* the next coaching cycle.**

**During the coaching cycle the Coach will either accept the proposed next step (next experiment), or give feedback to help improve the design of the next experiment.**

# THE STEPS FOR USING THE PDCA CYCLES RECORD



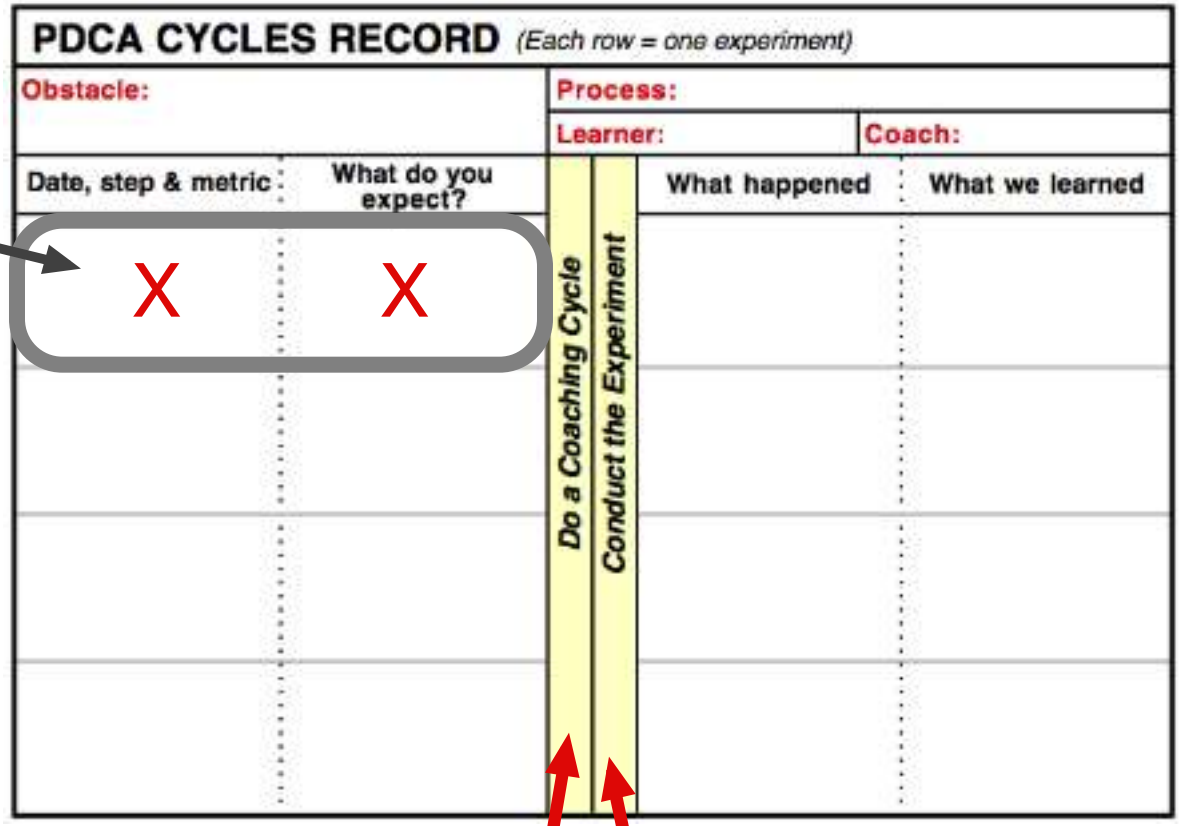

1. Plan the experiment, indicating the date, the proposed step, how it will be measured and the predicted result.
2. **Go through a Coaching Cycle.** The Coach gives feedback on the design of the next experiment as necessary. Make adjustments based on the Coach's input.
3. Conduct the experiment.
4. Record the facts and data about what actually happened.
5. Reflect on the outcome of the experiment by comparing the predicted result with the data, and summarize what was learned.
6. Propose the next experiment (date, step, metric & predicted result) based on what was learned.

# STEPS FOR USING THE PDCA CYCLES RECORD

**The PDCA Cycles Record is read left-to-right, one row at a time. Each row = one experiment. Once you get started, the pattern of the form repeats after each experiment.**

① **PREDICTION SIDE:**
***Before the first coaching cycle the Learner proposes the 1st step, what will be measured, and what s/he expects in the first two boxes of the form***

**THRESHOLD OF KNOWLEDGE:**
- **What do we need to learn now?**
- **How will we test it?**
- **How will we measure it?"**

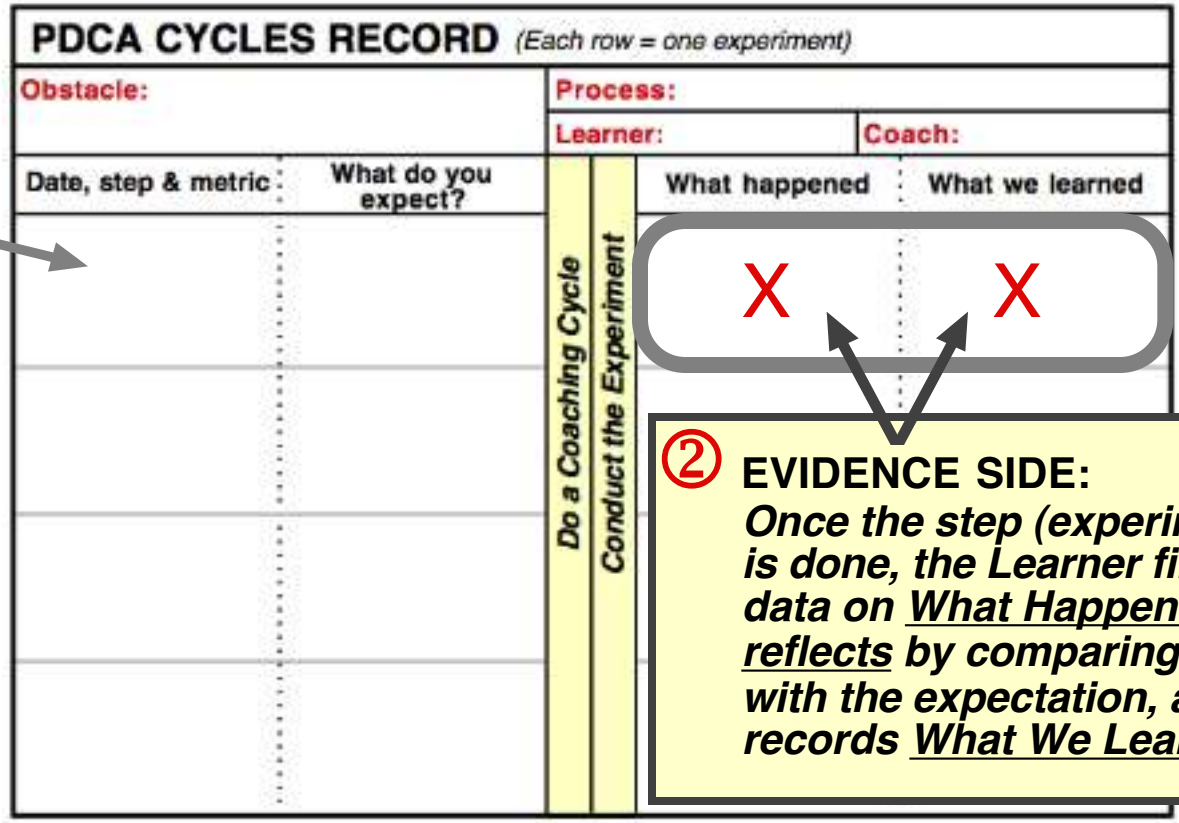



**Now the Leaner and Coach do a coaching cycle**

**Then the Learner conducts the experiment**

# STEPS FOR USING THE PDCA CYCLES RECORD

① **PREDICTION SIDE:**
*Before the first coaching cycle the Learner proposes the 1st step, what will be measured, and what s/he expects in the first two boxes*

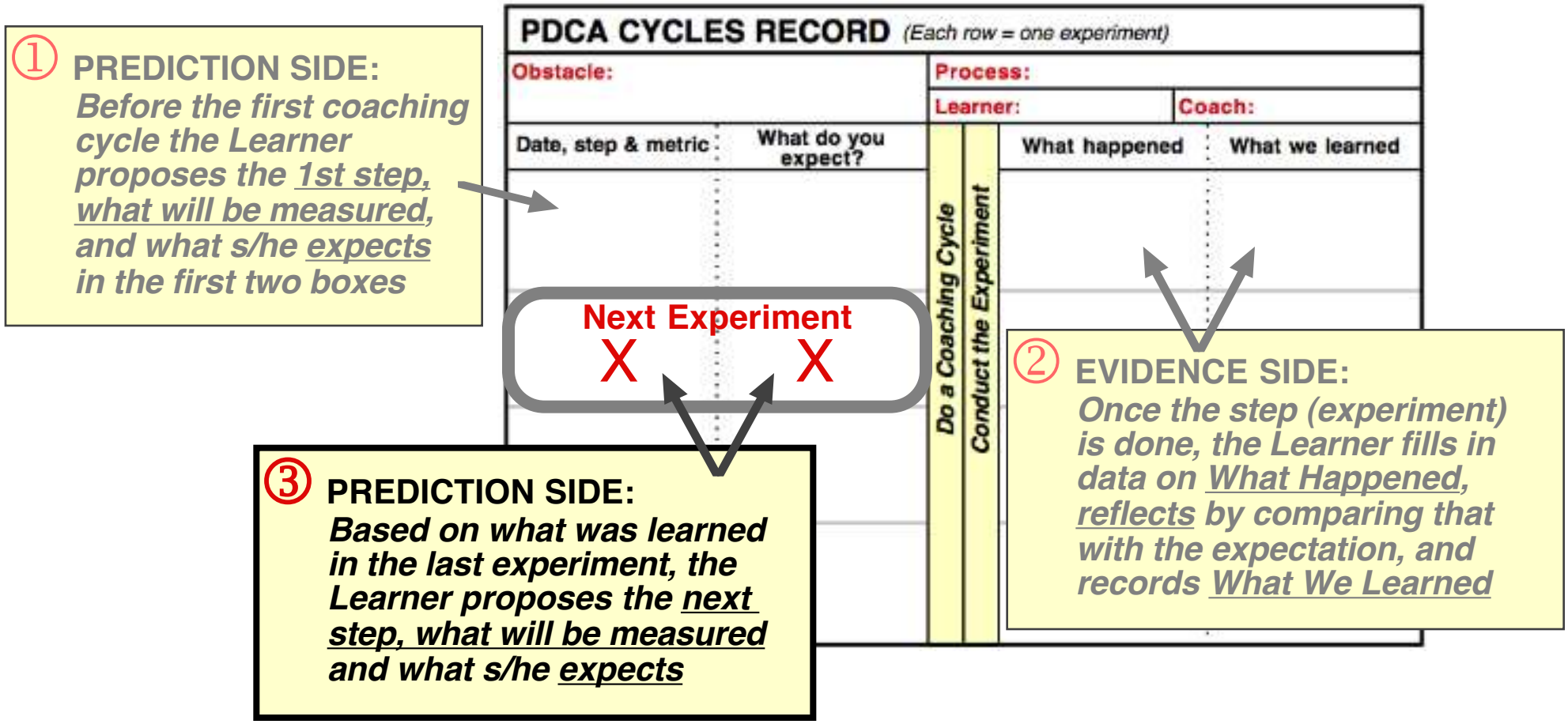



② **EVIDENCE SIDE:**
*Once the step (experiment) is done, the Learner fills in data on What Happened, reflects by comparing that with the expectation, and records What We Learned*

**Reflect on the data, observations and even how you took the step. What went differently than you expected?**

**In checking the results of an experiment try to measure and observe several cycles of the process.**

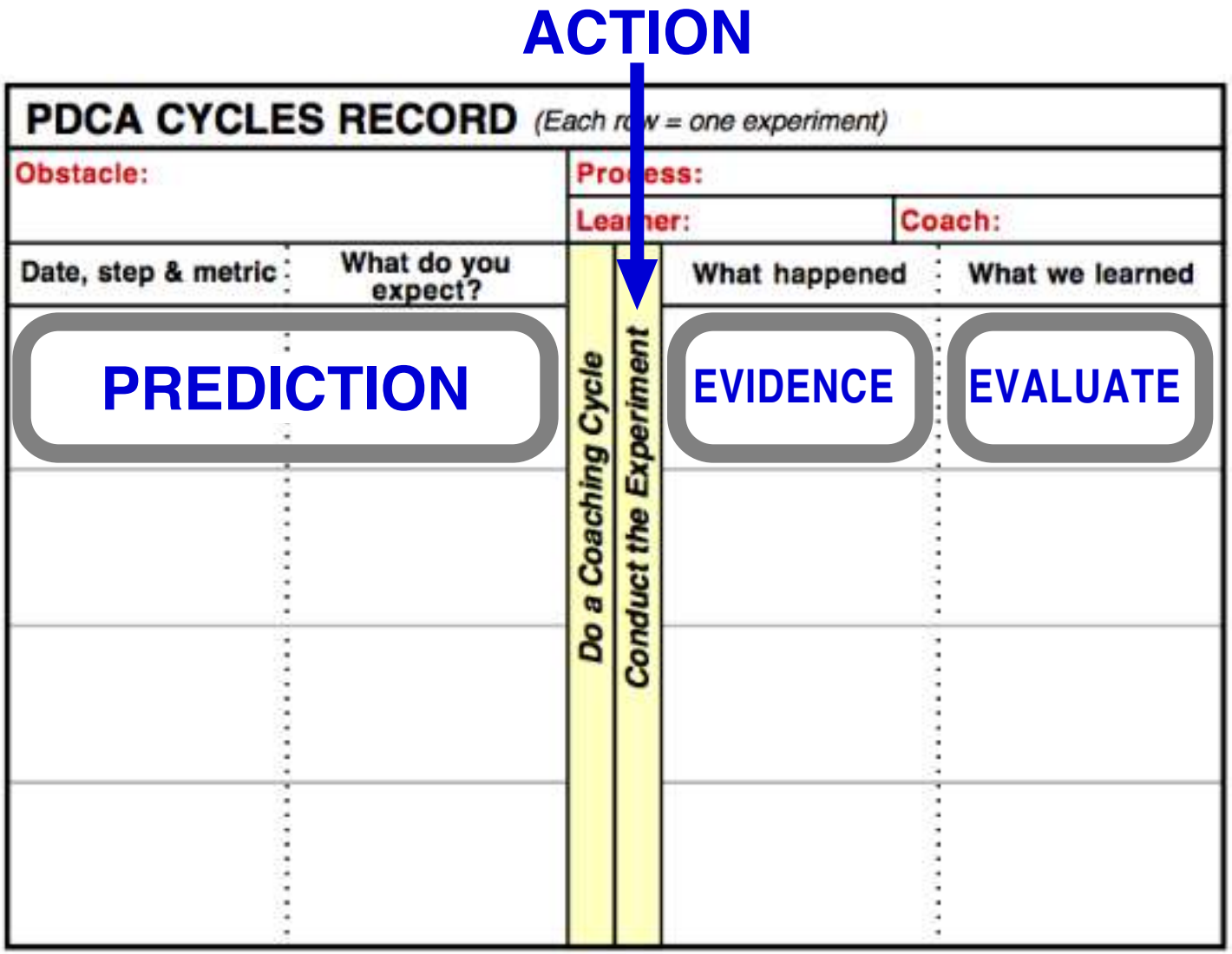
# STEPS FOR USING THE PDCA CYCLES RECORD




**Now it's time for the next coaching cycle**
**(and making adjustments based on the Coach's input)**

# THE SCIENTIFIC LEARNING CYCLE IS EMBEDDED IN THE PDCA CYCLES RECORD

## To make the cycle easy to operationalize & practice



# EXPERIMENTING GUIDELINES FOR THE LEARNER



**INCLUDES CHECKLISTS FOR PLANNING & EVALUATING YOUR EXPERIMENTS**

# CHECKLIST FOR PLANNING AN EXPERIMENT

- ❑ **Conduct experiments against an obstacle to the Target Condition, not randomly.**
- ❑ **What do you need to learn now? Identify your current Threshold of Knowledge and conduct the next experiment there.**

  **What is the current TOK? _____**
- ❑ **How will you test your idea? Can you do a single-factor experiment, where only one thing is changed? (Not always possible)**
- ❑ **How can you test your prediction as soon and quickly as possible? Simple & soon is better. How about now? (*Hold* before *tape* before *weld*)**
- ❑ **Make sure that failure won't harm anyone or anything. If necessary build up a buffer before conducting the experiment or conduct the experiment offline in a simulation.**
- ❑ **Write onto the PDCA Cycles Record what you expect to happen (your prediction) *before* you do the experiment.**
- ❑ **How will you measure it? The experiment must be measureable in some way, so you can determine if the prediction was confirmed or refuted.**
- ❑ **If possible the experiment should build on what was learned in your previous experiment.**
- ❑ **In order to learn from your experiment you must be open to and willing to see that the result may not conform to your expectation. Own it!**

# CALIBRATE YOUR TEAM BEFORE EXPERIMENTING

**--- Ask your team: "*Why do we experiment?*" ---**

**It's not: *Let's see if this idea works***

**But rather:**

***Let's see what <u>doesn't</u> work, so we can see what we need to do to make it work***

**This is what many of us mistakenly think *experimenting* is about**




***GOOD THINGS TO SAY:***

***"We already know it won't work at first. We're interested in seeing what doesn't go as planned, so we can learn what we need to work on."***

***"Don't be discouraged when an experiment fails. That's how we learn!"***

# EXPERIMENT AT THE *KNOWLEDGE THRESHOLD*

## Create new learning where the facts run out



This is where you should do your next PDCA experiment

**Predictable Zone**



**Uncertainty / Learning Zone**

Experimenting

Next Target Condition

Current Knowledge Threshold



**Spot the knowledge threshold, acknowledge it, and conduct your next PDCA experiment here as quickly as possible!**

# DO YOUR TESTS INSIDE THE *EXPERIMENTING ZONE*

**The Target Condition is measureable and has a firm achieve-by date. There are budget constraints and quality & safety parameters.**




**It's *within* these boundary conditions that you design and conduct frequent, rapid, cheap, non-harmful, successive experiments toward the target condition. Experiments are done as cheaply and quickly as possible. For example, think *hold* before *tape* before *weld*.**

**It's important that there is no penalty for failures inside the Zone. Failed experiments here are often how we learn & progress.**

# NOTE THAT THE STEPS YOU ACTUALLY TAKE WON'T COME FROM AN ACTION-ITEM LIST



**A chain of PDCA cycles**

***VERSUS***



**A preconceived action-item list**

**Most of the day-to-day steps you take toward the target condition won't come from a pre-determined action plan, Pareto analysis or brainstorming. They come from the chain of rapid and frequent PDCA cycles, where what you learn in one step often leads you to your next step.**

**Do not stab at an obstacle with disconnected countermeasures in the hope that something will work. Instead, this is how you iteratively work toward and find your way to the target condition by the achieve-by date:**

**(1) Only work on those obstacles that you sequentially find are actually preventing you from reaching the target condition.**

**(2) Try to work on one obstacle at a time. Plan your steps and reflect on them with the PDCA Cycles Record.**

**(3) From each experiment related to the current obstacle you'll gain new information. Use this information to adjust and define your next step toward breaking through the obstacle. Then choose the next obstacle.**

**(4) Keep in mind that the target condition's achieve-by date is firm. Do your experiments as fast and frequently as possible.**

# THE NEED TO TEST

**Use whatever information and knowledge you can in order to design your experiments toward the target condition. This includes existing information such as research results.**

**However, keep in mind that even if you reference existing information, what will end up working for your specific case and target condition is still a grey area where you need to iterate. The information you use, regardless of its source, needs to be tested and verified within the context of your current and target conditions.**






# IF POSSIBLE
# DO SINGLE-FACTOR EXPERIMENTS

## Also called "Controlled Comparison"

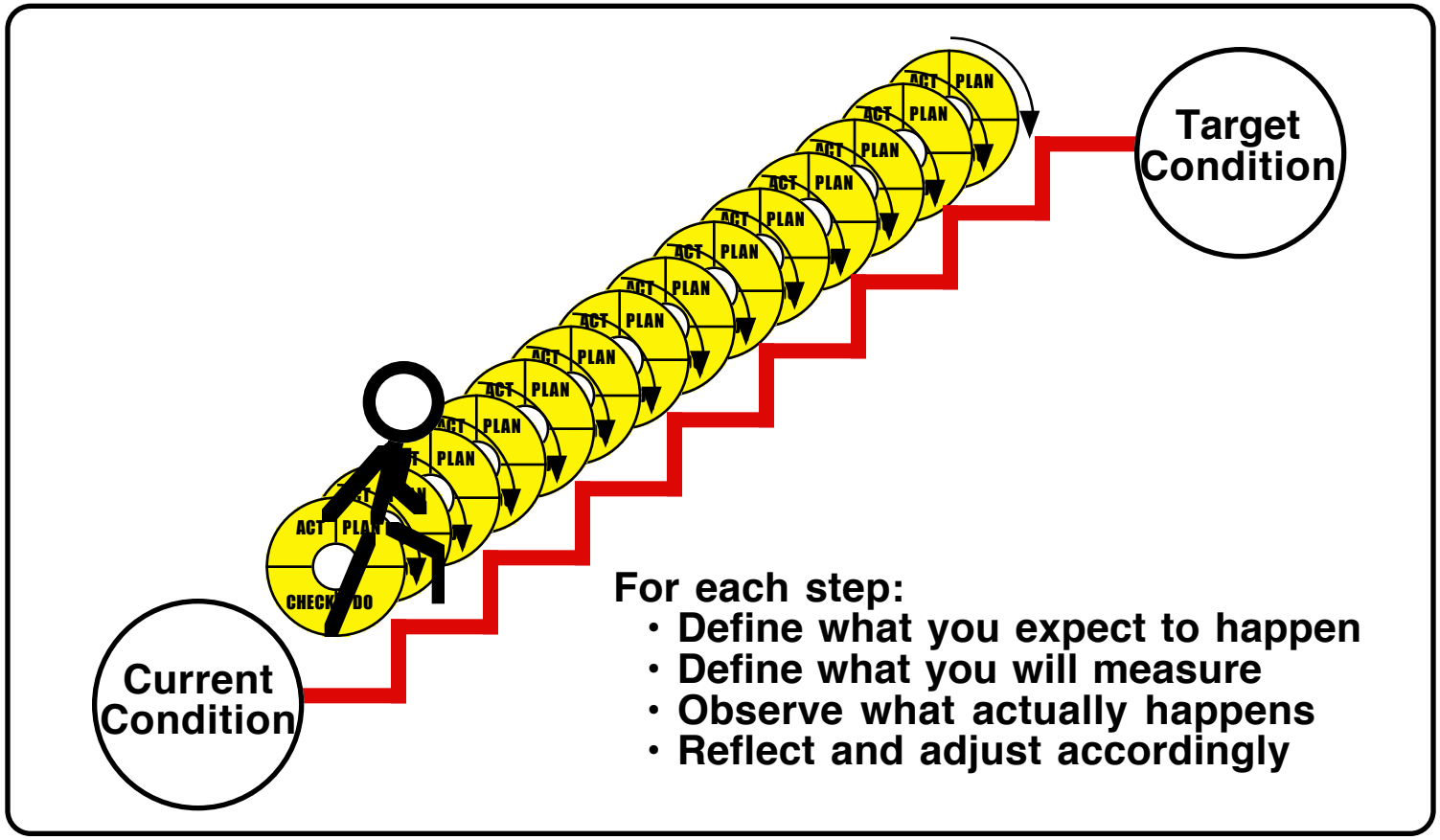


**Try to change only one thing at a time and then check the result against the expected result. Such "single-factor experiments" are preferred because they allow you to see and understand cause and effect, which helps you develop a deeper understanding of the process you're trying to improve. The goal is to learn about the focus process, not just to shut off a problem via a shotgun blast of countermeasures.**

**Of course, serial rather than parallel countermeasures would be too slow if each PDCA cycle takes a long time. This is another reason why individual PDCA cycles should be turned as quickly as possible.**

**Single-factor experiments are not the only kind of experiment and not always possible. The table on the next page describes three common types of PDCA experiments.**

# EACH STEP YOU TAKE = A PDCA CYCLE




**A PDCA cycle may take only minutes. Suppose we decide, in pursuit of a target condition, to move some work elements from one operator to another.**

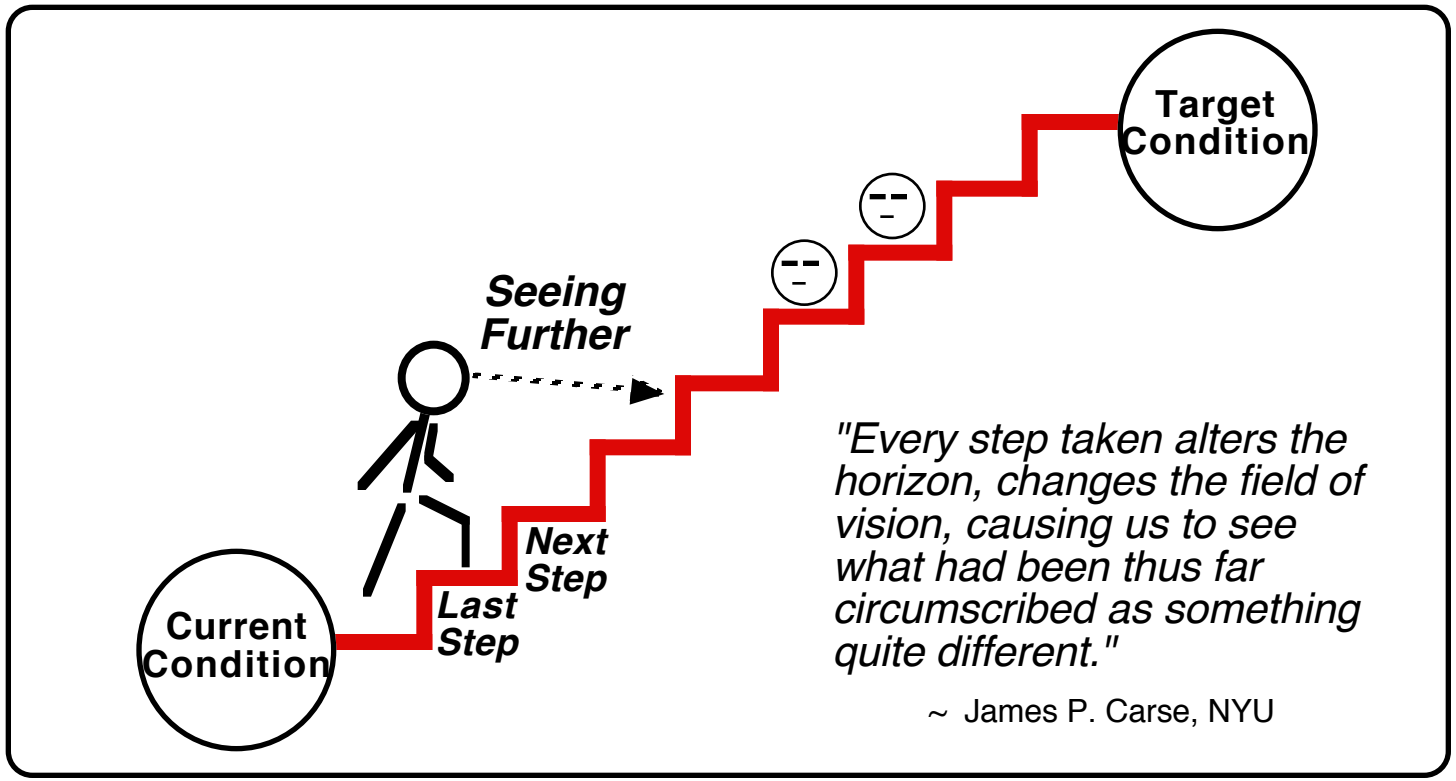
**We take that step, observe that the outcome is not what we expected, but then recognize something else that could generate the desired effect. That was a PDCA cycle.**

# When you experiment...
# YOU DON'T HAVE TO THINK TOO FAR AHEAD

## You don't actually know what the result of the next step will be

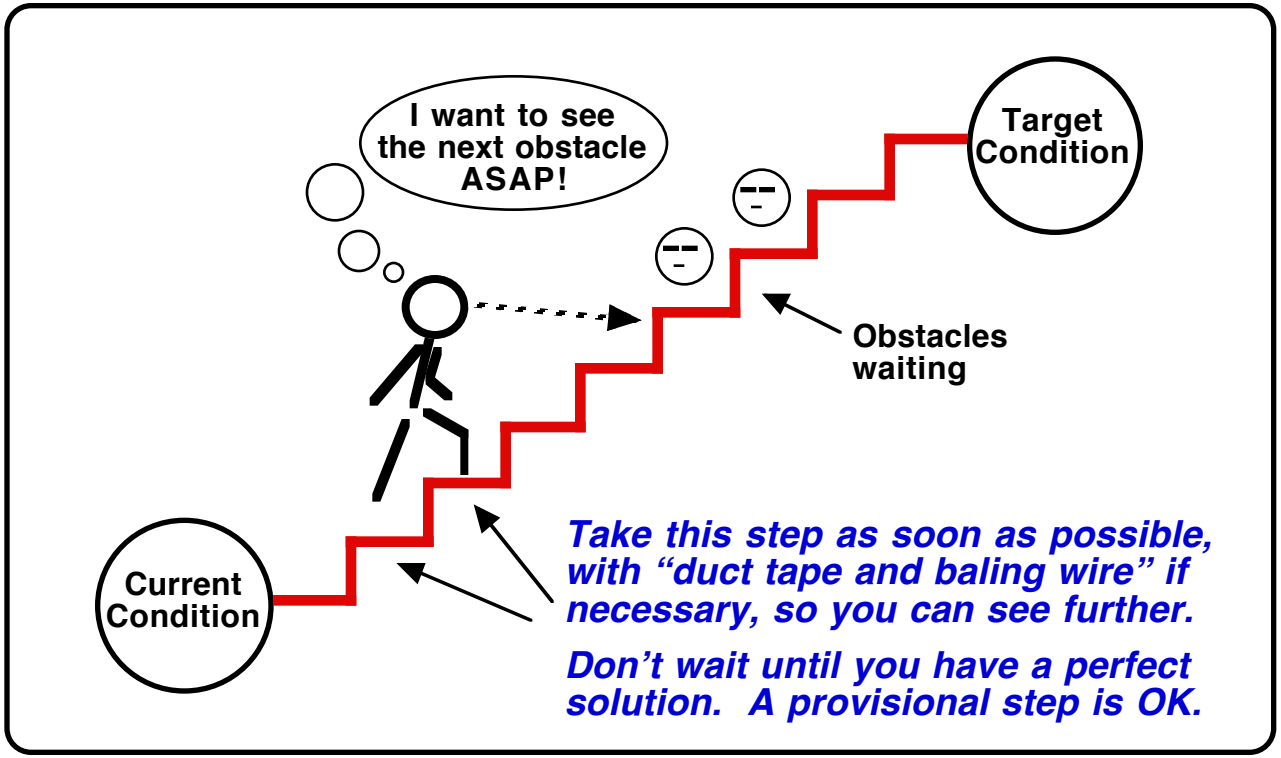
**Once you have a target condition, concentrate on the next step. What you learn from that will probably influence your next step after that, so be in the moment and apply PDCA.**

**You'll only see the full path to the target condition in *hindsight*. You're probably not going to be taking the most direct route there.**



# TRY TO DO THE EXPERIMENT RIGHT NOW, WITH WHATEVER YOU HAVE

## Conduct your experiment as quickly and cheaply as possible by asking, *can we do it right now?*




**The results of experiments are what help you see beyond the current knowledge threshold, uncover true obstacles and find the way forward. You'll see the next step and maybe the next obstacle after taking a step, so take that step ASAP.**

# EXAMPLE OF 3 KINDS OF PDCA EXPERIMENTS

**An *experiment* is a learning experience that doesn't necessarily involve making a change in the focus process. "Further analysis" or "go and see" can be an experiment, as long as a prediction of "what the Learner expects" is made on the PDCA Cycles Record. The following hierarchy goes from less to more scientific. All are acceptable.**



## 1) Go and See

**Direct observation and data collection, without changing anything, to learn more about a process or situation.**



## 2) Exploratory Experiment

**Introducing a change in a process to see, via direct observation, how the process reacts. Done to help better understand the process.**

**Example: Try to run a process as specified in the target condition in order to see what happens. This is often an early experiment.**



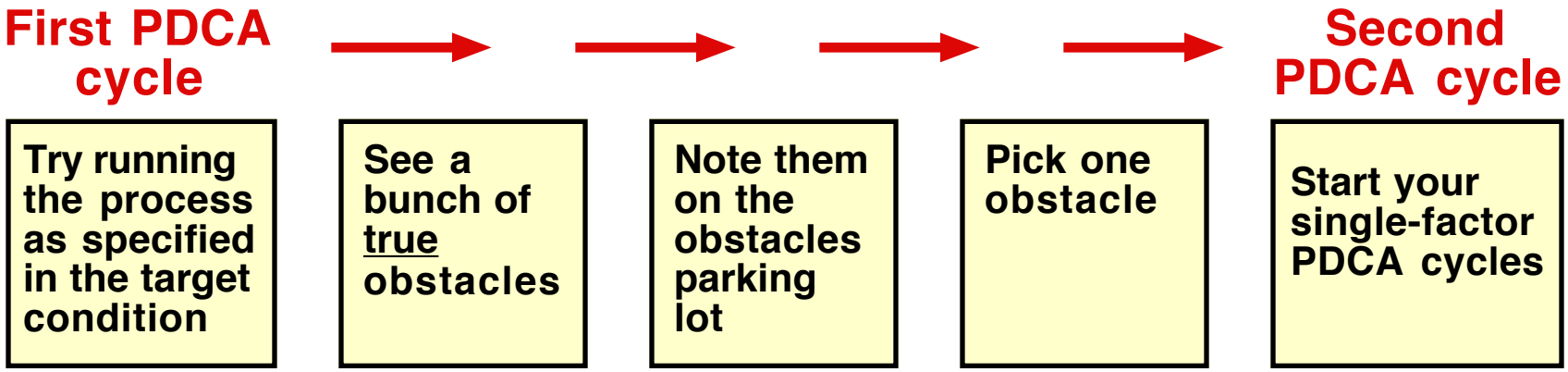
## 3) Testing a Hypothesis

**Introducing a change, ideally in only a single factor, together with a prediction of what you expect to happen.**

# WHAT SHOULD YOUR FIRST STEP BE?

## The first experiment is often an exploratory experiment

**One elegant tactic for a first step is to try to run the process as described in the target condition. We already know it won't work, but you are at a knowledge threshold right now. That is, you may only have conjecture about what first step to take. An exploratory experiment like this gets *true* obstacles to reveal themselves, so you know *scientifically* what you *need* to work on.**



# CHECKLIST FOR EVALUATING THE RESULTS OF AN EXPERIMENT

- ❑ **To check the results of an experiment you may need to observe and measure several cycles.**

- ❑ **Evaluation has two phases:**

  **1) Compiling the facts and data from the experiment ("Check")**

  **2) Forming conclusions based on the facts and data. ("Act")**

  **Maintain a clear distinction between recording the facts / data, and interpreting the results.**

- ❑ **There are several possible outcomes, for instance:**
  **--> The results support your prediction and you can standardize the step.**
  **--> The results do not support your prediction. (Interesting!)**
  **--> The results came close and you can see what you have to try next.**
  **--> You can't tell and need more information.**

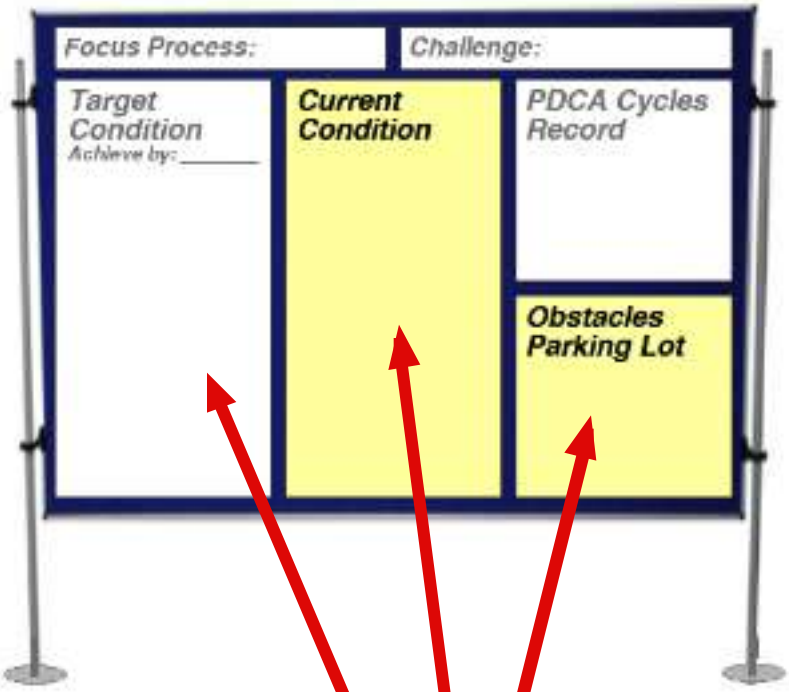
- ❑ **It is not unusual for more than 50% of the experiments to fail. The benefit you get is learning from them what you *need* to focus on and do to overcome the obstacle on the way to your Target Condition.**

- ❑ **When an experiment is successful you may need to think about how to standardize the change you made.**

- ❑ **It's a good idea to reflect on what could you have done differently to improve your experimental procedure.**

# UPDATE THE STORYBOARD!

## The current condition may be new after each experiment







**Any time you make a change in a process, it's now a new process that has a new current condition.**

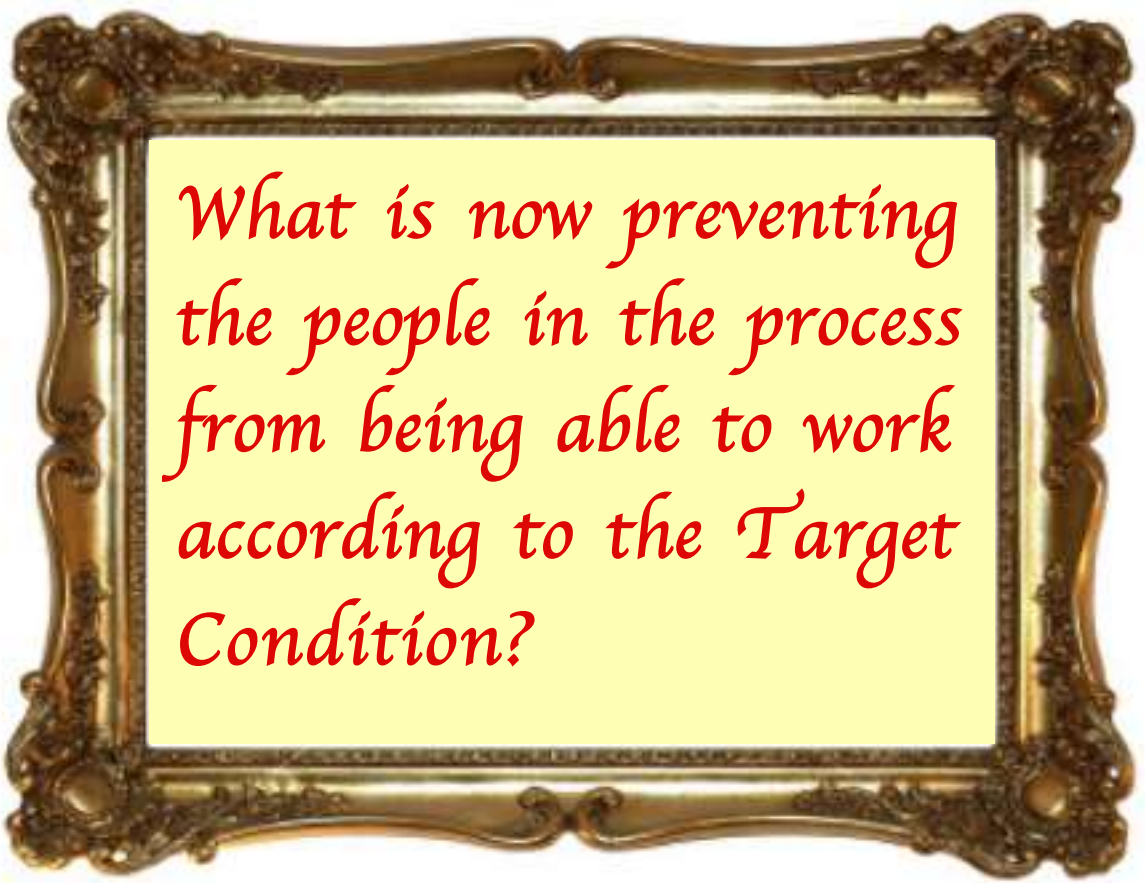
- **Update the facts and data in the "Current Condition" field of your storyboard before the next coaching cycle.**
- **Also update the "Obstacles Parking Lot," if new obstacles were discovered or listed obstacles are no longer an issue.**
- **You can also add detail to the "Target Condition" as you learn.**

# COACHING CYCLE: Answering the Coach's Questions

| | | |
|---|---|---|
| **0** | **What is the challenge?** | Explain what you understand the overarching challenge to be, which comes from the level above you. |
| **1** | **What is the target condition?** | Read through the description of the target condition that's posted on your storyboard. Point to the items as you read. The TC should be measureable and have an achieve-by date. |
| **2** | **What is the actual condition now?** | Read through the facts, data and diagrams of the current condition as it is now (not the initial current condition) that's posted on your storyboard. Point as you read. |
| **REFLECTION** | **What was your last step?** | Read the first box on your PDCA Cycles Record. |
| | **What did you expect?** | Read the second box on your PDCA Cycles Record. |
| | **What actually happened?** | Read the third box on your PDCA Cycles Record. |
| | **What did you learn?** | Read the fourth box on your PDCA Cycles Record. |
| **3** | **What obstacles do you think are preventing you from reaching the target condition?**<br>**Which *one* are you addressing now?** | Read through the items on your Obstacles Parking Lot.<br><br>Stick an arrow pointing at the obstacle you are currently working on, and point to this obstacle. |
| **4** | **What is your next step? (next PDCA experiment) What do you expect?** | Read the first and second boxes in the next row of your PDCA cycles record. **Use the *"Checklist for Planning PDCA Cycles"* to help you plan and explain your next experiment.** |
| **5** | **When can we go and see what we have learned from taking that step?** | Date and time you propose for the next coaching cycle. The Coach will encourage you to do the experiment as soon as possible. Agree on the facts & data you'll bring to the next coaching cycle. |

**If possible *show* your Coach at the focus process what you're talking about**

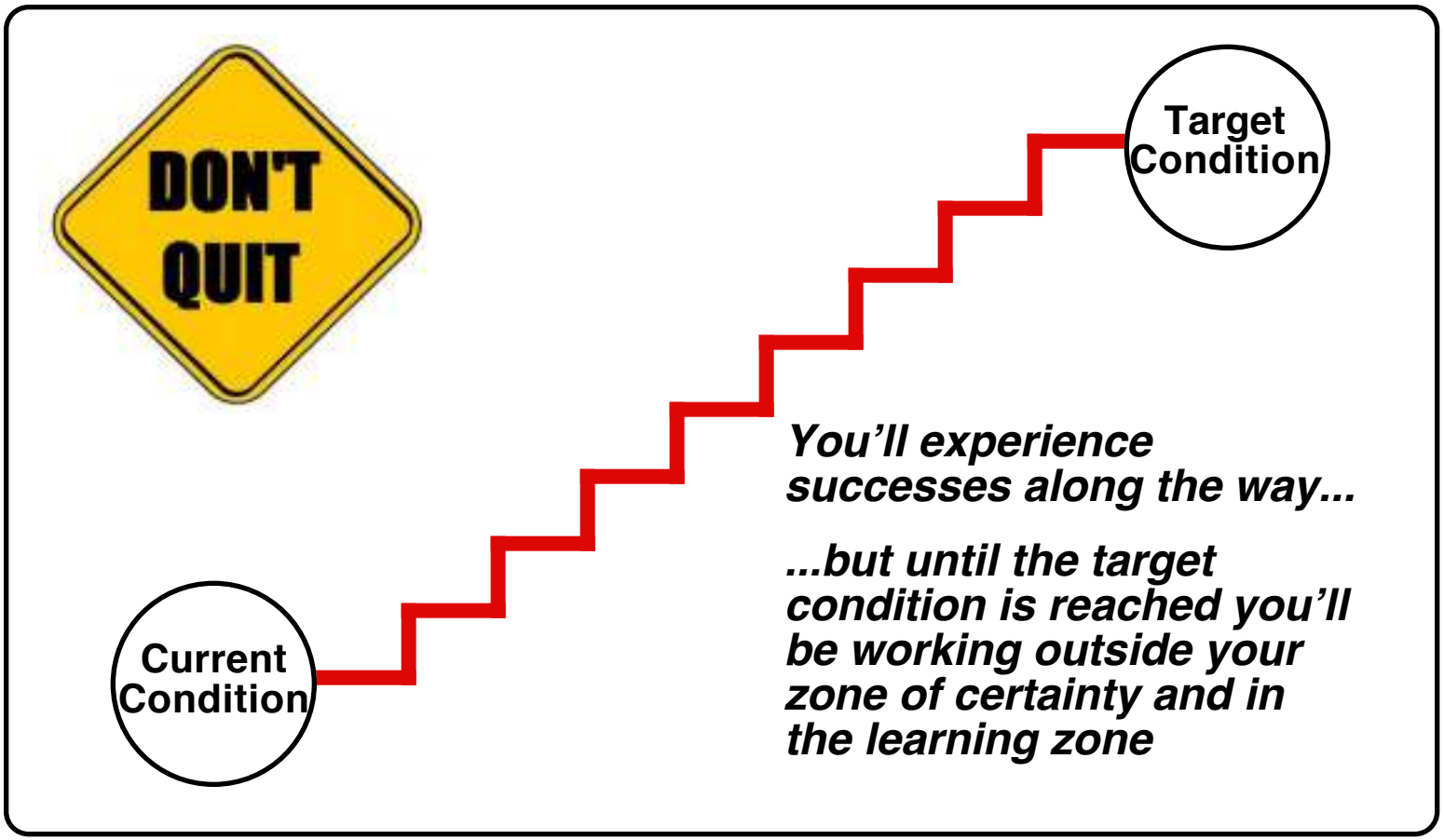
# ASK YOURSELF THIS QUESTION AFTER EACH EXPERIMENT




**This perspective will keep you focused on the work process and help you work together with the process team**

# GET USED TO BEING IN THE *LEARNING ZONE*

## It's where improvement, adaptiveness and innovation happen




**Don't give up on the target condition!** **The failures and obstacles you encounter are not reasons to abandon the target condition. They are the things you have to figure out and work through.**


DON'T
GIVE UP
on your Target Condition!

# WHEN YOU REACH THE ACHIEVE-BY DATE

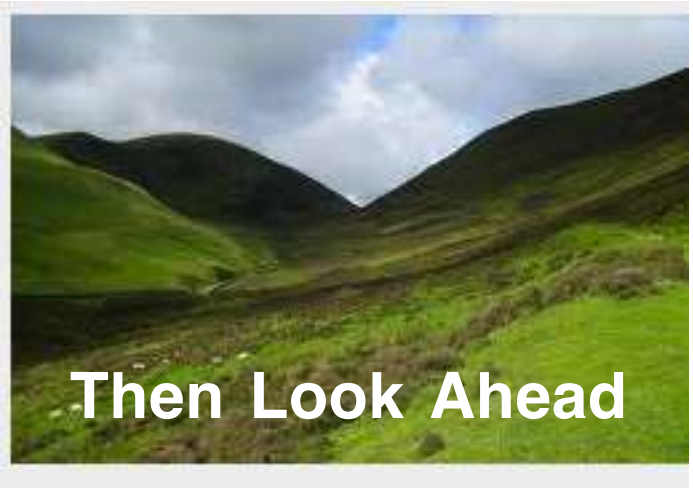
**At some point you'll reach the target condition achieve-by date, often, but not always, having achieved your target condition. At this point you should pause and:**

- **Do a summary reflection, i.e. a major reflection over the entire process. This can lead to lots of learning that may be applied in the next cycle through the Improvement Kata pattern.**

**Then:**

- **Revisit the overall direction or challenge**
- **Grasp the current condition as it stands now**
- **Establish the next target condition**




**Remember, you'll most likely move through several target conditions in order to achieve the challenge**



# Special Cases:

# WHAT ABOUT EXPERIMENTING WITH LONG-CYCLE PROCESSES?

**The time it takes to conduct an experiment is often related to the cycle time of the focus process you're working on. The longer the process cycle, the longer the PDCA cycle, especially since you ideally need more than one data point. This can slow your learning, since you can't see further (beyond the knowledge threshold) without actually trying your next idea in some way.**

**Processes with very long cycles or that operate infrequently...**

- **May not be available very often, making it difficult to observe the process.**
- **May mean that running an experiment can take days.**
- **Make it difficult to do single-factor experiments, because when the rare chance to test arises the Learner may naturally want to test several factors at once.**

# EXPERIMENTING WITH LONG-CYCLE PROCESSES

**When you're faced with a difficult process the question is not whether you *should* experiment, but *how***

**How do you accelerate testing in infrequent processes with extended cycle time -- like some administrative and chemical processes -- to gain knowledge in a rapid, low cost way?**

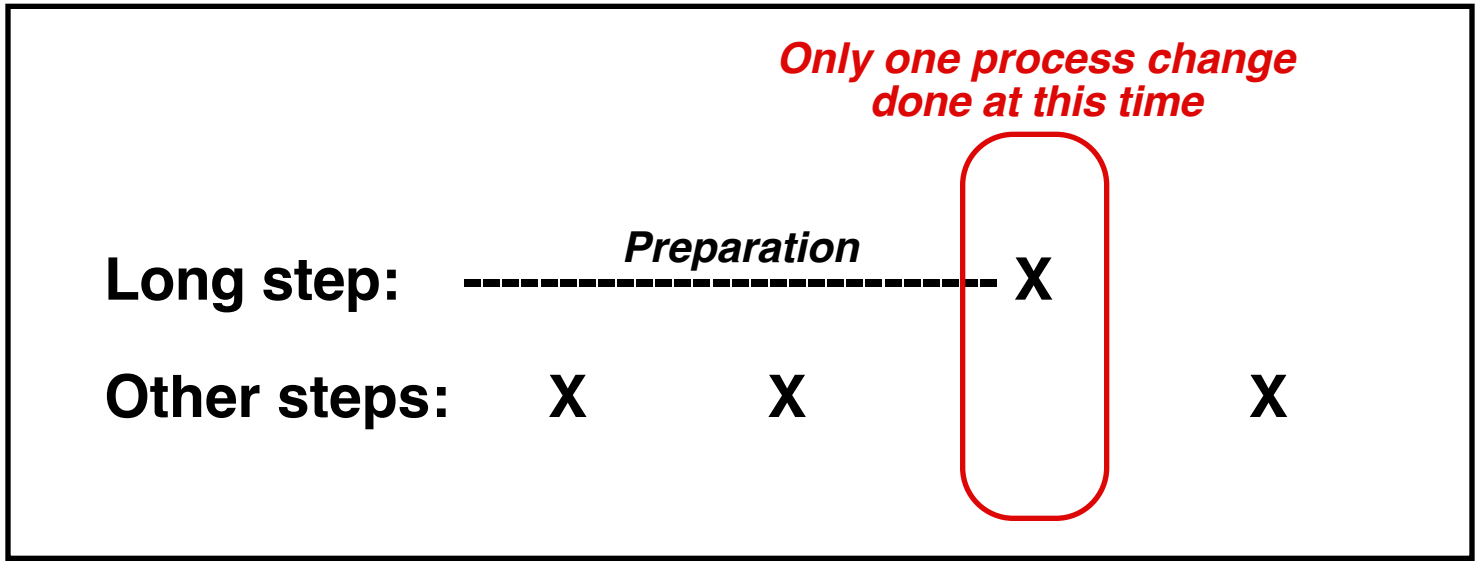
**In these cases experiments often involve some type of parallel 'laboratory' simulation. The question becomes, *"How can we artificially test this step or idea more quickly?"* This approach involves conducting a series of rapid, low-cost simulation experiments (one per day for instance) in between less-frequent experiments on the actual process. You gain several learnings in the interval between actual process cycles, which culminate in one "big" experiment at the actual process under real conditions, to get information that can only come from the real process.**

# WHAT IF AN EXPERIMENT TAKES A LONG TIME TO PREPARE?

**You can work in parallel when one step will take a long time to prepare. However, you should still try to change only one thing at a time in the focus process, to help you understand cause-and-effect.**

**Here's a way to work in parallel in this situation.**

**(X = a step/experiment)**



# PART III: The Coaching Kata

## Learning to Coach the Improvement Kata Pattern

**PART III of the Handbook is a set of practice routines for learning how to coach someone who is practicing the scientific pattern of the Improvement Kata. Coaching the Improvement Kata is a skill like any other, which means that learning it typically begins with some structured practice in small steps.**

**Why does a Learner need a Coach? Because alone we don't see the errors in our practice and thus don't correct them!**

**To help the Learner become more proficient in using the scientific pattern of the Improvement Kata -- to make it a habit -- the Coach pays attention to the Learner's current application of the Improvement Kata pattern and sets specific practice goals for improving targeted aspects. The Coach keeps the Learner moving ahead in skill development and ensures the Learner is successful in using the IK pattern to navigate uncertain territory and achieve a challenging real Target Condition.**

# PART III
# TWO CHAPTERS ON THE COACHING KATA

## CHAPTER 8
## Routines & Guidelines for IK Coaches



**Chapter 8 presents a set of routines and guidelines for anyone who wants to practice and learn how to teach the Improvement Kata pattern.**

## CHAPTER 9
## How to Do a Coaching Cycle




**Chapter 9 walks the Coach step-by-step through how to practice a daily coaching cycle in the *EXECUTING* phase of the Improvement Kata.**

# Chapter 8

The Coaching Kata - 1

## ROUTINES & GUIDELINES FOR IMPROVEMENT KATA COACHES



# THIS CHAPTER COVERS THE FOLLOWING TOPICS

## Look for the icons

**Giving Feedback**




**Qualification for Coaching**

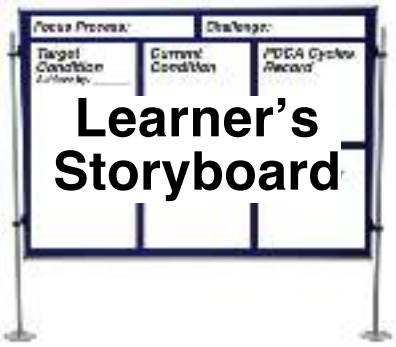
**The Five Coaching Kata Questions**

5 QUESTIONS

**Coaching Cycles**

Coaching Cycles

**Using the Learner's Storyboard**




**The Threshold of Knowledge**

ToK

**Role of the 2nd Coach**

2nd Coach

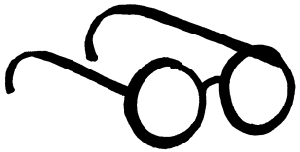
# ORIENTATION

## Planning

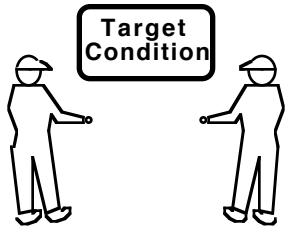
### Understand the Direction




### Grasp the Current Condition

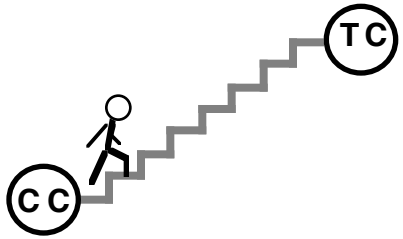


### Establish the Next Target Condition




## Executing

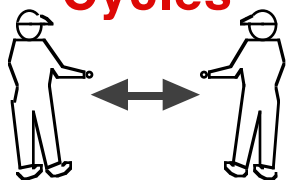
### Iterate Toward the Target Condition




## You Are Here

‘Planning’ Coaching Cycles

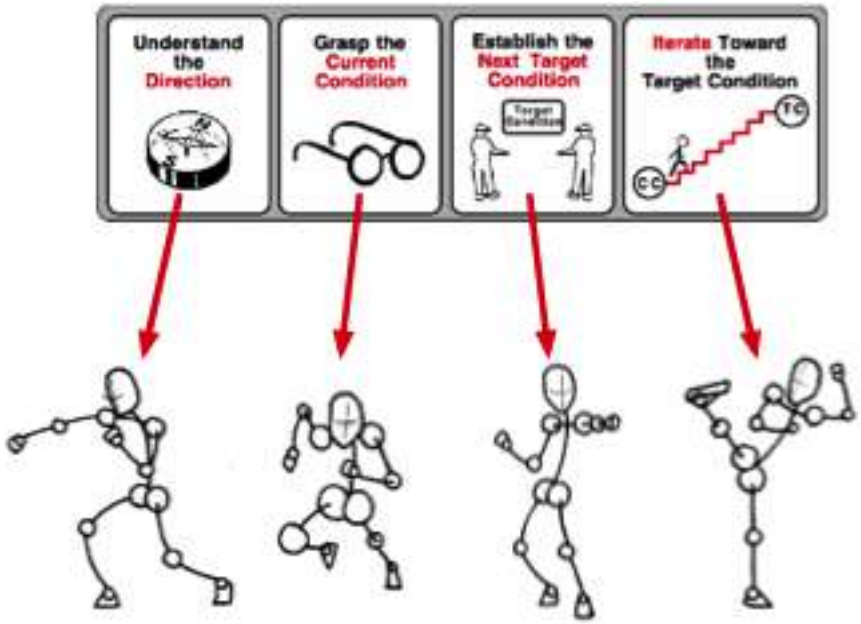
‘Executing’ Coaching Cycles



# THE COACHING KATA IS NOT A GENERAL COACHING ROUTINE

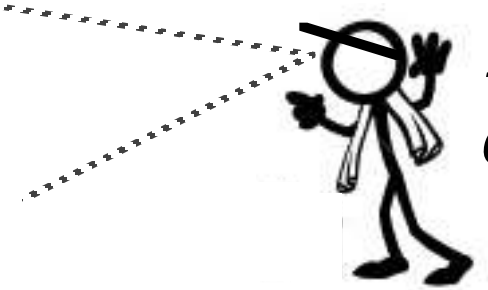
**A golf coach can't teach you how to play guitar. The Coaching Kata is a practice routine that's specific to teaching a scientific thinking pattern like the Improvement Kata.**

**The IMPROVEMENT KATA PATTERN**




**These are PRACTICE ROUTINES for learning each step of the Improvement Kata pattern**

(HANDBOOK PART II)



*This is about the Coach practicing!*

**The COACHING KATA is a set of practice routines for learning how to teach the Improvement Kata pattern**

(HANDBOOK PART III)

# GIVING FEEDBACK TO THE LEARNER

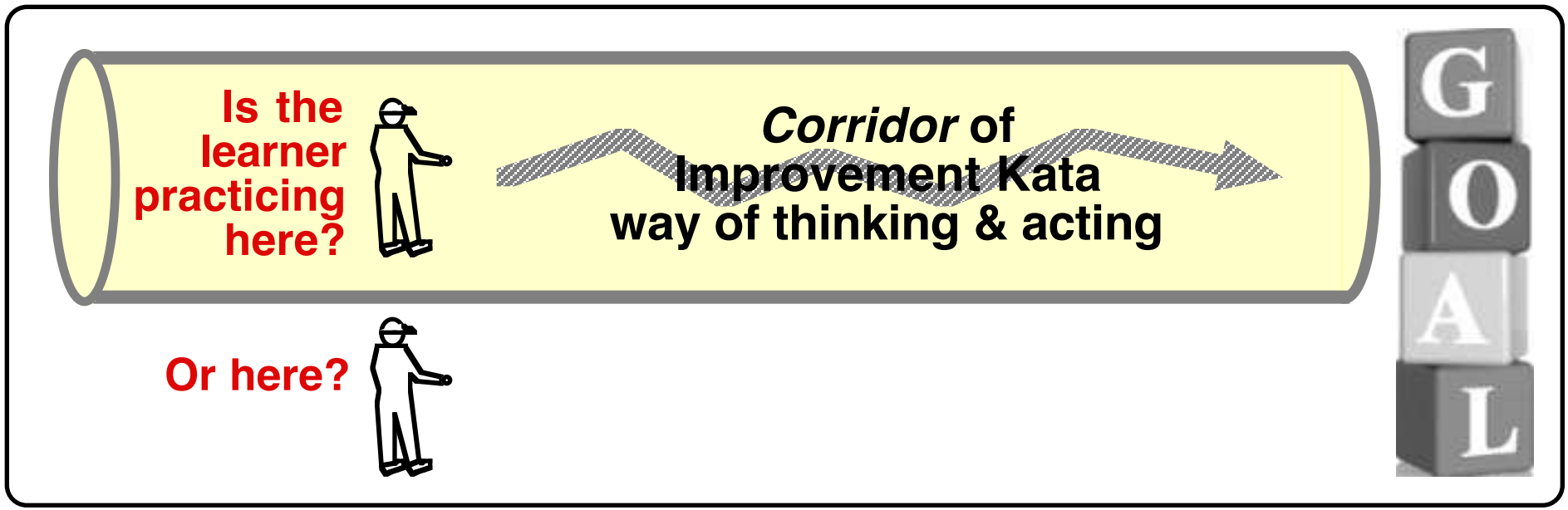
**The effectiveness of the Coach's coaching, and the Learner's learning, depends on the Coach doing something with the Learner's responses to the Coach's questions, in a way that leads the Learner to higher skill and a richer understanding than s/he previously had. What should the Learner practice next?**






# WHAT YOU'RE DOING AS AN IK COACH

**Your task is to determine whether or not the Learner is practicing within the scientific and systematic corridor of thinking and acting specified by the Improvement Kata, and to introduce procedural course corrections as necessary.**




**When the Learner gets outside the Improvement Kata corridor the potential for learning (for increasing the Learner's IK skill) is great. In this case you either provide a procedural input right away, or allow a small failure to occur and then provide the input.**

# CORRECTING THE LEARNER

## It's not *practice makes perfect,* it's *correct practice makes perfect*

**The Learner will naturally default back to his or her existing ways of thinking and acting. The Coach is ensuring that the Learner practices the right pattern the right way so that it becomes a habit that is readily available.**





**Of course, this requires that the Coach (manager) has first learned how to apply the Improvement Kata him- or herself, through practice.**

Photos from "The Karate Kid," 1984




# THE INTENTION OF COACHING IS NOT AUDIT AND COMPLIANCE

**The purpose of coaching is this...**



***Helping the Learner learn the scientific Improvement Kata pattern***

**Not this...**






# THE LEARNER NEEDS YOUR SUPPORT

**Novice Learners need the Coach's experience and supporting feedback in order to get comfortable and skillful with operating in the uncertain 'learning zone'**

**The norm in many organizations**




**You're trying to develop exploratory mindset by coaching the Learner in practicing the Improvement Kata pattern**




**Improvement Kata coaching is not about criticism and control. Being allowed to have many failed experiments is essential for scientific working and learning. The Coach must understand this in order to be accepted by the Learner as a teacher.**




# WHAT IS THE LEARNER READY FOR?

**One of the main responsibilities of an IK Coach is to sense what the Learner is ready for next, and to tailor the feedback and practice accordingly. In particular, a challenge for the Coach is to ensure that the Learner periodically experiences positive emotions while practicing. Brain science shows that if we practice but are not enthusiastic about it, then the new patterns won't be learned no matter how much we practice.**

**This doesn't mean that the Learner has to be enthusiastic right from the start or all the time. But the Coach must ensure that the Learner periodically feels a sense of progress and success.**

**The Coach is trying to help the Learner develop new habits of thinking. This requires striking a balance between going through the structured practice routines of the Improvement Kata model and the Learner having a positive emotion. On the one hand, having the Learner mindlessly repeat routines usually fails to generate positive feelings about practice. On the other hand, abandoning the practice routines means the Learner is unlikely to change their existing habits of mind.**

**So in each coaching cycle the Coach should be assessing what the Learner is ready for next and adjusting accordingly. The Coach knows the thinking pattern s/he is trying to impart, but each Learner will "get it" through a somewhat different path of practicing. The Coach should be experienced enough to see and to handle this variability in their Learners.**




# HOW CAN THE COACH TELL HOW THE LEARNER IS THINKING?

## By observing, asking questions and listening!

**The Coach asks questions not to direct the Learner to a particular solution (though it can sometimes feel that way to the Learner), but (1) to discern *how* the Learner is thinking & working and (2) to find the current Threshold of Knowledge.**

**The Coach should usually not be directive about *what* the Learner is working on. That comes out of the iterative process of experimentation, and neither Coach nor Learner know in advance what solutions will lead to the target condition. However, the Coach can be directive about *how* the Learner should procede.**

**Specifically, after you've observed the Learner and listened to the Learner's response(s) to questions you may be directive about the next procedural step. This is done to teach the desired pattern and to get the Learner into the Improvement Kata corridor.**

**Skill-coaching involves more than just asking questions. The Coach is concerned about the Learner practicing correct Improvement Kata procedure and will often give targeted procedural inputs. Being able to judge the Learner's process and provide appropriate feedback is why the Coach must have prior personal experience with applying the Improvement Kata pattern.**




# HOW IT WORKS

## Co-dependency between Coach and Learner

**The Learner does the WHAT by taking steps and conducting experiments**

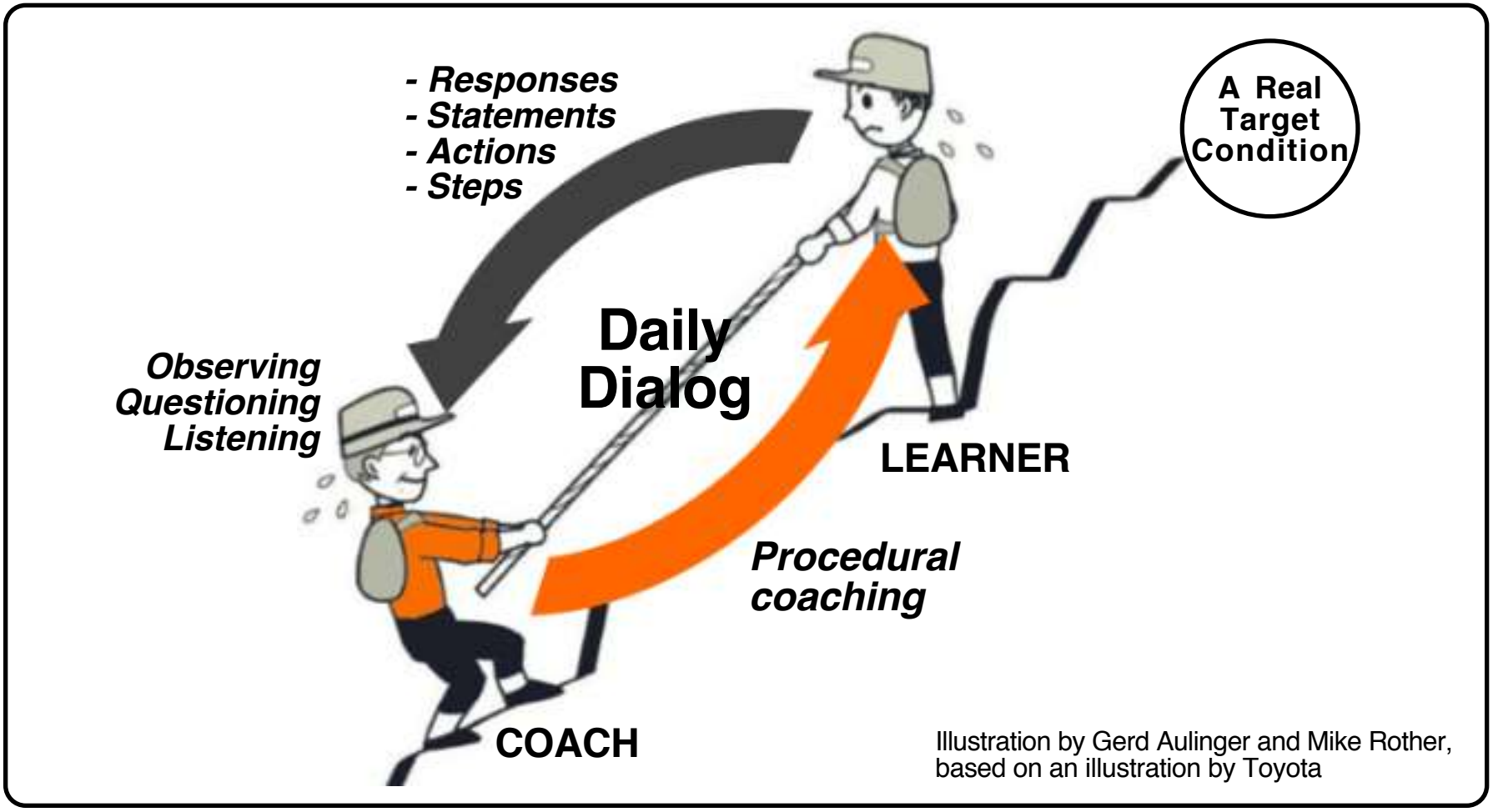



Illustration by Gerd Aulinger and Mike Rother, based on an illustration by Toyota

**The Coach teaches the HOW of the Improvement Kata procedure**




# IT'S A "SEE-COMPARE-INSTRUCT" PATTERN OF COACHING

1. **SEE - Try to understand how the Learner is thinking**
   **(Coach is in an observing / questioning / listening mode)**
2. **COMPARE - Compare this to the desired pattern -- "the corridor" -- specified by the Improvement Kata**
   **(Coach is in a judging mode)**
3. **INSTRUCT - Introduce a course adjustment if necessary**
   **(Coach is in an instructing or guiding mode)**




***The SEE-COMPARE-INSTRUCT pattern can be repeated several times within one coaching cycle***




# ASK YOURSELF




**1 How does the Learner seem to be thinking?**

Observe, ask and listen.

**2 What *thinking* pattern do I want to see at this point?**

Think about the Improvement-Kata pattern from your own experience applying it.

**3 Is a course adjustment necessary? What Improvement-Kata *behavior* pattern do I want the Learner to practice next?**

Correct at this point, or let the Learner fail and then instruct.




# GIVING FEEDBACK TO THE LEARNER IN STAGE 1 OF THEIR IK PRACTICE

**In Stage 1 the Learner is trying to execute the kata exactly, and you're instructing the Learner in the steps and techniques of that Kata**

- **To give constructive feedback you should have a genuine interest in the Learner being successful in applying the Improvement Kata toward their target condition.**

- **Observe and question the Learner —> Compare what you see and hear to the desired way of working (specified by the Improvement Kata) —> Give feedback and a specific next practice goal —> Repeat in the next coaching cycle.**

**Your task is to spot, and have the Learner work on, a current area of weakness in practicing the Improvement Kata.**

- **You should expect and allow the Learner to make small mistakes in applying the Improvement Kata. These are important moments, from which the Learner learns how to correctly apply the Improvement Kata pattern.**




# GIVING FEEDBACK TO THE LEARNER IN STAGE 1 OF THEIR IK PRACTICE

- **Your feedback should contain <u>specific</u> comments:**

  **(A) What specific aspects of the Learner's Improvement Kata procedure fit the desired pattern. (Positive feedback.)**

  **(B) What one or two aspects the Learner should work on next, including what exactly the Learner should do in order to practice and improve in those particular areas. (The Learner may also have suggestions for how to improve.)**

**Specific feedback is more useful for skill development than general statements such as *"nice work"* or *"needs improvement"*.**

- **Since you're doing coaching cycles with the Learner frequently there's no need to try to correct many errors in one coaching cycle.**

- **Errors should often be corrected immediately. In Stage 1 of practicing the IK pattern it's often best to give feedback right away, rather than waiting until the end of the coaching cycle, to avoid cementing a bad habit. If the Learner makes a misstep, stop and deal with it, because it's a teachable moment. (Note: this interrupting can be overdone).**

**When you interrupt a coaching cycle to correct an error it's often a good idea to ask the Learner to restart the coaching cycle from the beginning or to repeat that section of the coaching cycle. This drives home the pattern and is a standard technique in music practice.**




# GIVING FEEDBACK TO THE LEARNER IN STAGE 1 OF THEIR IK PRACTICE

❑ **Another strategy is not to correct the Learner immediately and instead allow the Learner to make a mistake and let the experience be the teacher. You should provide enough leeway for the Learner to make (and learn from) harmless mistakes. This works best when the Learner's next step is cheap, small and short; i.e., feedback and the next coaching cycle will happen soon. You have to decide on case-by-case basis when to use this strategy, which is part of your skill as a Coach.**

❑ **Since beginner Learners often feel stress about being in the uncertainty zone, the Coach should transmit confidence that the target condition can be achieved by applying the pattern of the Improvement Kata.**

**It's important for the Learner to derive motivation from periodically feeling that they're successfully moving closer to the target condition and getting better at the Improvement Kata pattern. If the Learner is not getting this feeling periodically then something in your coaching needs to be adjusted.**




# THE NATURE OF YOUR FEEDBACK CHANGES AS THE LEARNER'S IK SKILL INCREASES

| Stage of Learner's IK Practice & Skill | Nature of Your Feedback | Closeness of Your Coaching* |
|---|---|---|
| **STAGE 1: *FOLLOW***<br>**(Practice the Kata exactly)**<br>At first the Learner repeats the structured practice routines with discipline, trying to execute them without variation. | **Emphasis on *Instructing***<br>When the Learner first starts practicing the Improvement Kata pattern the Coach's role is to teach the Learner the steps and techniques of the Improvement Kata. | Close coaching (daily) on focused, simple applications of the IK pattern. |
| **STAGE 2: *DETACH***<br>**(Personalize your practice)**<br>Once the basic forms have been absorbed and can be executed successfully the Learner can make modifications to his/her practice. | **Emphasis on *Coaching***<br>As the Learner develops and demonstrates technical understanding of the Improvement Kata pattern, the Coach and Learner discuss and agree on appropriate training requirements. | Close coaching (daily) on a wider and more complicated range of applications of the IK pattern. |
| **STAGE 3: *FLUENCY***<br>**(Intuitive operating)**<br>At this stage the Learner has absorbed the Improvement Kata to such an advanced level that s/he can be creative and unhindered while still working within the principles. | **Emphasis on *Counseling***<br>As the Learner matures s/he will determine his or her own training requirements. The coach's role becomes one of a colleague providing advice and support as and when required. | Coaching can be less frequent. |

*How closely the Coach coaches the Learner depends on the Learner's current skill level. The Coach naturally has to spend more time with beginner learners than with proficient learners.




# THE COACH'S NOTEBOOK

**Maintain a notebook record of your coaching cycles, to keep track of key-point reminders for your next coaching cycle with a Learner. It's useful to have a single book for recording items such as the following:**




## EXAMPLE NOTEBOOK PAGE FORMAT

**Learner:**

**Coaching cycle date:**

**Start and end time:**

**Focus Process:**

**Learner's next step:**

**What are your impressions of the Learner's current approach to applying the Improvement Kata?**



**What aspect of their IK procedure should the Learner work on improving between now and the next coaching cycle? (Feedback given to Learner)**

**Other notes:**




# GAINING PROFICIENCY
# A STEP AT A TIME




**Your Learner can only take a step at a time toward the target condition. Likewise, you shouldn't overload the Learner with advice about what to practice. Remember, the next coaching cycle, i.e., the next feedback opportunity, is coming right up.**

**In a coaching cycle ask yourself...**

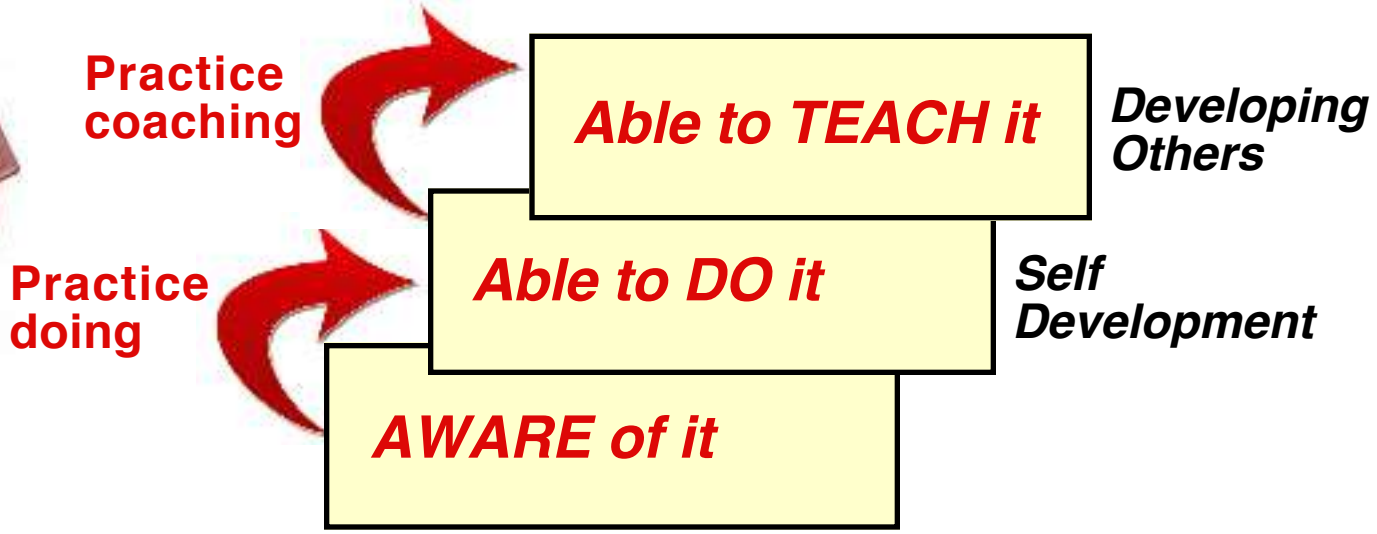
***what one or two aspects of the Improvement Kata do you think the Learner should practice in the next round...***

**as s/he takes the next step toward the target condition?**

# QUALIFICATIONS FOR BEING AN IMPROVEMENT KATA COACH

- Since you need to judge if the Learner is following the Improvement Kata pattern correctly and provide procedural inputs, you must have experience carrying out the Improvement Kata yourself. To coach the Improvement Kata pattern you need to understand the Improvement Kata pattern from your own personal experience.




- You must become knowledgeable about the focus work process that the Learner is improving. However, you can do that in parallel while you coach the Learner.

- You must be willing to practice and learn a different approach to managing, which involves guiding and teaching a scientific *procedure* rather than directing the content of the Learner's actions.

# A GOOD IMPROVEMENT KATA COACH



- **Highly experienced in both the pattern and philosophy of the Improvement Kata (Credible)**
- **Keen observer of people:  technical and interpersonal skills**
- **Listens more than talks**
- **Pulls best from Learner instead of pushing knowledge into head**
- **Frequent, specific feedback for small intervals of Learner's work**
- **Truly cares about the Learner's learning**
- **See coaching as a process of *mutual* development and trust**

List by Jeffrey Liker

# JOB DESCRIPTION FOR AN IK COACH

## The role of the Coach is to manage the Learner's practice

**Just repeating a series of steps is not enough for the Learner to develop new skills and mindset. How the Learner practices and their emotions during their practicing play a large role.**

**An important ingredient is the Learner's success and joy in (a) overcoming obstacles and achieving an appropriately challenging (for the Learner) Target Condition through application of the Improvement Kata pattern, and (b) progressively mastering the Improvement Kata pattern.**

**To cope with the discomfort, plateaus and setbacks that come with any skill-building and learning process the Learner needs support. The Coach helps the Learner see when s/he might be acting in ways counter to their skill-building goals and to configure the next practice activity to make new progress.**

**Your objective as a Coach is not just that the Learner achieves their Target Condition, but that the Learner is able to and *wants to* use the Improvement Kata pattern. With this in mind, a job description for an Improvement Kata coach, especially with beginner Learners, might be:**



**TO MANAGE THE LEARNER'S PRACTICE. Accompany the Learner and give procedural guidance as needed to ensure that although the Learner struggles, s/he is successful in learning to use the Improvement Kata pattern to achieve challenging, real Target Conditions.**

**Someone's learning is in your hands. In other words, the Coach is responsible for the Learner's success!**

# BEGIN YOUR COACHING ONE ON ONE

## One Coach, One Learner



**Start by coaching Learners one at a time, not in groups of Learners:**

- **Each Learner will have different focus-practice needs at different times.**
- **Different Learners learn at different rates.**
- **Different Learners learn in different ways.**

**Since a coaching cycle only takes 10-15 minutes, you can still meet with multiple Learners every day. The standard "Starter Kata" format of the Five Questions, PDCA Cycles Record and Learner's storyboard help you more easily shift from coaching one Learner to the next.**



# STAGES OF YOUR COACHING-KATA PRACTICE

## You're going through a coaching-skill learning process

### STAGE 1: FOLLOW (Practice the Coaching Kata exactly)

**At first you repeat the forms with discipline, executing the Kata without variation. It may feel awkward when you start, but as you go through repetitions it becomes more flowing.**

**Any time you learn a new skill you're a beginner in that area, which means starting with some repetitious exercises.**

### STAGE 2: DETACH (Personalize your Coaching Kata practice)

**Once the basic forms have been absorbed and can be executed successfully you can make modifications to your practice. You now appreciate and use the Kata because you understand the technical wisdom -- the "why" -- within them, and you adapt the patterns to your situation.**

### STAGE 3: FLUENCY (Intuitive operating)

**At this stage you've absorbed the patterns of the Kata to such an advanced level that you can be creative and unhindered -- spontaneous and efficient -- while still working within the principles. The underlying truth of the Kata remains, but you almost forget the technique and aren't limited by a conscious thought process. Your mind can now operate on a higher level than previously possible.**

# THE FIVE COACHING KATA QUESTIONS

## This is a Starter Kata for the Coach, shown here on the Coach's 5Q card

COACHING KATA

### The Five Questions

1) What is the **Target Condition**?
2) What is the **Actual Condition** now?

--------*(Turn Card Over)*---------->

3) What **Obstacles** do you think are preventing you from reaching the target condition?

   Which *one* are you addressing now?

4) What is your **Next Step**? (next experiment) What do you expect?
5) When can we go and see what we **Have Learned** from taking that step?

*You'll often work on the same obstacle for several PDCA cycles

**The card is turned over to reflect on the Learner's last step**

### Reflect on the Last Step Taken

Because you don't actually know what the result of a step will be!

1) What did you plan as your **Last Step?**
2) What did you **Expect?**
3) What **Actually Happened?**
4) What did you **Learn?**

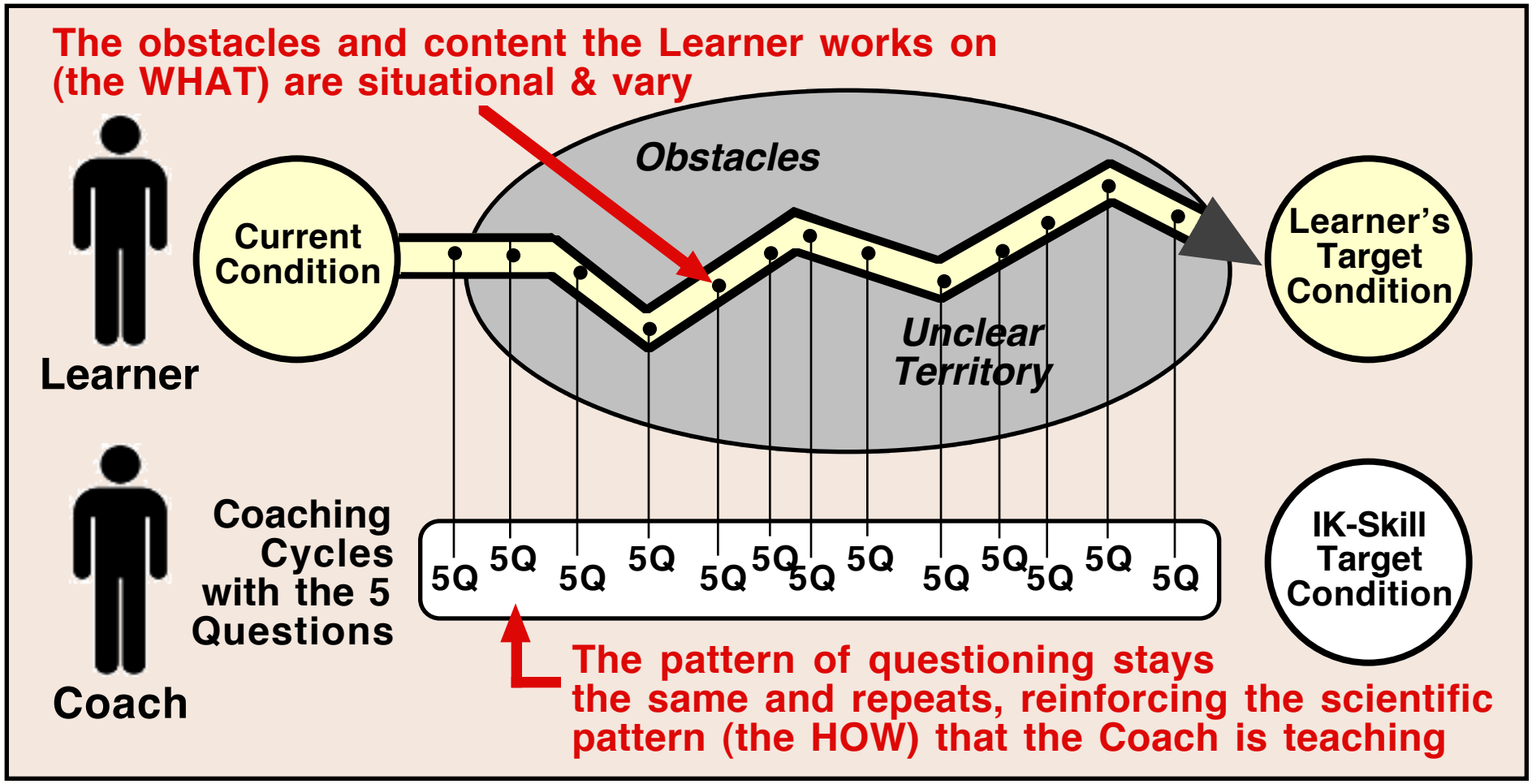
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*Return to question 3*

**The power of the Five Questions is great, when you know how to ask them and how to respond to the answers you get.**
**Get the card in the Appendix or at: http://tinyurl.com/katacard**

# PURPOSE OF THE FIVE QUESTIONS (A)
## *TO REINFORCE THE PATTERN OF THE IK*

**The Coach uses the same pattern of questioning in every coaching cycle**

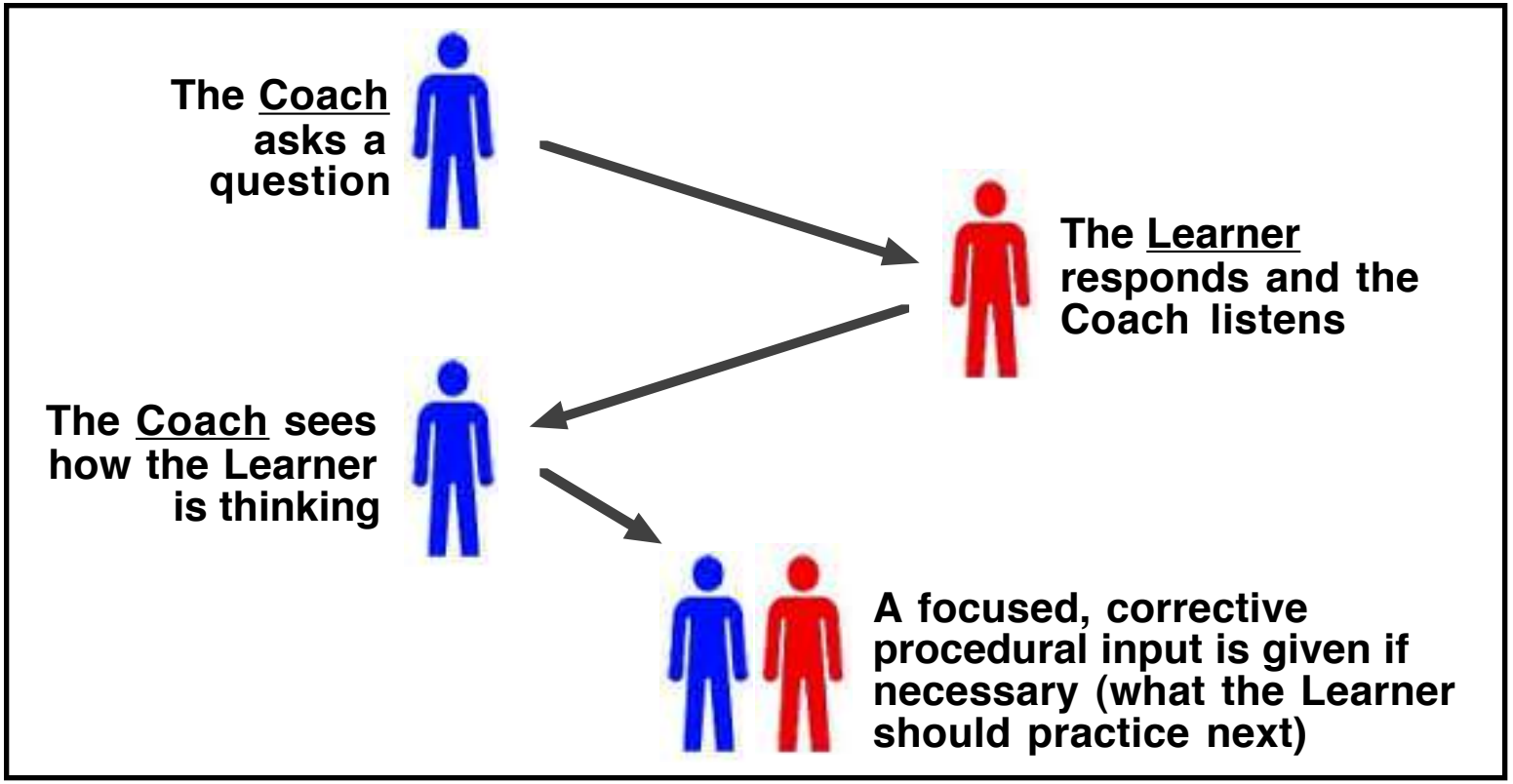



**The Five Coaching Kata Questions help the Coach teach a systematic, scientific way of thinking. The Learner knows what basic questions the Coach will ask in the next coaching cycle, and prepares his or her information on the storyboard accordingly.**

# PURPOSE OF THE FIVE QUESTIONS (B)
## *TO HELP THE COACH SEE HOW THE LEARNER IS THINKING*

**The Coach's job is to provide corrective procedural inputs, to ensure that the Learner is proceeding (practicing) according to the scientific pattern of the Improvement Kata.**

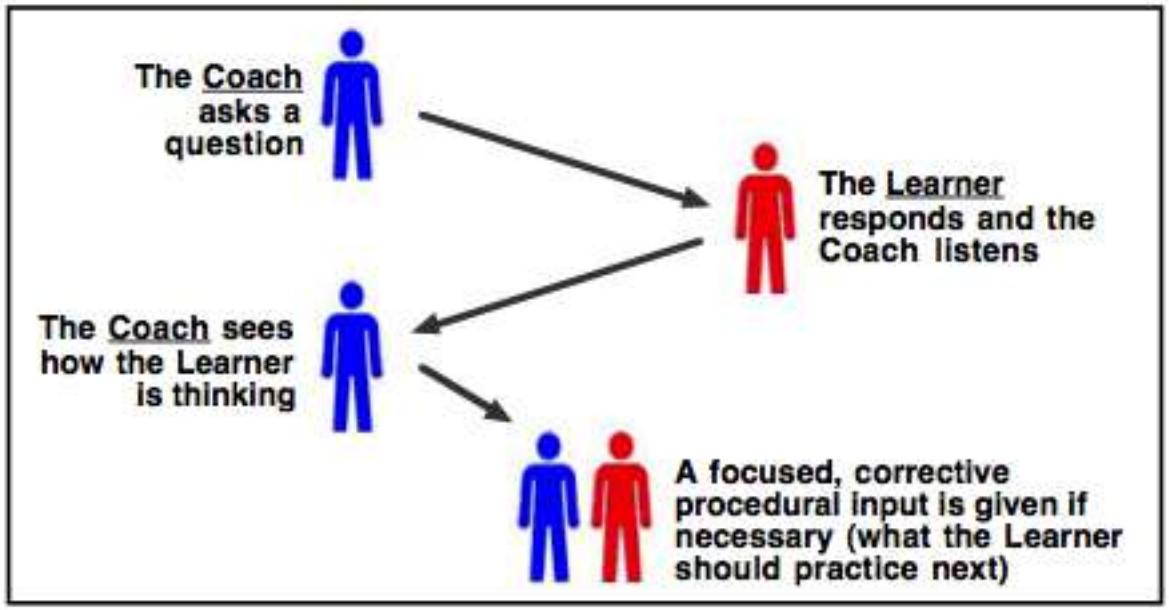
**However, the Coach cannot provide such input until the Learner has said or done something, which shows how the Learner is currently thinking. It works like this:**






# IT'S THE SAME AS IN SPORTS AND MUSIC

**Asking the Five Coaching Kata Questions helps the Coach see the line of reasoning being used by the Learner, and then to keep the Learner practicing in the corridor of the scientific thinking pattern of the Improvement Kata**




**The 5Q process is like a Golf coach saying, *"Please swing the golf club a few times so I can see what you are doing,"* or a Music teacher saying, *"Please play a bit so I can see."***

**However, since the Improvement Kata pattern is a mental process, the Coaching Kata Five Question approach is: *"I'm going to ask you these questions. How you respond will help me to understand how you are currently thinking."***




# MASTERING THE 5 COACHING KATA QUESTIONS HELPS THE COACH ACHIEVE SEVERAL THINGS

- ❑ **Helps you determine if the Learner's thinking is inside or outside the 'corridor' specified by the Improvement Kata pattern.**
- ❑ **You put the focus on facts and data; on what we know and not just opinions.**
- ❑ **You guide a process of experimenting, whereby the Learner compares predicted and actual outcomes, and adjusts the course accordingly.**
- ❑ **You teach a systematic process for learning.**
- ❑ **You impart importance and urgency.**

## The Five Coaching Kata Questions...

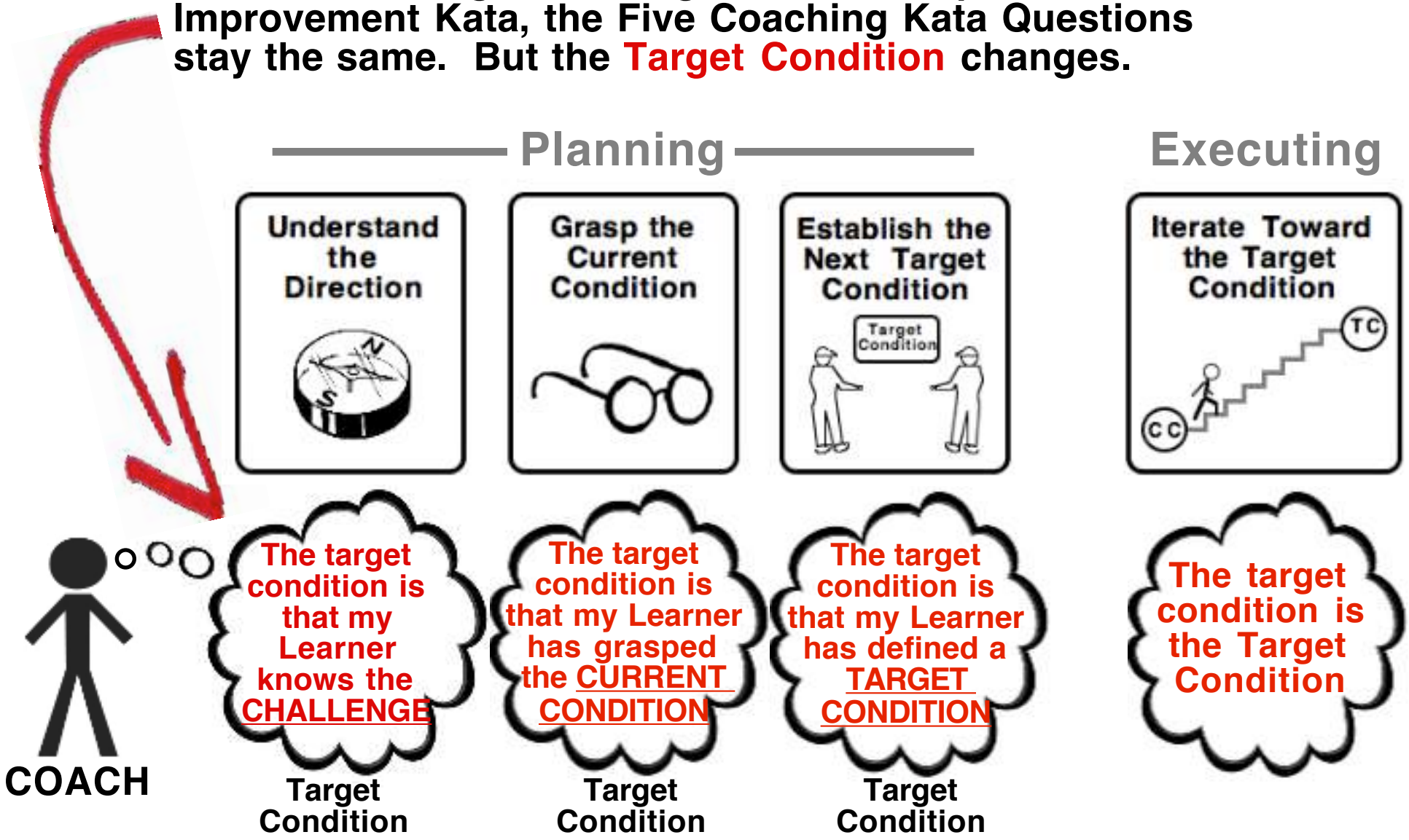
**--> Should be used at all levels of an organization to help create scientific thinking. They hold everyone to the same standard of requiring data from experiments for decision-making.**

**--> Don't demand that you know all the answers when you start. You proceed through experiments, each based on what you learned in the previous step.**

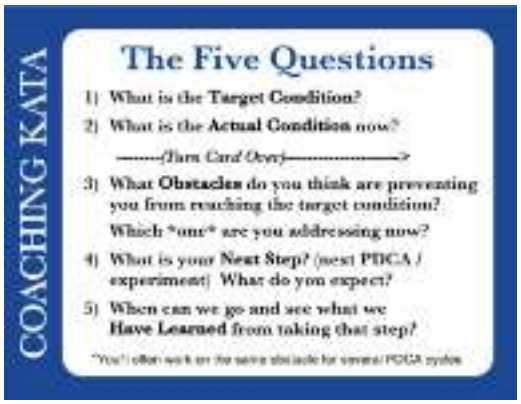
**--> Their structure is easy to learn, although it takes practice to master them.**

# THE FIVE QUESTIONS USED AT ALL STEPS OF THE IMPROVEMENT KATA PATTERN

**As the Learner goes through the four steps of the Improvement Kata, the Five Coaching Kata Questions stay the same. But the Target Condition changes.**






# STICK TO THE 5Q SCRIPT UNTIL YOU INTERNALIZE ITS PATTERN

**Ask the questions exactly as they are written on the card when you conduct a coaching cycle. No improvising until you've at least reached Stage 2 of practicing your coaching skills. This way every Learner gets a consistent version of the coaching dialog.**

**It can feel awkward at first to follow a structured dialog when you're not used to it. Many people think a coaching dialog is like a conversation, but with the skill-development focus of the IK/CK it is not. It's a structured dialog with the goal of effective information exchange and development of scientific skills and mindset.**

**A common mistake that beginner coaches make is to deviate from the script of the Five Coaching Kata Questions. This diminishes the strength of the pattern you're trying to develop, both in your mind & behavior and in the Learner's. If the Learner sees you varying from the basic pattern they will tend to vary from it as well; way too soon when they are still in Phase 1 of their kata practice. This can lead to simply sticking with current thinking; not developing new skill and mindset.**

**A guideline is to stick to the script for six months to a year with each new Learner. Let the pattern sink in and become a well-established habit for both of you. Once you and your Learner have a consistent and well-developed routine and understand the "why" behind the 5 Questions, you can consider modifying the routine if necessary.**






# YOU CAN OF COURSE ALSO ASK "CLARIFYING QUESTIONS"

**Beyond the questions written on the card, you can also ask *clarifying questions* -- to probe the Learner's thought process, gain more information and find the current Threshold of Knowledge -- at any point in the coaching cycle. Clarifying questions help you understand what's going on in the Learner's thinking, and help you develop a scientific mindset in the Learner.**

**Clarifying questions are not intended to lead or persuade the Learner. Their purpose is to help the Coach see and understand the Learner's current way of thinking, so the Coach can cultivate systematic, fact- and data-based thinking.**

**An example clarifying question is, *"Can you please show me?"* Going to the focus process and observing what the Learner is talking about gives you facts that go beyond data on the storyboard. Checking the reality of the situation helps you to discern how your Learner is thinking, which guides your next coaching inputs for the Learner.**

**Several suggested clarifying questions for the Executing phase of the IK are provided in the next chapter.**




# BUT 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 a team brainstorming technique, not a coaching technique.**

**If you ask the Learner *"why"* it can easily feel confrontational rather than constructive, especially if you ask *"why"* repeatedly.**

**As a Coach, you're asking questions to help you SEE the Learner's current thinking pattern, and for that purpose it may be better to say, *"Tell me more about..."* or *"Can you show me?"***



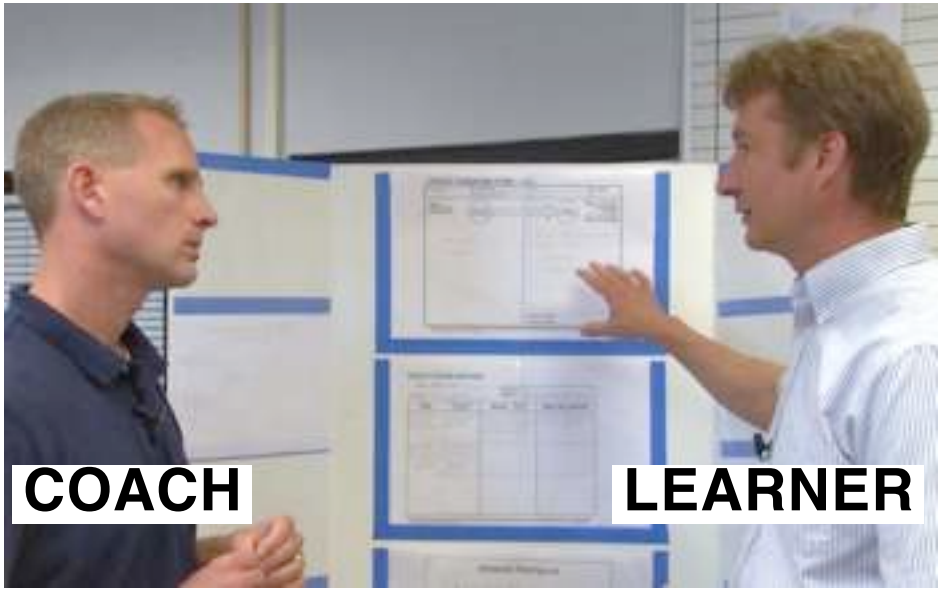





# COACHING CYCLES

## The main forum for coaching

**A coaching cycle is a structured face-to-face dialog between the Coach and the Learner that is conducted at least once daily, taking 5-20 minutes. This is the Coach's primary routine for teaching scientific thinking.**




**The purpose of daily coaching cycles is to review the problem-solving *process* and ensure it proceeds effectively / scientifically.**

**A coaching cycle is used to guide the Learner through the steps of the Improvement Kata by providing *procedural* inputs and course corrections, as the Learner applies the Improvement Kata pattern step-by step to a challenging, real situation.**

**Problems are not solved in coaching cycles. That happens through iteration (experimenting) toward the Target Condition.**

**A coaching cycle is a pause; i.e., a forum for the Coach and Learner to reflect on the last step, introduce course corrections if necessary, and plan the next step. Coaching cycles give managers and supervisors a structured approach for (1) facilitating the development of Improvement Kata skill and self-efficacy in their Learners and (2) further developing their own coaching skills.**

# PSYCHOLOGY BEHIND COACHING CYCLES

## For both the Coach and the Learner




**Cue**

**Daily schedule for Coaching Cycles**

**Reward**

- **Improving the focus process**
- **Improving one's skills**

Illustration from "The Power of Habit" by Charles Duhigg




# COACHING CYCLES ARE USED TO TEACH THE IMPROVEMENT KATA PATTERN

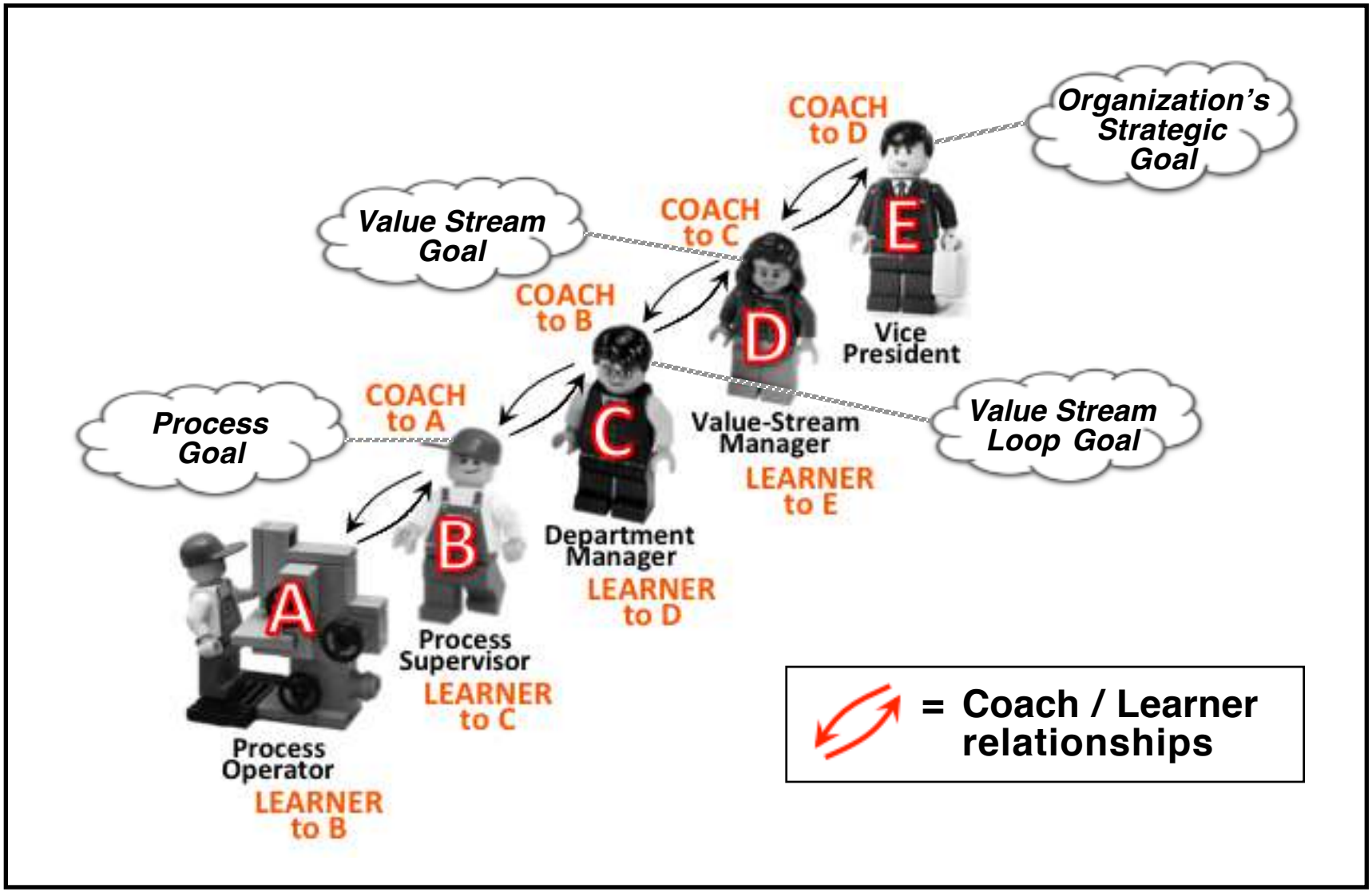
**Coaching cycles are used to guide the Learner through the steps of applying the Improvement Kata pattern to a real work process. They are a way to guide and give feedback to Learners in their Improvement Kata practice.**

## COACHING CYCLES ARE A FORUM FOR:

- ❑ **Assessing the current status of:**
  - **(a) The Learner's thinking**
  - **(b) The focus process.**
- ❑ **Finding the current Knowledge Threshold.**
- ❑ **Giving procedural guidance:**
  - **(a) To help the Learner be successful in designing and achieving a real, measureable, challenging, dated target condition through application of the Improvement Kata pattern.**
  - **(b) To help the Learner internalize the Improvement Kata pattern in a learn-by-doing manner.**
- ❑ **Practicing and improving your coaching skill.**



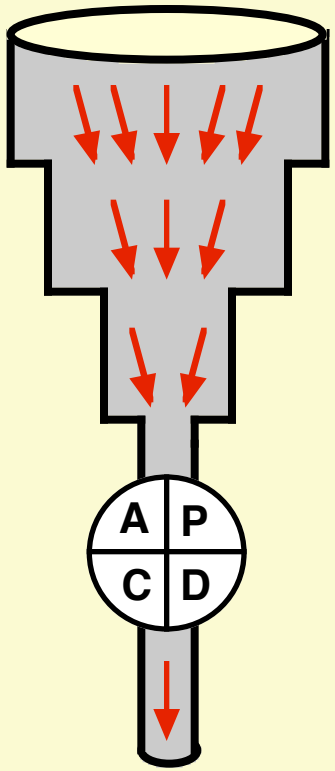

# COACHING CYCLES ARE CONDUCTED UP-AND-DOWN AN ORGANIZATION






# COACHING CYCLES ARE BUILT AROUND THE FIVE COACHING KATA QUESTIONS

## These Five Questions = One Coaching Cycle




1) What is the target condition?

2) What is the actual condition <u>now</u>?

   *-- (Then reflect on the last step) --*

3) What obstacles do you think are preventing you from reaching the target condition?

   Which *one* are you addressing now?

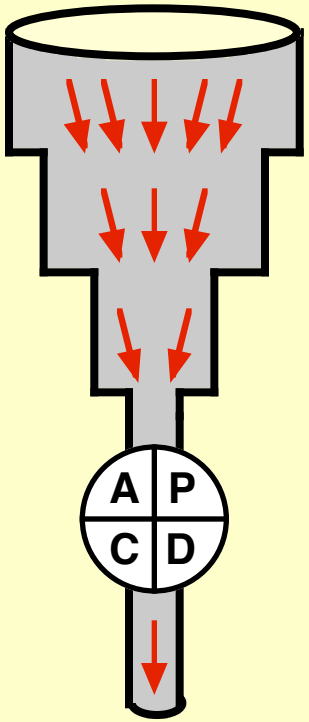
4) What is your next step?
   (next experiment) What do you expect?

5) How quickly can we go and see what we have learned from taking that step?




# EACH COACHING CYCLE SHOULD LEAD TO AN EXPERIMENT* (A NEXT STEP)

## Identify the Threshold of Knowledge & conduct the next experiment there, to see beyond that point with facts and data




1) What is the target condition?

2) What is the actual condition now?

*-- (Then reflect on the last step) --*

3) What obstacles do you think are preventing you from reaching the target condition?
Which *one* are you addressing now?

4) What is your next step?
(next experiment) What do you expect?

5) How quickly can we go and see what we have learned from taking that step?

**FRAME**:
You're framing and anchoring the dialog

**REFLECT**: You're reviewing the last experiment

**FOCUS**: You're confirming what is the current obstacle being worked on

**NEXT EXPERIMENT**: You're helping the Learner define and design the next step at the Threshold of Knowledge

**NEXT COACHING CYCLE**: You're agreeing on when the experiment will be done, the schedule for the next coaching cycle and what information the Learner should record before that coaching cycle

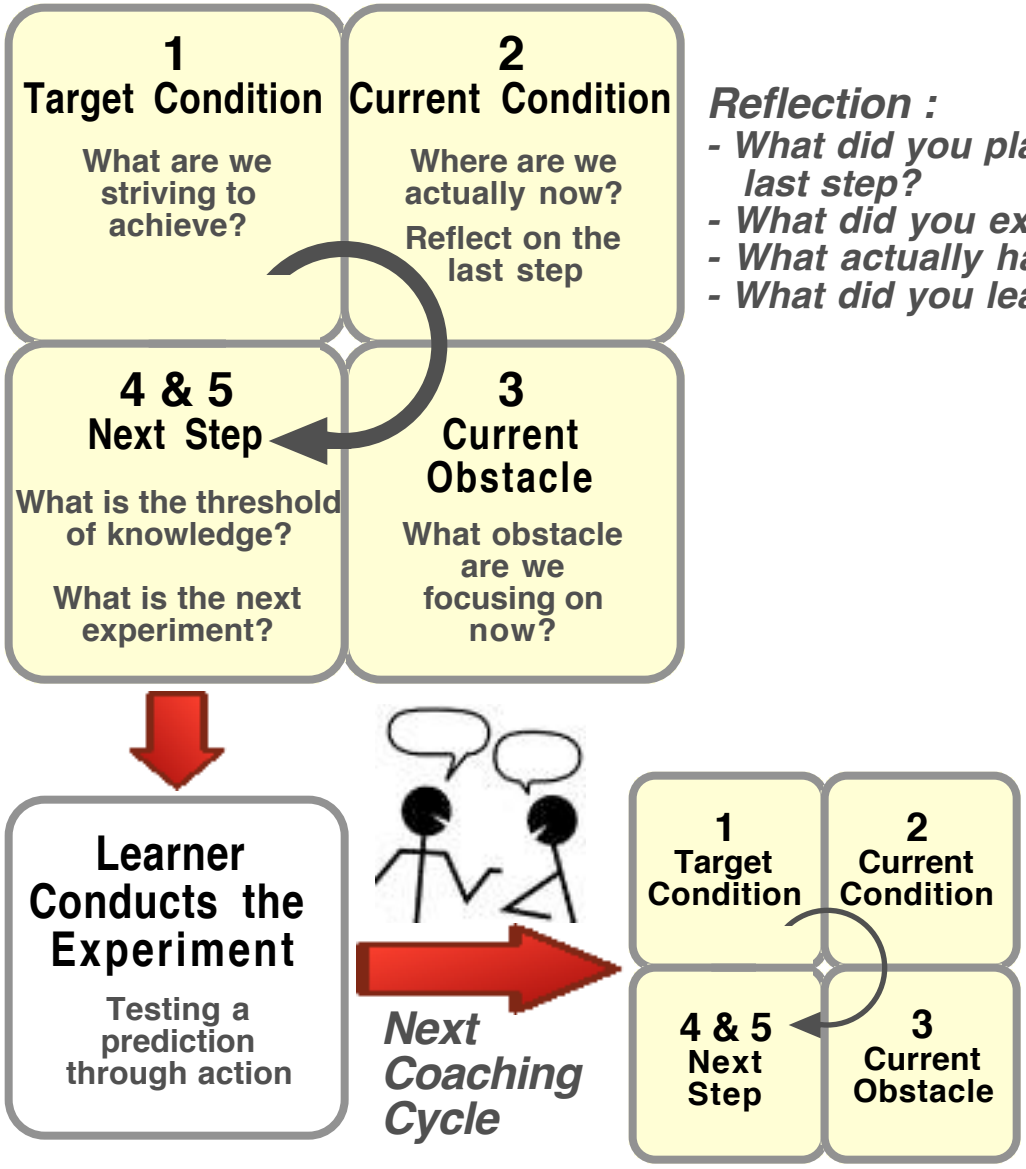
*(Remember, an *experiment* is a learning-experience that doesn't necessarily involve making a change. For instance, further analysis or go-and-see qualify as experiments.)

# THE COACHING-CYCLE PATTERN

## Follows the Five Coaching Kata Questions



**The Five Coaching Kata Questions follow a scientific pattern of thinking and acting, and provide a structured practice routine for both the Coach and the Learner.**




***Reflection :***
- *What did you plan as your last step?*
- *What did you expect?*
- *What actually happened?*
- *What did you learn?*

Based on a diagram by Don Clark




# KEEP YOUR FIVE-QUESTION CARD IN HAND DURING A COACHING CYCLE



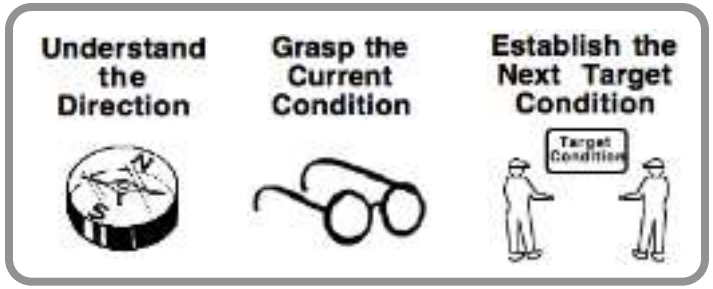

**The 5Q Card is available in the Appendix or at:**
**http://tinyurl.com/katacard**

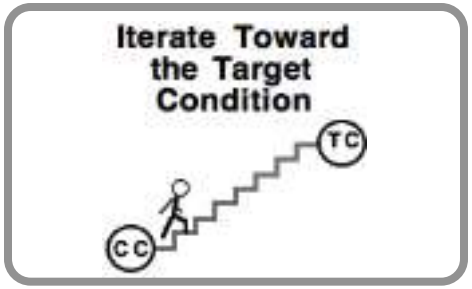
- **The card is your script for conducting coaching cycles.**
- **The card helps you acquire the habit of the coaching pattern, especially in Phase 1 of your coaching practice.**
- **In each coaching cycle you'll ask all questions on the front and back of the card, one at a time.**
- **You're teaching the Learner a systematic, scientific way of thinking by using the same pattern of enquiry in every coaching cycle.**
- **Be sure the Learner has a Five-Question Card too. Coaching cycles are not a 'gotcha' exercise.**

# COACHING CYCLES - TWO PHASES




Learner

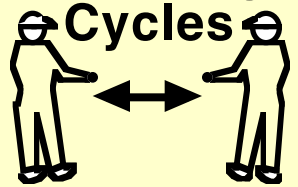



Coach's Activity:

**'Planning' Coaching Cycles**

**'Executing' Coaching Cycles**

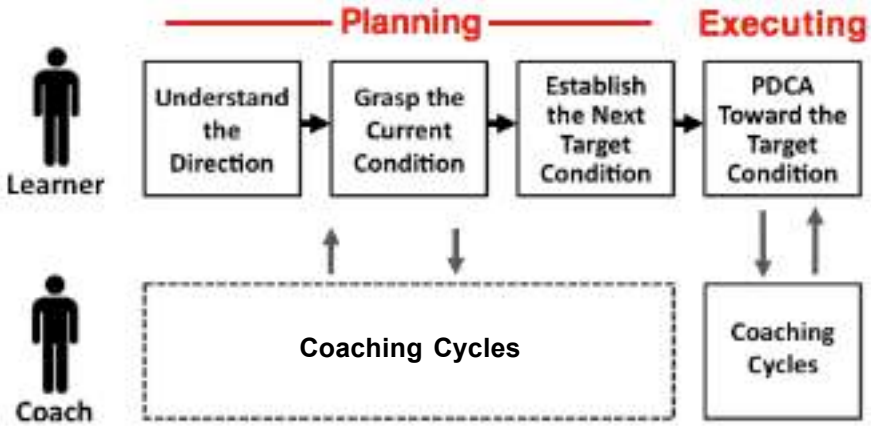



## In the PLANNING PHASE of the IK, before the Target Condition has been Set:

**These are daily, person-to-person coaching cycles done as the Learner carries out the first three steps of the Improvement Kata. The Coach escorts the Learner through the IK routines for understanding the direction, grasping the current condition and establishing the next target condition while using the Five Coaching Kata Questions.**

## In the EXECUTING PHASE of the IK, after the Target Condition has been Set:

**These are daily, person-to-person coaching cycles done as the Learner performs the fourth step of the Improvement Kata. The Coach escorts the Learner through the routine for iterating toward the established target condition while overtly asking the Five Coaching Kata Questions.**







# COACHING CYCLES IN THE *PLANNING* PHASE OF THE IMPROVEMENT KATA

**An important gage of a Learner's progress is how well s/he can carry out the "Understand the Direction," "Grasp the Current Condition" and "Establish the Next Target Condition" steps in the PLANNING phase of the Improvement Kata. Taking time and iterating to gain the perspective and understanding that these 3 steps provide is a vitally-important foundation for the EXECUTING phase. One of the most common mistakes is trying to get into the Executing phase too soon, before we've had a chance to analyze and learn more about the situation.**

**Interestingly, a Learner may in sum get more repetitions of the IK routines of the executing phase than of the routines for up-front analysis and planning, and can therefore develop a bias toward the executing phase. Good coaching in the planning phase is important to prevent the Learner from developing a habit of too hastily rushing through that phase and moving ahead based on their preconceptions.**

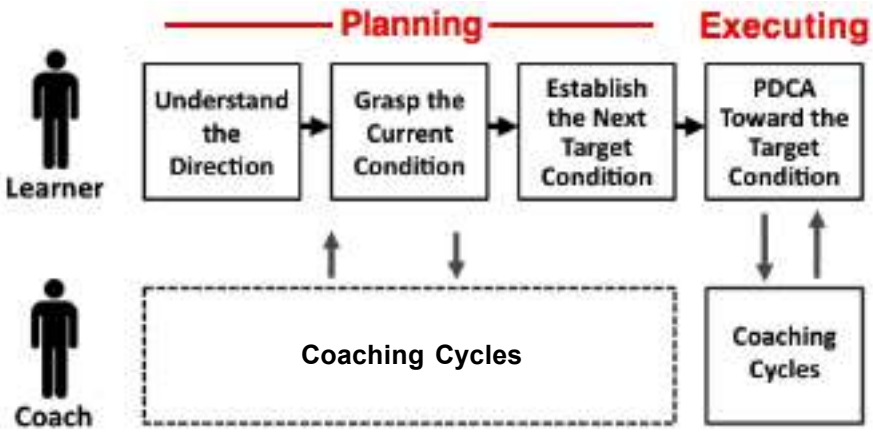
**Whether or not the Learner adequately does the up-front work of the planning phase is an indicator of their experience as an Improvement Kata practitioner and your skill as a Coach. Note that good coaching in the planning phase can be more difficult than in the executing phase, because there are a variety of routines to learn there.**




# THE 5 QUESTIONS IN THE PLANNING PHASE

**In planning-phase coaching cycles the Coach has to decide how overtly to ask the Five Questions. Once the Learner is somewhat experienced you can ask the Five Questions in any phase of the Improvement Kata and it will make sense. With a beginner Learner in the planning phase you might use the Five Coaching Kata Questions a little more like an internal guide for yourself. For example:**

| STEP 1 OF THE IK: Target condition = the Learner understands the challenge | | |
|---|---|---|
| **THE 5 QUESTIONS** | **What the COACH says** | **What the LEARNER might say** |
| **Q1) What is the target condition?** | "What step of the Improvement Kata are we in? What is the current target condition? | "Understand the Direction." |
| **Q2) What is the actual condition now?** | "What's the actual condition now? What do we know so far?" | "I know we have a goal of a 10% cost savings." |
| **Q3) What obstacles do you think are preventing you from reaching the target condition? Which one are you addressing now?** | "Well, that's just a metric, not a challenge. Where should the challenge come from?" | "I'm not sure. Our leaders?"<br><br>*(Note: This is the Knowledge Threshold in this coaching cycle)* |
| **Q4) What is your next step? What do you expect?** | "The challenge comes from the level above you, and is often derived from a future-state value stream map. Who has responsibility for your value stream's future-state map?" | "Tom Smith. I can meet with him to learn more about the design for our value stream and what it means for my process." |
| **Q5) How soon can we find out what we have learned from taking that step?** | "Great, how soon can we find out what we have learned from taking that step?" | "I should have the information tomorrow at this time." |







# COACHING CYCLES IN THE *EXECUTING* PHASE OF THE IMPROVEMENT KATA

**The Executing phase of the Improvement Kata has the most consistently-structured routines for the Learner. Here the Coach should ask the Five Coaching Kata Questions in every coaching cycle exactly as they are written on the card.**

**This phase is where the pattern of scientific thinking and acting tends to fall into place for the Learner, through daily practice of a simple, repeating, scientific cycle. Understanding the value of the Improvement Kata pattern, and developing an inclination to apply it to any goal, generally happens here.**





**The next chapter provides step-by-step instructions for conducting a coaching cycle in the executing phase**

# SCHEDULE COACHING CYCLES FOR EVERY DAY




**Coaching cycles typically take 5-20 minutes. If they consistently take longer than that it may indicate a flaw in the coaching.**

**For each of your Learners, schedule a regular coaching cycle at a set time near the start of the workday. The first coaching cycle should be early in the day so the Learner can take the next step that day if possible.**

**Companies that use coaching cycles often have a "Kata Time Zone" (for example between 9:00 and 11:00 AM) during which managers don't do email, meetings or phone calling.**

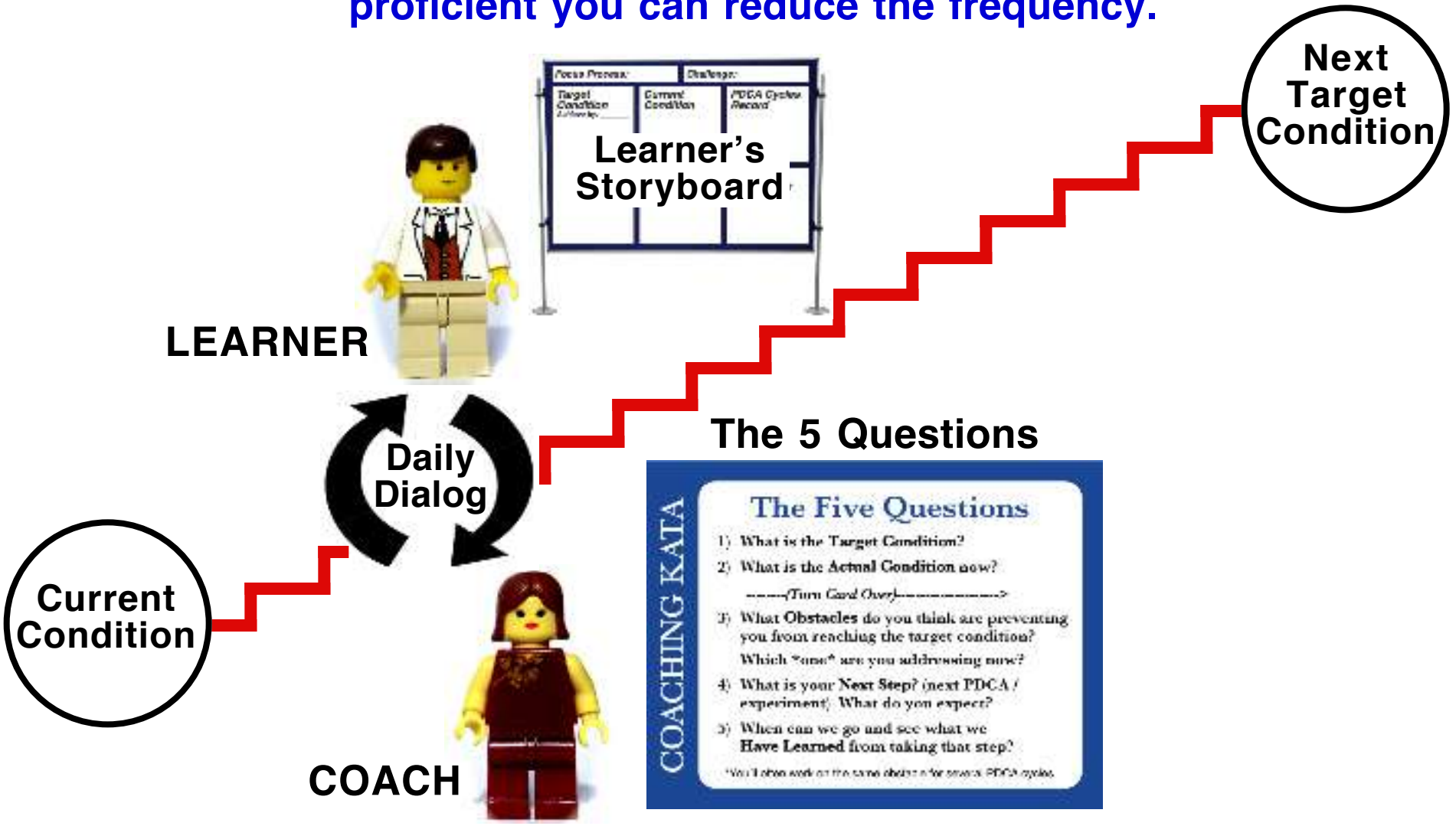



**After the morning coaching cycle, the Coach & Learner may do more coaching cycles that day as needed, since the Learner's steps and the follow up should be as rapid as possible.**

**Beyond the coaching cycle, you may also decide to accompany the Learner in taking the next step, to observe the Learner in action and provide additional coaching.**

# WITH BEGINNERS, TRY TO DO A COACHING CYCLE EACH TIME THE LEARNER TAKES A STEP

**A coaching cycle and any corrective input should happen as quickly as possible after the Learner takes a step. As the Learner becomes proficient you can reduce the frequency.**






# A COACHING CYCLE SHOULD NORMALLY TAKE 10 TO 20 MINUTES




**With practice, you should be able to conduct most coaching cycles with the Five Questions in 10-20 minutes.**

**It only takes 10-20 minutes because the coaching cycle is about reviewing the process of experimenting, not a forum for doing the experimenting itself. Questions at the Threshold of Knowledge aren't answered through deliberation and dialog in a coaching cycle, but through experiments between coaching cycles.**

**The Learner develops answers at the Threshold of Knowledge by conducting experiments *between* coaching cycles. The coaching cycle itself is about reviewing the last experiment and planning the next experiment.**

# WHY SCHEDULE COACHING CYCLES EVERY DAY?

## FOR THE COACH:

--> A beginner coach needs frequent practice. You are practicing to develop and keep improving you coaching skill.

--> The scheduled coaching cycle is a *cue* or *trigger* for the Coach and the Learner to practice their IK/CK behavior patterns.

--> To be consistent in providing feedback to the Learner.







## FOR THE LEARNER:

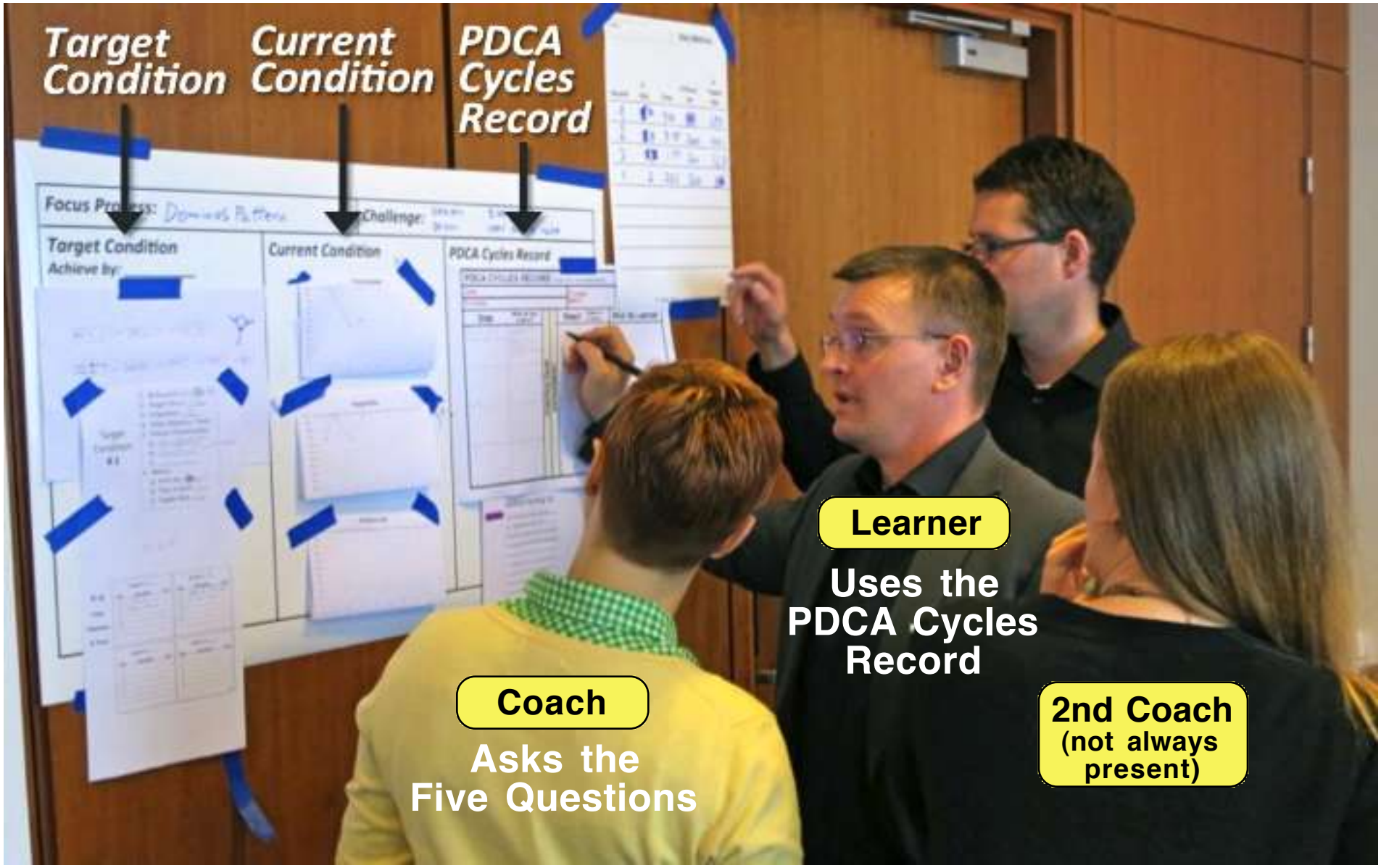
--> Training only once every few days would mean the Learner has too much time between training sessions to develop Improvement Kata skill and mindset. Short, frequent practice is better for the Learner in developing new and effective habits.

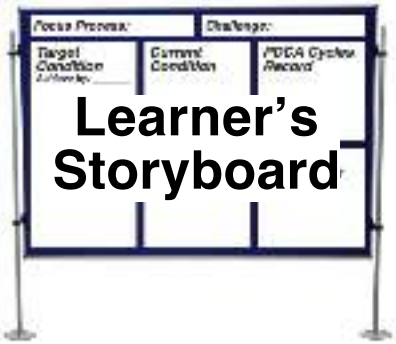
--> You're teaching the Learner to conduct simple, rapid and frequent experiments toward the target condition. If coaching cycles are infrequent then the Learner's steps will tend to get too big.




# DO COACHING CYCLES AT THE LEARNER'S STORYBOARD

## And as close to the focus process as possible






# USING THE LEARNER'S STORYBOARD

**The Learner's storyboard is a tool to support practicing the Improvement Kata and Coaching Kata routines. Once you've done some coaching cycles, the layout and information on the storyboard should flow naturally with the sequence of the Five Coaching Kata Questions.**

- **The Learner owns the storyboard and he or she should be the one updating it, not the Coach. Before the next coaching cycle begins, the Learner should have updated the storyboard based on the last experiment.**

**The Learner knows the Five Questions that are going to be asked (many users post the 5 Questions on the storyboard). So a coaching cycle is not a "gotcha" exercise, nor a freewheeling conversation, but a structured dialog designed as an information exchange that allows the Coach to discern what coaching the Learner should receive next.**

- **Encourage the Learner to keep the storyboard neat, capturing all key detail but in a simple and organized format that follows the Five Coaching Kata Questions. Updating the storyboard is important for cultivating the Learner's sense of ownership of the target condition and the process of experimenting toward it.**

- **Details often need to be modified or added while the Five Question dialog is happening and insights are gained. In these cases the Learner should update the Storyboard directly; during the coaching cycle. (Keep a pencil and eraser at the storyboard.)**

# USING THE LEARNER'S STORYBOARD

❑ **Have the Learner point. Pointing connects the question you're asking with a clear answer from the Learner, and encourages the Learner to capture necessary information in written form on the storyboard *before* the coaching cycle.**

❑ **When answering the Coaching Kata questions, ask the Learner to read only what he or she has written on the storyboard and then be silent. For instance, the Learner should simply read what he or she has written on the PDCA Cycles Record in advance, and then just wait. This does three things:**

1) **It allows the Coach to see how the Learner has been thinking, and then add clarifying questions and course corrections as needed.**
2) **It teaches the Learner to prepare for the coaching cycle, with the necessary information recorded on the storyboard forms beforehand.**
3) **It prevents the Learner from verbally making up answers during the coaching cycle dialog.**

**The Learner may struggle with the idea of just reading what they have already written down, even if it is good. They often want to discuss the whole story. Reading may seem too mechanical at first. As you get used to it though, you'll find that it avoids long winded explanations and gets the coaching cycle to the heart of the matter. It helps keep each coaching cycle short and focused on facts & data.**

# WHERE THE LEARNER'S FORMS GO ON THE LEARNER'S STORYBOARD

**Focus Process:** | **Challenge:**

## Target Condition

**Achieve by: _____**

TARGET CONDITION

## Current Condition Now

CURRENT CONDITION

BLOCK DIAGRAM

Exit Cycles

Takt

Pc/t

Range

Lowest Repeatable Time

## PDCA Cycles Record

Plan, Step & Metric | What do you expect? | Run the COACHING CYCLE | Conduct the EXPERIMENT | What happened? | What we learned

## Obstacles Parking Lot

Obstacle Parking Lot

COACHING KATA

### The Five Questions

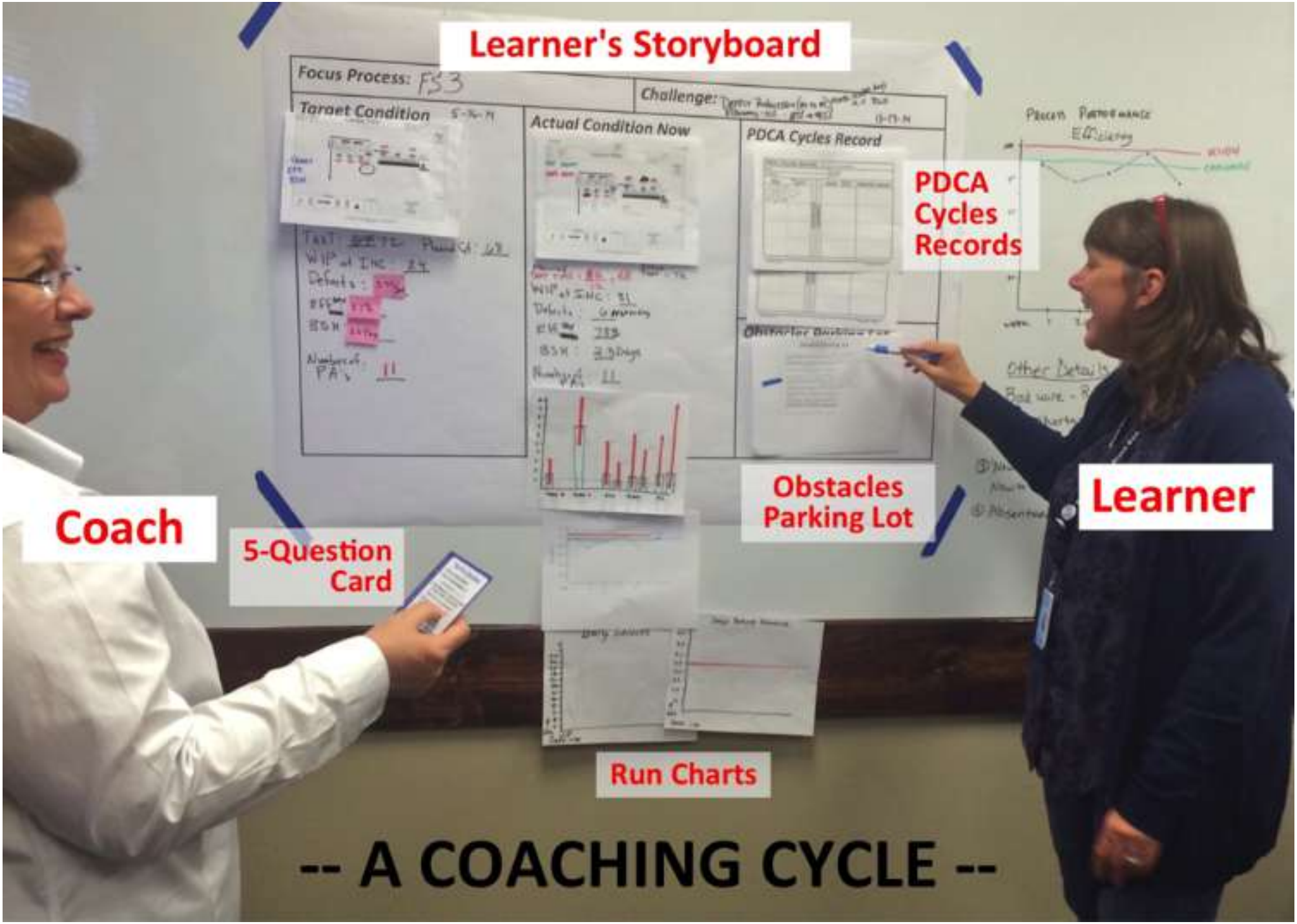
1) What is the **Target Condition**?
2) What is the **Actual Condition** now?
3) What **Obstacles** do you think are preventing you from reaching the target condition?
4) What is your **Next Step**? (next PDCA / experiment) What do you expect?
5) When can we go and see what we **Have Learned** from taking that step?

### Reflect on the Last Step Taken

Because you don't actually know what the result of a step will be!

1) What was your **Last Step**?
2) What did you **Expect**?
3) What **Actually Happened**?
4) What did you **Learn**?

Return


Learner's Storyboard
Focus Process: FS3
Challenge:
Target Condition
Actual Condition Now
PDCA Cycles Record
PDCA Cycles Records
Obstacles Parking Lot
Learner
Coach
5-Question Card
Run Charts
-- A COACHING CYCLE --

# In each coaching cycle watch for the Learner's

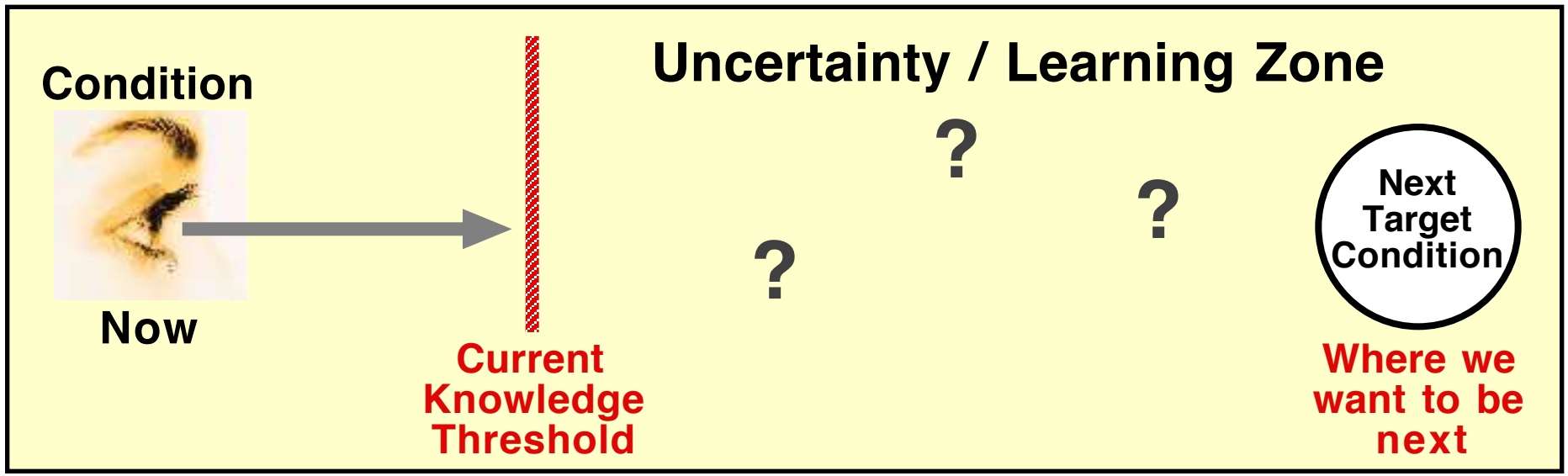
# *THRESHOLD OF KNOWLEDGE*



# THE CURRENT KNOWLEDGE THRESHOLD IS THE POINT AT WHICH THE LEARNER HAS NO FACTS OR DATA AND STARTS GUESSING

**Example:** ***You don't actually know what tomorrow's weather will be.***

**Example:** ***You plan a step, but you don't actually know what the result of that step will be.***






***There's a knowledge threshold in every coaching cycle.***

***When you hit a knowledge threshold, plan the next experiment there!***

# RECOGNIZING A KNOWLEDGE THRESHOLD

**They can be difficult for beginner coaches to spot because the learner is hesitant to say *"I don't know"***



**At any point in asking the Five Questions you may notice that a knowledge threshold has been reached. Develop an ear for it. When the learner starts using imprecise words such as...**

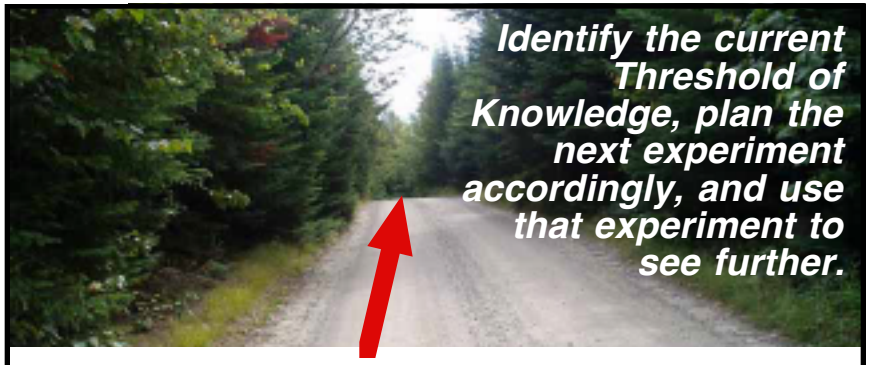
***"I think" - "probably" - "maybe" - "could" - "most likely"***
***"well..." - "on average" - "let's reduce/increase it by 50%"***

**...it's a sign of a knowledge threshold. The Learner has moved from facts and data to guessing.**

**Overconfidence can also be a sign of a knowledge threshold.**

# HOW TO HANDLE A KNOWLEDGE THRESHOLD

## This is critical Coaching Kata thinking & behavior




**A knowledge threshold is the learning edge, where the next experiment (next PDCA cycle) often lies.**

**Two key points to remember as a Coach are: (A) there is always a knowledge threshold, and (B) a knowledge threshold is not a problem. On the contrary, it's what we're looking for as we strive for the Target Condition. It tells us what we need to investigate and work on next.**

**This is an important moment for teaching the Learner what it means to think and act scientifically.**

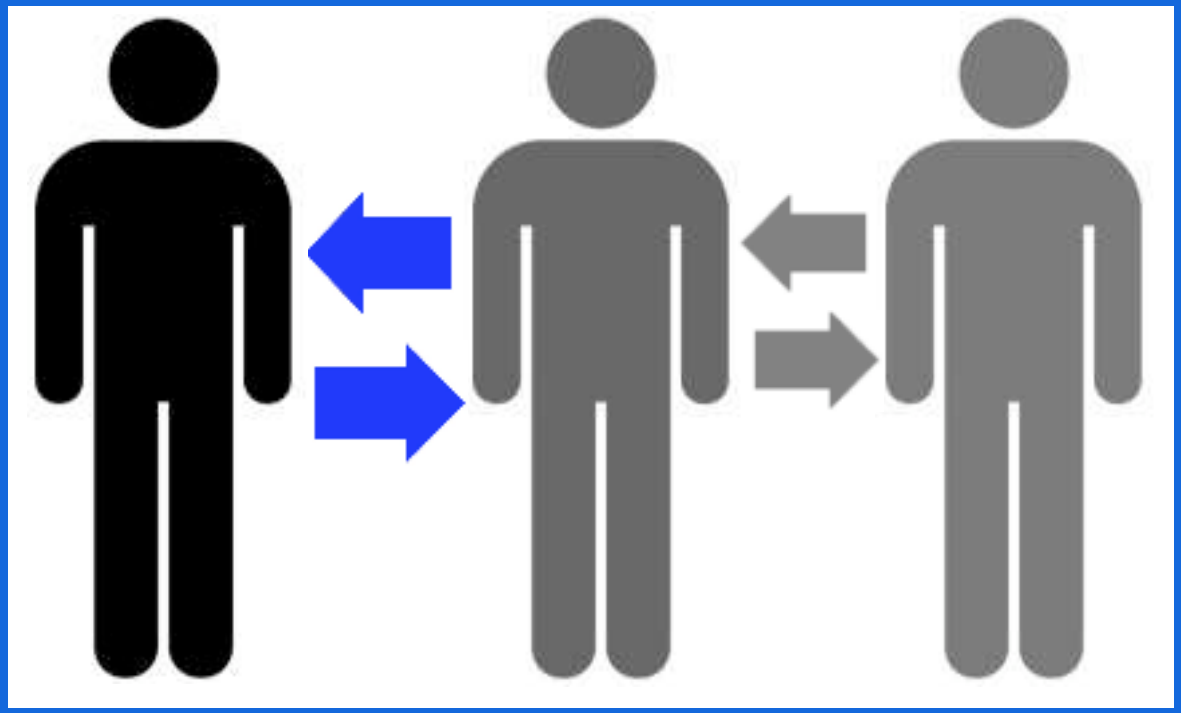
## WHAT TO DO

- **Congratulations, you found it! Focus your coaching cycle and your coaching input here. Use hearing the imprecise words from the Learner as a cue to ask clarifying questions and to go-and-see.**
- **The Learner shouldn't try to move beyond a knowledge threshold via conjecture. Teach the learner to see further by experimenting. Don't deliberate about what's beyond the knowledge threshold. Deliberate instead about how to conduct the next experiment.**

  **Ask:** ***"What do we need to learn now?" "How will we test it?" "How will we measure it?"***

- **Within the pattern of the 5 Questions, have the Learner set up and conduct the next experiment, then do another coaching cycle. The Learner should use the PDCA Cycles Record.**

# Guidelines for the 2nd Coach
## *Coaching the Coach*



2nd Coach

# THE IMPORTANT ROLE OF THE SECOND COACH

## The role of the 2nd Coach is to manage the Coach's coaching practice

**The apparent simplicity of the Five Coaching Kata Questions makes coaching seem easier to learn than it is. We underestimate what's involved in coaching and what it takes to learn it. It takes considerable practice with feedback to master the intent and pattern of the Coaching Kata.**

**If the Learner isn't learning the Improvement Kata or a team is not achieving its Target Conditions then the problem usually lies in the coaching. For the Coach, coaching cycles are not only a means of teaching the Improvement Kata but also their own experiments whereby the Coach checks and reflects on the process and result of his/her last coaching.**

**In other words, the Coach is deliberately *practicing* the Coaching Kata, and for this s/he needs someone with coaching experience to periodically observe him or her in conducting coaching cycles and to provide feedback. To *coach the coach* in other words.**

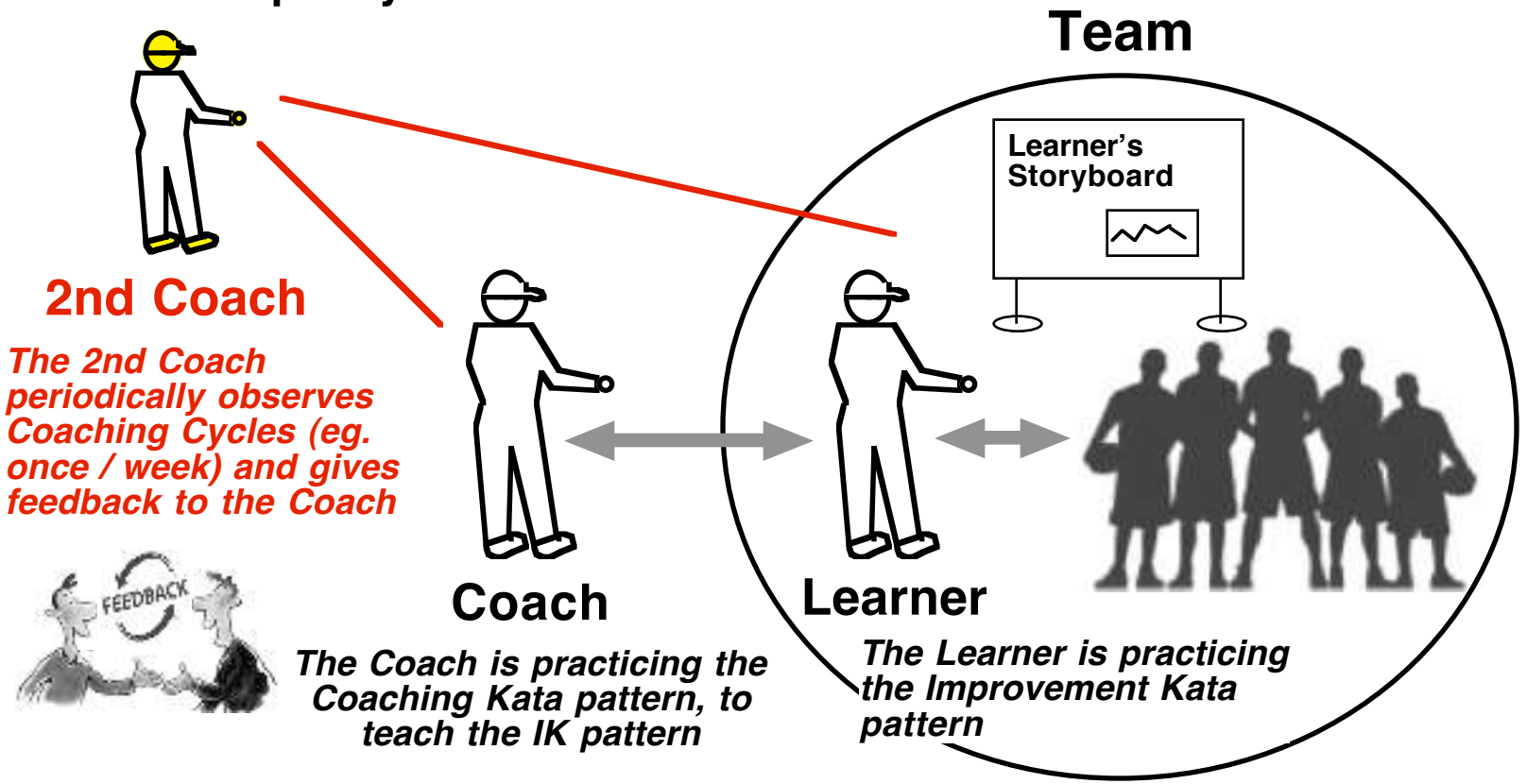
**The periodic presence of an experienced second coach during coaching cycles is essential if you want to develop managers with effective coaching skills.**

2nd Coach

# WHAT THE 2nd COACH DOES

**The 2nd Coach ensures that a Coach is teaching/coaching the Improvement Kata correctly, by periodically observing the Coach's coaching cycles to get a real grasp of the Coach's current coaching practice, and providing corrective feedback accordingly.**

**After the coaching cycle is finished, the 2nd Coach gives the Coach feedback on his coaching. Note that some Coaches prefer to get this feedback alone, while others like to have their Learners there. It's up to you.**



2nd Coach

# 2nd Coach Task
# OBSERVING COACHING CYCLES

**The 2nd Coach helps the Coach practice and learn effective Improvement-Kata coaching skills.**

**This is done is by periodically observing coaching cycles in action and providing immediate feedback to the Coach.**

**Once a Coach has passed Stage 1 the 2nd coach doesn't need to watch every one of the coach's coaching cycles. Determine the frequency based on the coach's current capability and need.**

| COACHING CYCLE OBSERVATIONS | | Process:<br>Date: |
|---|---|---|
| Coach: | Learner: | Start/End: |
| **Question** | **COACH** | **LEARNER** |
| *Review Challenge* | | |
| Q1: *Target condition?* | | |
| Q2: *Actual condition now?* | | |
| Reflect: *PDCA Cycles Record* | | |
| Q3: *Obstacles? Which one?* | | |
| Q4: *Next step? PDCA Record* | | |
| Q5: *When see what learned?* | | |
| What is the knowledge threshold? | Impressions: | |
| Key point(s) for this Coach to practice next: | Next coaching cycle: | |

**The 2nd Coach can use the *Coaching Cycle Observations* Form for this purpose (see Appendix). This form is kept simple since note taking during a coaching cycle has to be fast.**

**To help evaluate the coaching cycles s/he is observing, the 2nd Coach should refer to the individual points in the coaching-cycle instructions in this chapter and the next chapter.**

2nd Coach

# WATCH FOR COMMON COACHING ERRORS

| Coach asking error | What is it | Feedback / Countermeasure |
|---|---|---|
| **1. Closed Question** | Can be answered simply *yes* or *no*. | Start question with *"what," "how"* or *"Tell me more about..."* |
| **2. Solution-Oriented Question** | Advice disguised as a question. | Broaden the question. |
| **3. Seeking the One True Question** | Trying to ask the perfect question. Trying to achieve too much at once. | Coach only needs to help Learner to the next step (next PDCA). |
| **4. Rambling Question** | Asking the same question repeatedly in different ways. | Be silent for a moment or two while you formulate your question. |
| **5. Interpretive Question** | Too much interpretation of what the Learner said. | Coach should incorporate the Learner's words in their question. |
| **6. Rhetorical Question** | Statement of coach's opinion posed in question form. | Change your viewpoint. |
| **7. Leading Question** | Pointing the Learner to an option the Coach already has in mind. | Add options to the discussion. |
| **8. Failure to Interrupt** | Being too timid to interrupt and refocus the dialog. | Interject with a question that brings the coaching cycle back to focus. |
| **9. Interrupting** | Commenting while the Learner is talking. | Count 2 seconds after Learner stops speaking. |
| **10. Confrontational *"Why"* Question** | Seeming to challenge the Learner's motive and actions. | Replace *"why"* with *"what."* or *"tell me more about..."* |

Excerpted from *Coaching Questions: A Coach's Guide to Powerful Asking Skills*, by Tony Stoltzfus, Pegasus Creative Arts, 2008




# GIVING FEEDBACK TO THE COACH

## Feedback guidelines, 2nd Coach --> Coach

**Give feedback to the Coach *after* the coaching cycle. Ask if they prefer feedback with the Leaner present or in private.**

**1) Ask the Coach for their impressions of the coaching cycle:**

- **How do you think the coaching cycle went?**
- **Is the Learner working at their Threshold of Knowledge? How can you tell?**
- **What did you want to pay particular attention to in this coaching cycle?**

**2) Give your feedback on the coaching cycle, but do not make value judgements. Focus on concrete observations you made.**

- **I observe that...**

**3) What is the Coach concentrating on for the next coaching cycle?**

- **What do you want to pay particular attention to in the next coaching cycle with this Learner? (Just one point please!)**
- **How do you hope this will influence the Learner?**

Questions by Bernd Mittelhuber

**Agree on the date & time for next coaching cycle to be observed**

2nd Coach

# THE 2nd COACH'S NOTEBOOK




**The 2nd Coach should maintain a notebook of his/her observed coaching cycles, to keep track of observations and feedback given to the Coach.**

**Do this by keeping your completed "Coaching Cycles Observations" forms plus any other notes in a binder.**

**Include the three feedback guidelines on the previous page in your notebook for reference.**

| COACHING CYCLE OBSERVATIONS | | Process:<br>Date: |
|---|---|---|
| Coach: | Learner: | Start/End: |
| **Question** | **COACH** | **LEARNER** |
| *Review Challenge* | | |
| Q1: *Target condition?* | | |
| Q2: *Actual condition now?* | | |
| Reflect: *PDCA Cycles Record* | | |
| Q3: *Obstacles? Which one?* | | |
| Q4: *Next step? PDCA Record* | | |
| Q5: *When see what learned?* | | |
| What is the knowledge threshold? | Impressions: | |
| Key point(s) for this Coach to practice next: | Next coaching cycle: | |

# --- Guidelines for IK Coaches - Summary ---

## WITH THE RIGHT ATTITUDE YOU CAN BE A GOOD COACH

**Becoming an effective Improvement Kata coach takes a little more than internalizing the *Improvement Kata* and *Coaching Kata* routines.**

**It's easy for a coach to feel important, even superior, because of their experience and knowledge.**

**As a coach, be sure to check: How do you feel when you conduct coaching cycles with your learners? Do you feel like you're in a special position of honor and influence -- at the top or over others in importance or ability -- or do you feel like you're part of a larger team, working together to meet a challenge?**

**Ideally you coach with the realization that you too are learning. You're not at the top of anything, but on a path like everyone else.**

**And it's a great path to be on!**

# KEEP PRACTICING AND USING YOUR COACHING AND TEACHING SKILLS!



**Everyone in a managerial or supervisory role is essentially a teacher developing the next generation. By you practicing the pattern of the Coaching Kata you're developing management habits and management mindset to power the future of your organization.**

**As you move through your organization or to another organization, take the Improvement Kata and Coaching Kata with you. Once you've learned their patterns and acquired the habit they can be applied to any goal at any level.**

# NEXT, LET'S GO THROUGH AN EXECUTION-PHASE COACHING CYCLE STEP-BY-STEP

# Chapter 9

The Coaching Kata - 2

## PRACTICE ROUTINE: HOW TO DO A COACHING CYCLE WITH THE 5 QUESTIONS

### In the Executing Phase of the IK

Practice this Routine

SEE
COMPARE
INSTRUCT

1 2

3



4

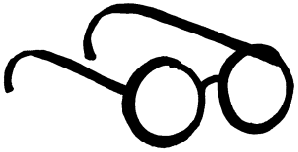
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# ORIENTATION

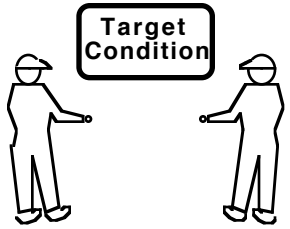
**Understand the Direction**



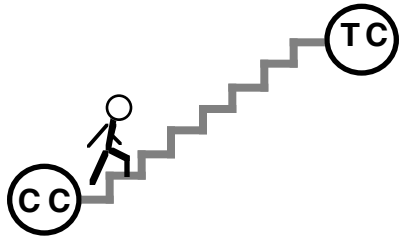

**Grasp the Current Condition**



**Establish the Next Target Condition**




**Iterate Toward the Target Condition**



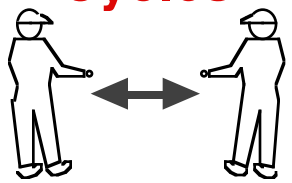



LEARNER

You are here

**'Planning' Coaching Cycles**

**'Executing' Coaching Cycles**



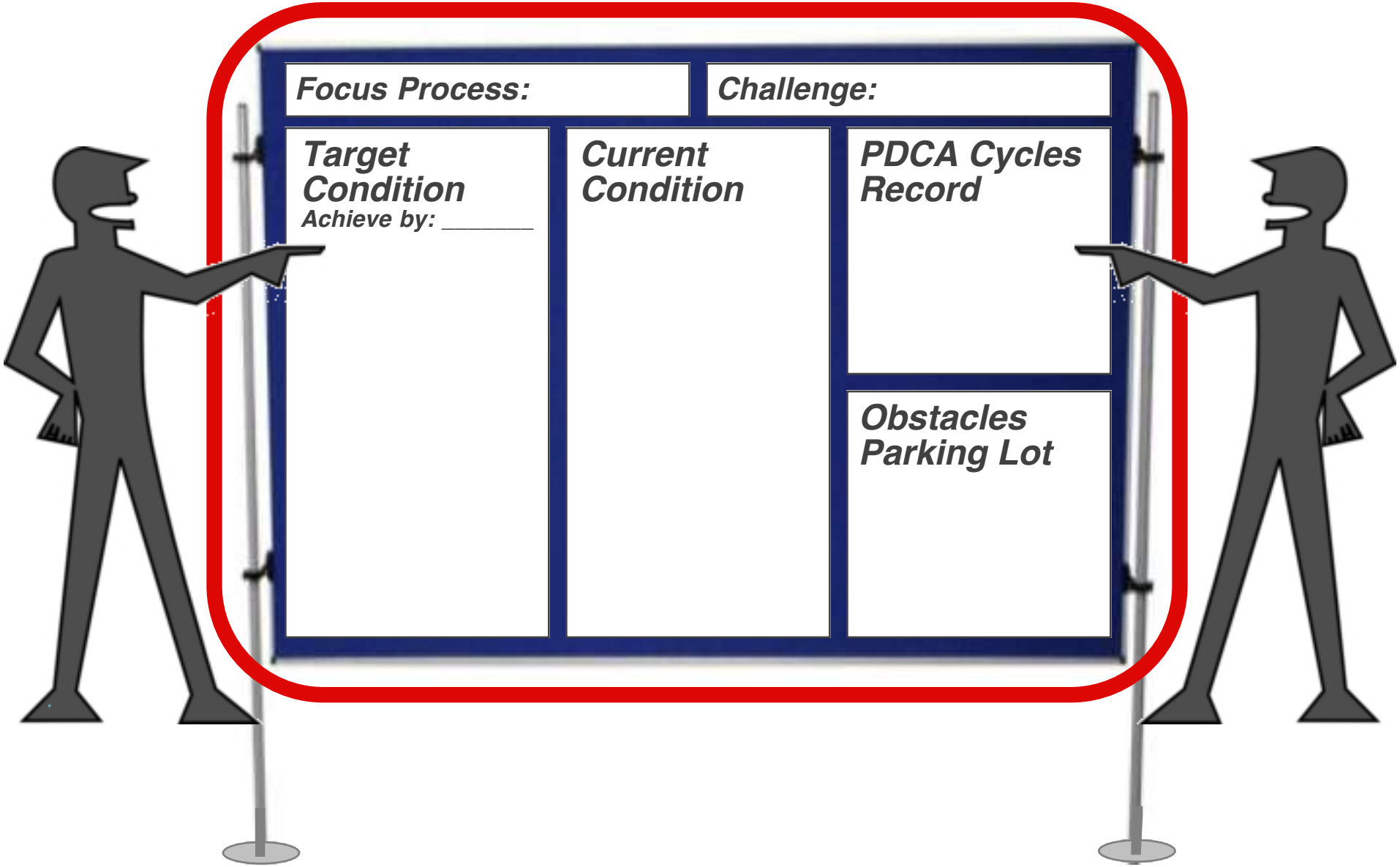



COACH

**Teaching scientific iteration**

# LEARNER'S STORYBOARD

## In the Executing phase the Learner and Coach use the entire storyboard



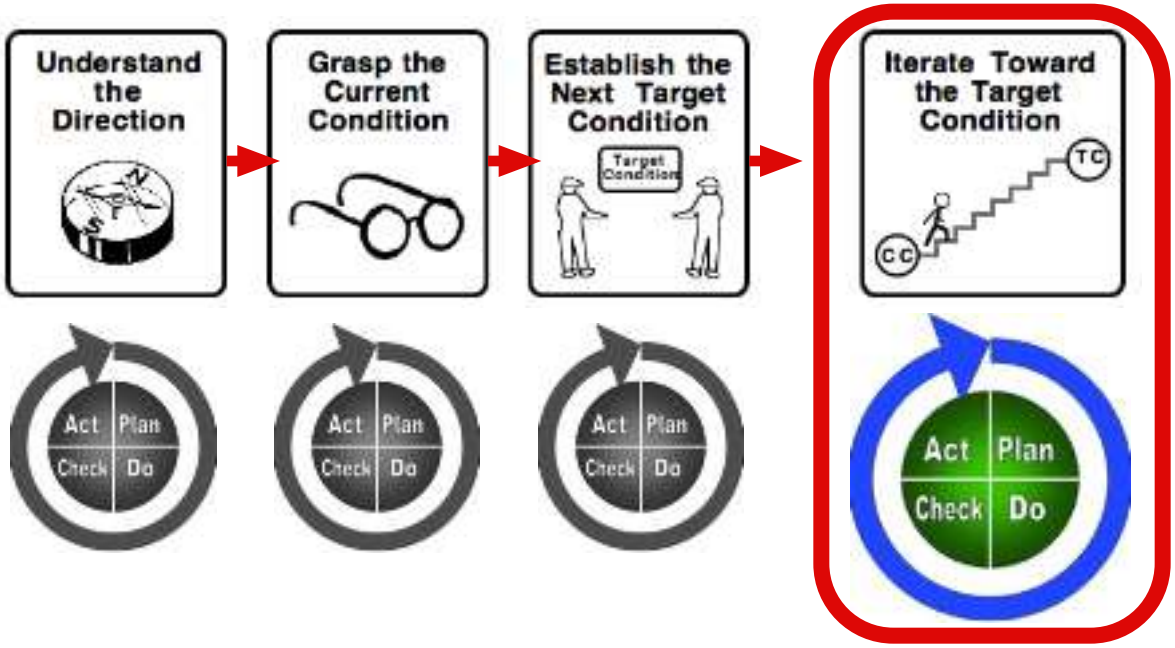

Concept
Overview

# PRACTICING A KEY IK COACHING SKILL

## The penny usually drops for the Learner at this step of the Improvement Kata. Practicing Step 4 of the IK is where the entire pattern of the Improvement Kata comes together for the Learner.

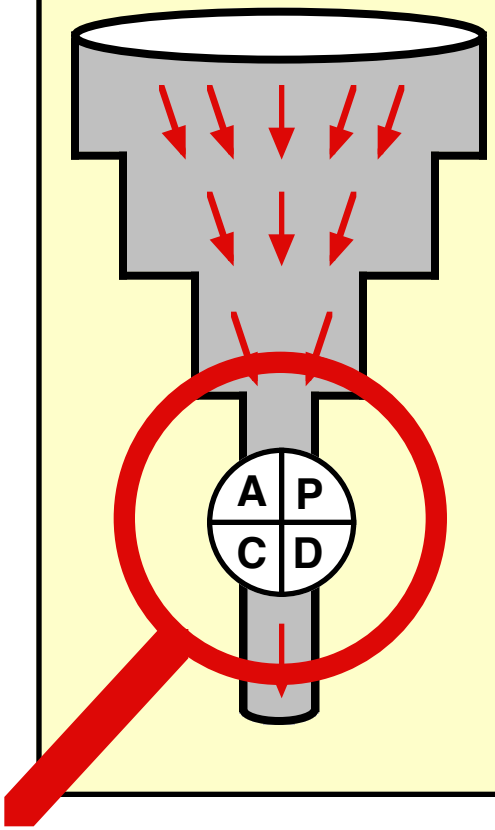
**A rule of thumb is that a Learner will need to work on three successive Target Conditions and conduct at least 25 PDCA cycles (each cycle paired with a coaching cycle) in Step 4 of the Improvement Kata before the pattern of the Improvement Kata *begins* to become a mental habit. Similarly, a Coach will probably need to conduct at least 25 coaching cycles in Step 4 of the Improvement Kata for the coaching pattern to *begin* to take hold.**

**A hurdle to learning the Improvement Kata pattern is that while scientific iteration and the Five Coaching Kata Questions apply in each step of the IK, you really learn these aspects when you get into Step 4. This means a Learner will need to have worked toward more than one Target Condition before s/he can start to apply the Improvement Kata pattern fluidly and naturally.**




**The patterns the Learner practices here will help them understand all four steps of the Improvement Kata**

# EACH COACHING CYCLE NOW LEADS TO SOME KIND OF EXPERIMENT TOWARD THE DEFINED TARGET CONDITION




1) What is the target condition?

2) What is the actual condition <u>now</u>?

*-- Flip card & reflect on the last step --*

3) What obstacles do you think are preventing you from reaching the target condition?
Which *one* are you addressing now?

4) What is your next step? (next experiment) What do you expect?

5) When can we go and see what we have learned from taking that step?

*Frame*

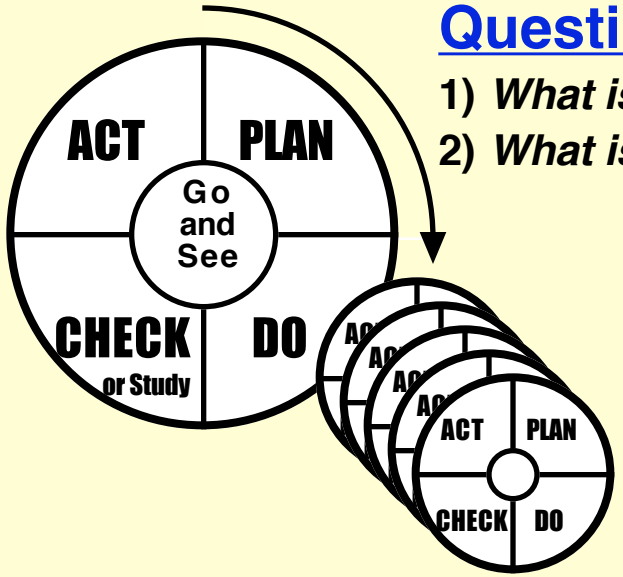
*Reflect*

*Focus*

*Next experiment*

*Next coaching cycle*

# THERE ARE BOTH LARGE AND SMALL PDCA CYCLES IN THIS PATTERN




**Questions 1 & 2 = Large Cycle**

1) *What is the target condition?*
2) *What is the current condition now?*

**Questions 4 & 5 = Small**

4) *What is your next step? What do you expect?*
5) *When can we go and see what we have learned from taking that step?*

Illustration from *Toyota Kata*, page 144

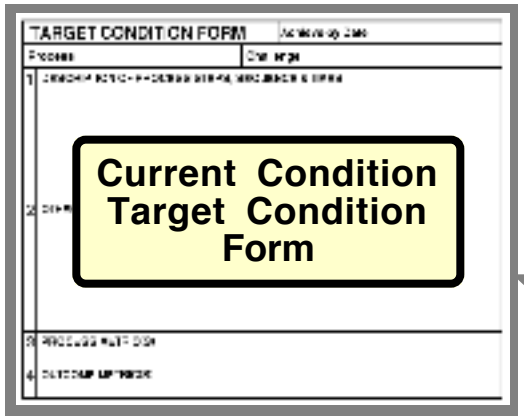


**As a Coach you should be aware that learning, improvement, adaptation and innovation come from an accumulation of the small PDCA cycles.**

**It's these cycles, in particular, that you'll be coaching. These small cycles occur at the "Threshold of Knowledge."**

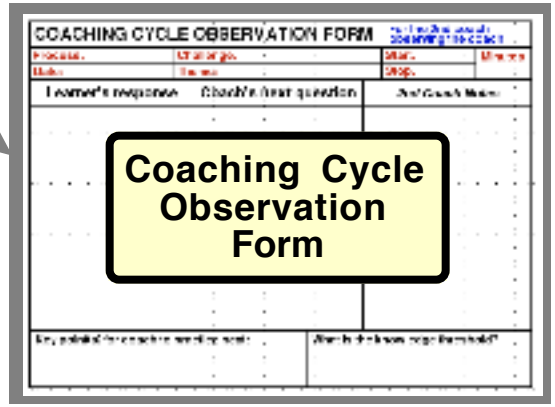
# MAIN FORMS IN AN EXECUTING COACHING CYCLE

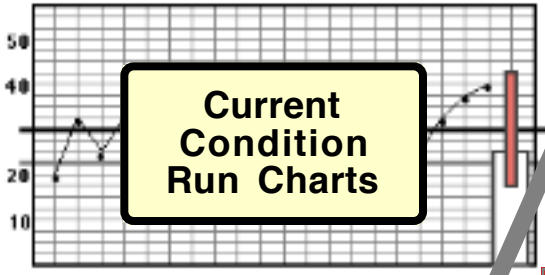
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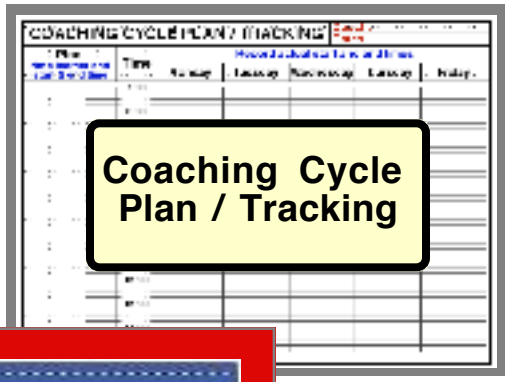


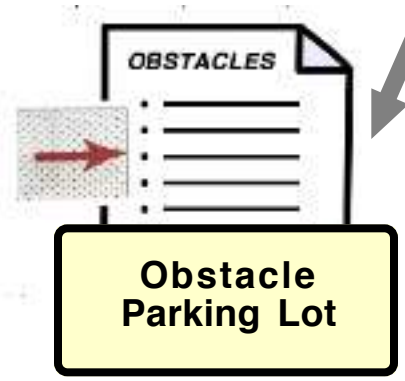


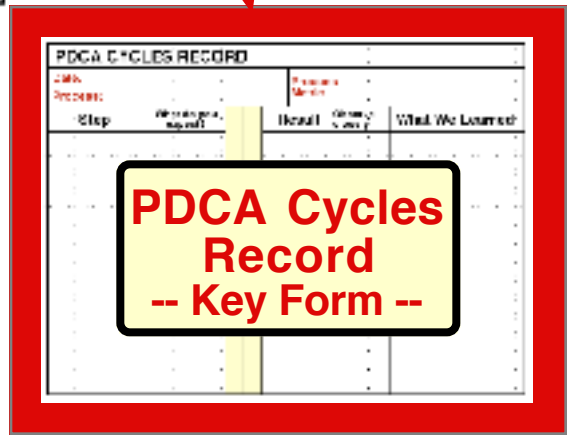


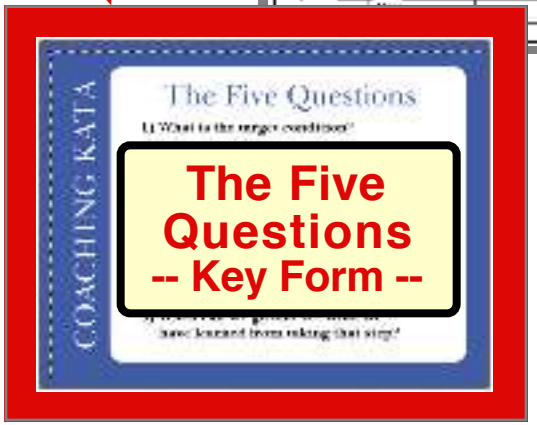


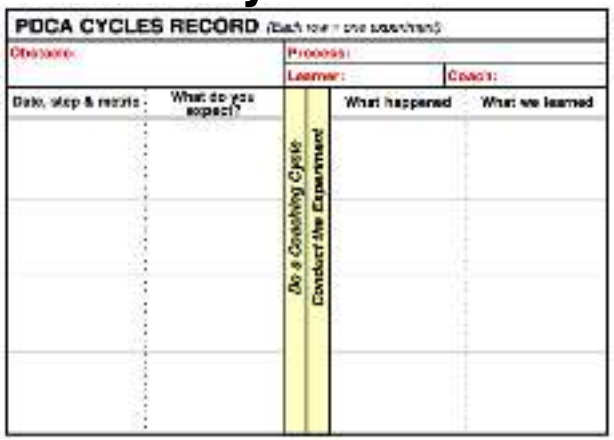




**Explained in the Chapter about STEP 4 of the Improvement Kata**

# THE TWO KEY FORMS IN THE EXECUTING PHASE

## PDCA Cycles Record


PDCA CYCLES RECORD

| Obstacle: | | Process: | |
|---|---|---|---|
| | | Learner: | Coach: |

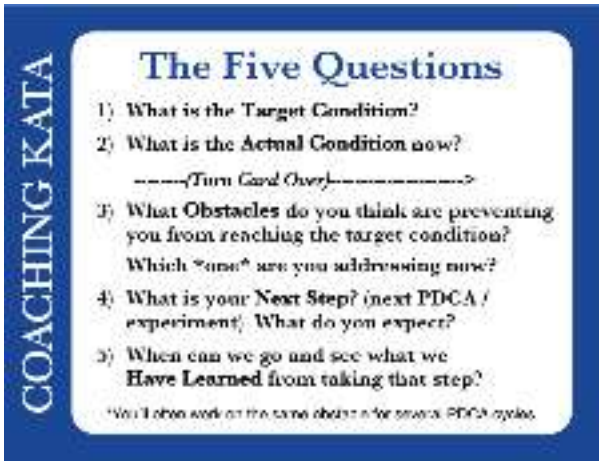
| Date, step & results | What do you expect? | Do & Coaching Cycle: Conduct the Experiment | What happened | What we learned |
|---|---|---|---|---|
| | | | | |
| | | | | |
| | | | | |
| | | | | |

Used by the Learner



Target Condition

The 5 Questions




Used by the Coach

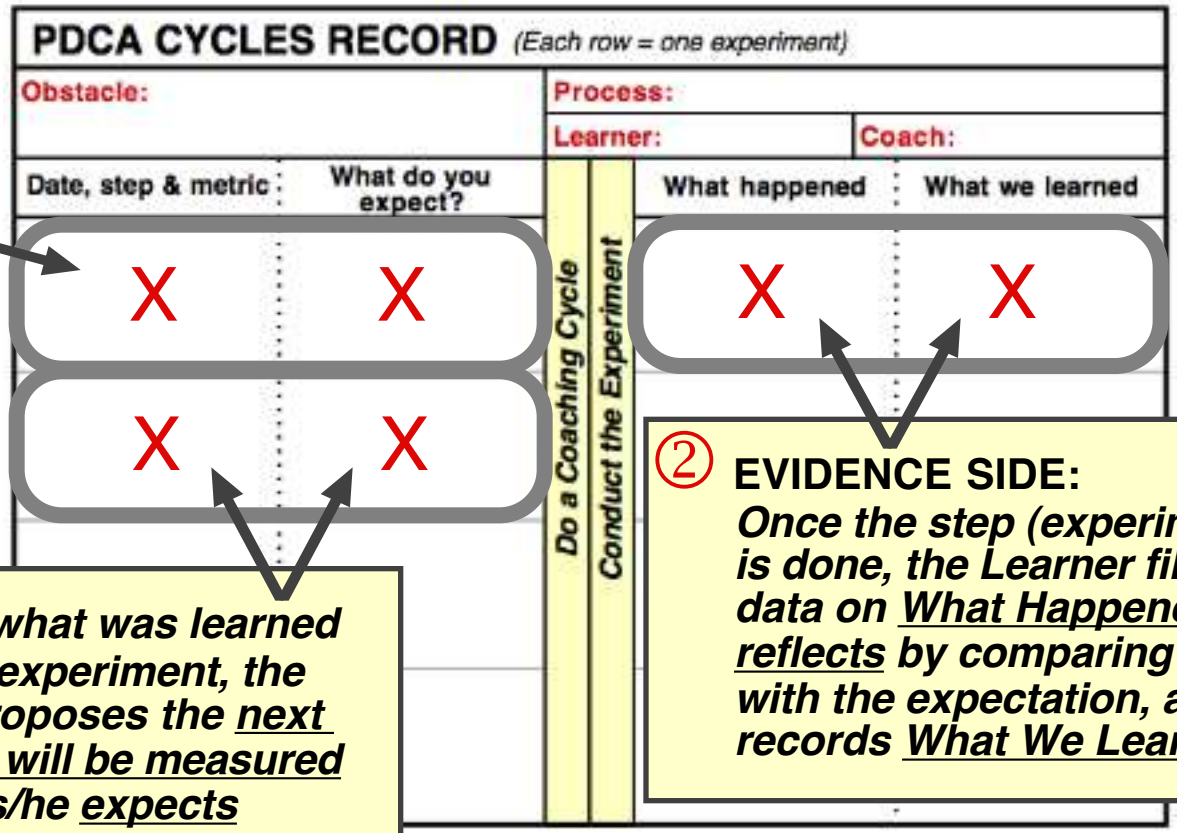


Current Condition

# Reminder: HOW THE LEARNER SHOULD BE USING THE PDCA CYCLES RECORD

**The PDCA form is read left-to-right. Each row = one experiment. The pattern of the form repeats after each experiment.**

① **PREDICTION SIDE:**
***Before the first coaching cycle the Learner proposes the 1st step, what will be measured, and what s/he expects in the first two boxes of the form***




② **EVIDENCE SIDE:**
***Once the step (experiment) is done, the Learner fills in data on What Happened, reflects by comparing that with the expectation, and records What We Learned***

③ ***Based on what was learned in the last experiment, the Learner proposes the next step, what will be measured and what s/he expects***

**The information on the PDCA Cycles Record should be recorded by the Learner before the coaching cycle. During the coaching cycle you will either validate the Learner's proposed next step (next experiment), or help the Learner fine tune his/her plan for the next step.**

# WHY YOU HAVE THE LEARNER USE THE PDCA CYCLES RECORD

- It teaches the Learner the scientific pattern of thinking and acting.
- It forces the Learner to write down what they expect to happen.
- It forces the Learner to think things through before the next coaching cycle.
- It teaches the Learner to document facts and data in writing, rather then relying on verbal communication and assumptions.
- It has the Learner prepared for the next coaching cycle. The Learner knows what s/he is going to present, instead of making things up or trying to recall from memory.
- It helps the Coach focus on experimenting instead of just on getting through the Five Questions.

# COACHING CYCLE DO'S AND DON'TS





| | |
|---|---|
| **Schedule daily coaching cycles** | **Conduct coaching cycles only infrequently or irregularly** |
| **Conduct your first daily coaching cycle early in the day, so the Learner can do the next step (the next experiment) that day** | **Do the first coaching cycle near the end of the day** |
| **Proceed systematically by following the 5 questions** | **Permit unstructured, meandering disorganized discussions** |
| **Determine whether or not the Learner is operating within the corridor of the Improvement Kata** | **Ask questions to audit if the Learner is doing what they said they'd do** |
| | **Ask questions to get the Learner to implement your preconceived solutions** |





| | |
|---|---|
| **Ask the 5 questions while standing** | **Conduct coaching cycles in the office at the process.** |
| **Have the Learner point to items on the storyboard while s/he is talking.** | **Just talk** |
| **Have the Learner retime and graph the process metric before the coaching cycle.** | **Use old current-condition data** |
| **Remember, Question 5 is about** *"What are we learning?"* | **Ask Question 5 as** *"When will you have it done?"* |
| **End the coaching cycle when the next step and the expectation are clear and written on the PDCA Cycles Record** | **Keep on discussing possibilities after the next experiment has been defined** |

# PRACTICE THE 5 QUESTIONS SO YOU CAN *LISTEN*

**"Most people do not listen with the intent to understand; they listen with the intent to reply"** ~ Stephen R. Covey

**Coaching supports both the develoment of Improvement Kata skills in the Learner and the attainment of target conditions. Coaching cycles are your method for daily teaching, and the Five Questions make up the flow of the dialog between you and the Learner in the *Executing* phase.**

**However, beginner coaches are usually mechanical as they are getting accustomed to going through the Five Questions. In your beginner-coach stage you'll probably be too focused on the Five Question card and not enough on seeing what the Learner is saying and whether that conforms to the intent of the Improvement Kata pattern. Until asking the Five Questions becomes habitual for you it will naturally be a struggle to ask the 5Q *and* be assessing what the Learner is doing.**

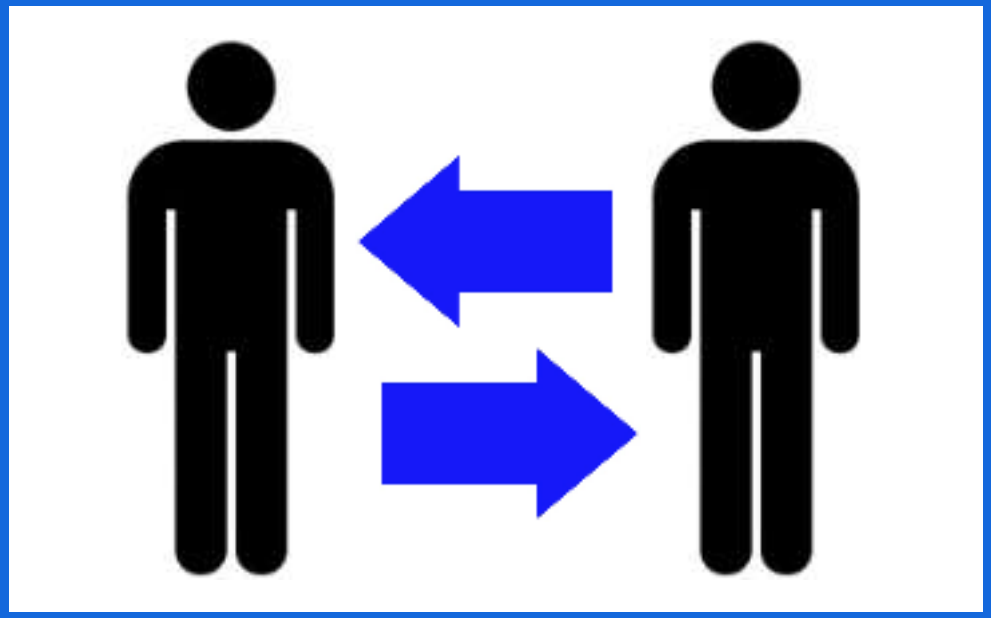
**Here are 3 practice routines to help you get proficient with the 5Q and allow you to shift more of your attention to what the Learner is doing:**

- **--> Pay close attention to the content of the Learner's PDCA Cycles Record. This helps you focus on PDCA instead of just on the Five Questions.**
- **--> Get frequent practice with the Five Questions by also using them at other times daily -- for instance in meetings -- not just during coaching cycles.**
- **--> In Stage 1 of your practice state the Five Questions exactly as they are written on the card, so they will grow into a habit.**



# Practice Routines

# A Coaching Cycle Step-by-Step



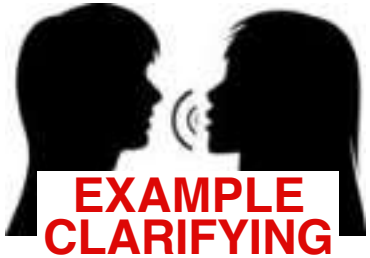
The Coach's routine in an Executing-phase coaching cycle looks like this

**This Chapter Includes**





INSTRUCTIONS



EXAMPLE CLARIFYING QUESTIONS



KEY POINTS

# Practice Protocol: WHAT THE LEARNER SHOULD DO

**If possible have the Learner point & *show you* what they are talking about**

| | Coach's Question: | |
|---|---|---|
| 0 | **What is the challenge?** | Learner explains what s/he understands the overarching challenge to be, which comes from the level above the Learner. |
| 1 | **What is the target condition?** | Learner reads through the description of the target condition that's on the storyboard, pointing to the items as s/he reads. |
| 2 | **What is the actual condition now?** | The Learner reads through the facts, data and diagrams on the storyboard that describe the current condition as it is <u>now</u> (not the initial current condition). The Learner should point as s/he reads. |
| REFLECTION | **What did you plan as your last step?** | Learner reads the first box on the PDCA Cycles Record. |
| | **What did you expect?** | Learner reads the second box on the PDCA Cycles Record. |
| | **What actually happened?** | Learner reads the third box on the PDCA Cycles Record. |
| | **What did you learn?** | Learner reads the fourth box on the PDCA Cycles Record. |
| 3 | **What obstacles do you think are preventing you from reaching the target condition?**<br>**Which *one* are you addressing now?** | Learner reads through the items on the Obstacles Parking Lot and then points to the obstacle they are currently working on. The Learner should have an arrow next to this obstacle.<br><br>The Learner may work on one obstacle for several PDCA cycles. |
| 4 | **What is your next step? (next experiment)**<br>**What do you expect?** | Learner proposes the next step, reading the first and second boxes in the next row of the PDCA cycles record. Ensure the Learner is designing a good next experiment before you approve it. |
| 5 | **How quickly can we go and see what we have learned from taking that step?** | Learner proposes date & time for the next coaching cycle. Ensure that the Learner is doing the experiment as soon, quickly & cheaply as possible. Agree on facts & data to bring to next coaching cycle, and you're done. |

Begin Here

# BEGIN THE COACHING CYCLE BY PUTTING THE LEARNER AT EASE

## A coaching cycle does not judge success or failure

-> ***Begin by greeting one another.***

-> ***Stand next to the Learner, facing the Learner's storyboard, rather than always facing the Learner head on.***

-> ***At the beginning, explain the coaching method to the Learner so s/he can understand what is taking place.***



**A coaching cycle is an interaction, not an audit or surprise check. The Learner knows when the Coach is coming, what s/he will ask (the 5 Questions) and prepares the information on the storyboard in advance of the coaching cycle.**

**Novice learners may perceive coaching as meaning they did something wrong, but the purpose is *not* to control or to get people to do what they say. A coaching cycle is a dialog, not an exercise of authority.**

**There should be a genuine interest in both you and the Learner in the target condition you are trying to achieve, how you are proceeding, what you are learning and what will be the next step.**

# HELP THE LEARNER FEEL OK BEING A BEGINNER



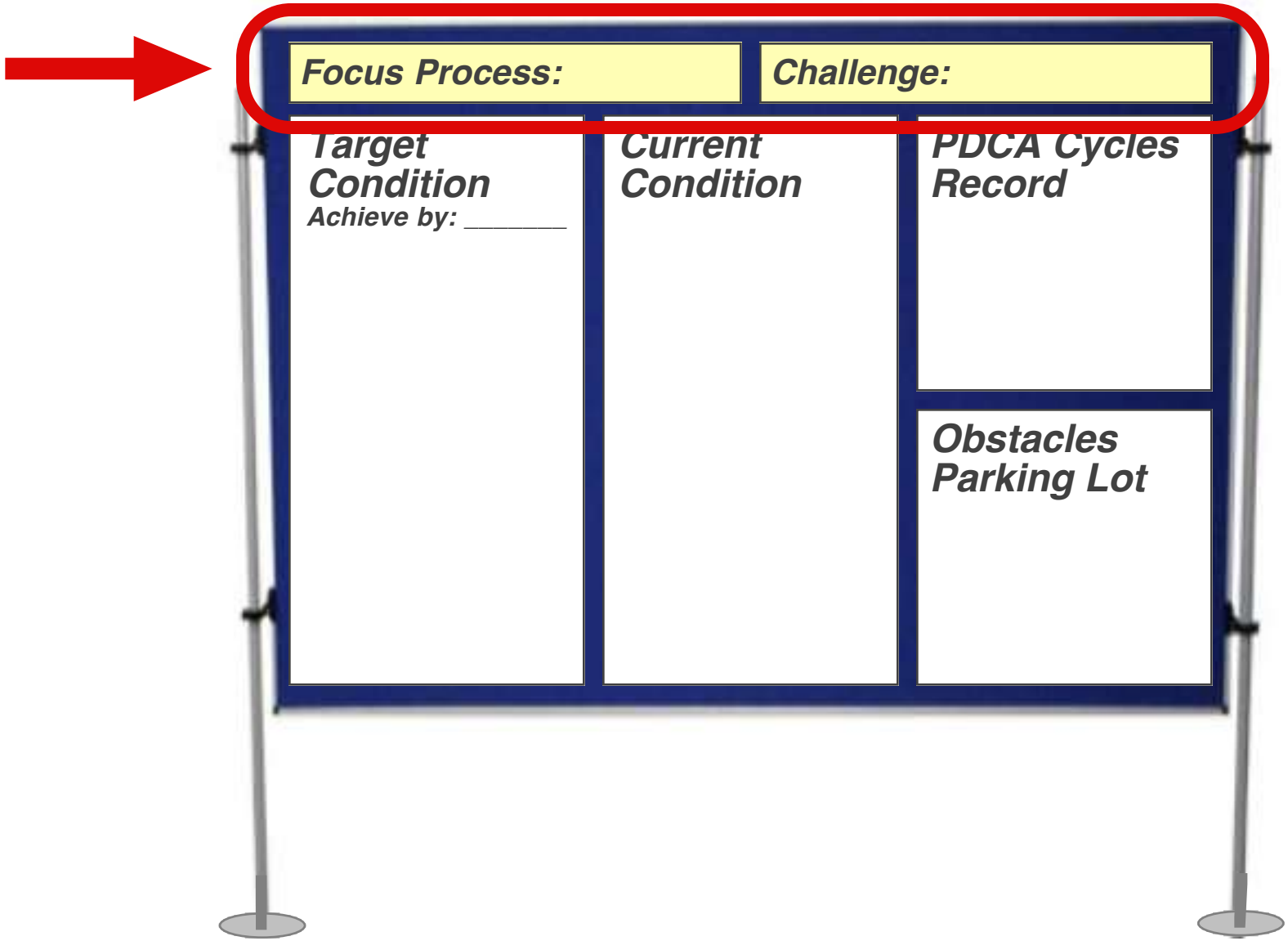
**It can be uncomfortable to be a beginner, because you feel unsure of yourself and lose a sense of identity. A beginner becomes vulnerable.**

**One key to putting the Learner at ease may be to help them realize it's normal to be a beginner, just like an athlete, with the Improvement Kata routines. Your Learner will naturally try to be skillful right from the start, especially if you are his or her boss. So it can help to create a mindset that it's OK to make mistakes and of enjoying the discovery and learning process.**

**Feel free to explain to the Learner that what s/he's doing is practicing a skill pattern to make it a habit. Many of us practice with more interest and motivation when we know what we're doing and why.**

# ASK THE LEARNER *WHAT IS THE CHALLENGE?*

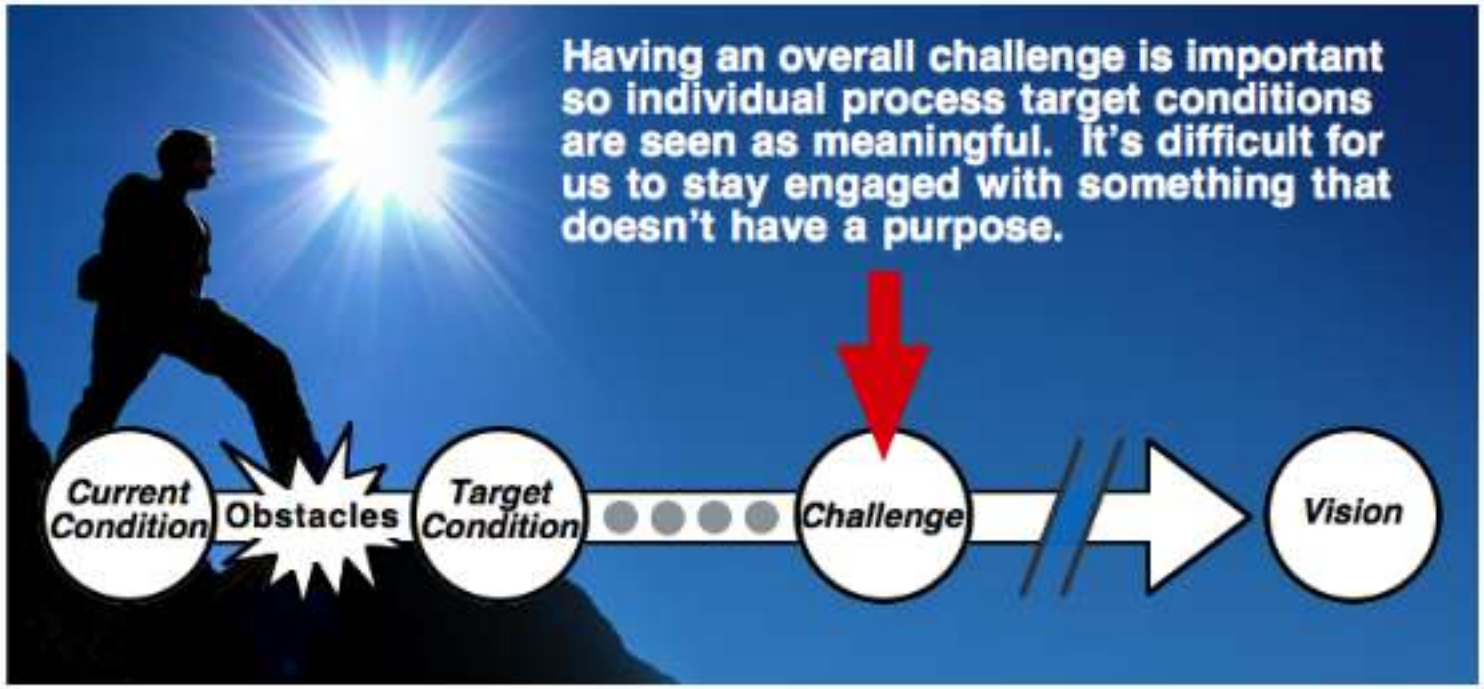
**Following the flow of the Storyboard, have the Learner name the focus process and state the overarching Challenge, i.e., the direction in which s/he is striving**



# THE CHALLENGE FRAMES THE COACHING CYCLE

**Before you begin the Five Question coaching dialogue, have the Learner reiterate the overarching Challenge they're working toward.**

**This connects the Learner's Target Condition to the larger business objective from the level(s) above them and helps the Learner recognize how his or her efforts fit in and connect with the bigger picture. The rest of the Coaching Cycle dialog is anchored by the Challenge.**

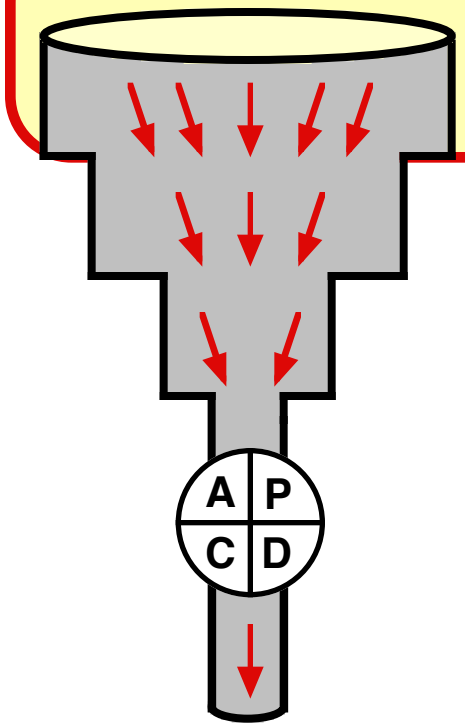



**Now you can get into asking the Five Coaching Kata Questions**



# Questions 1&2

## FRAMING & ANCHORING
## Orienting Yourselves




**1) What is the target condition?**

**2) What is the actual condition now?**

*-- Flip card & reflect on the last step --*

3) What obstacles do you think are preventing you from reaching the target condition?
Which *one* 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?



# CLARIFYING QUESTIONS FOR QUESTION 1

*(Target Condition)*



**--> The target condition should be measureable, have an achieve-by date and tie in to the overall challenge.**

- ***"Please read through the target condition."***
- ***"What do you want to be happening?"***
- ***"What is the pattern you're trying to achieve?"***
- ***"What are the intended process steps and sequence?"***
- ***What is the achieve-by date?***

- ***"Tell me about how this target condition relates to the overall challenge."***

- ***"Can you describe the target condition with numbers?"***
- ***"How are you measuring it?"***
- ***"What is the process metric? What value do you want it to have?"***
- ***"What is the outcome metric? What value do you want it to have?"***



# CLARIFYING QUESTIONS FOR QUESTION 2

*(Current Condition)*



**--> Question 2 refers to the current condition <u>now</u>, not the initial current condition.**

- ***"What are the latest facts and data for the current condition now?"***
- ***"How do you know?"***
- ***"Do you have data?"***
- ***"Can you show me?"***

**--> From this point forward a useful question is:**

- ***"What do you think?"***

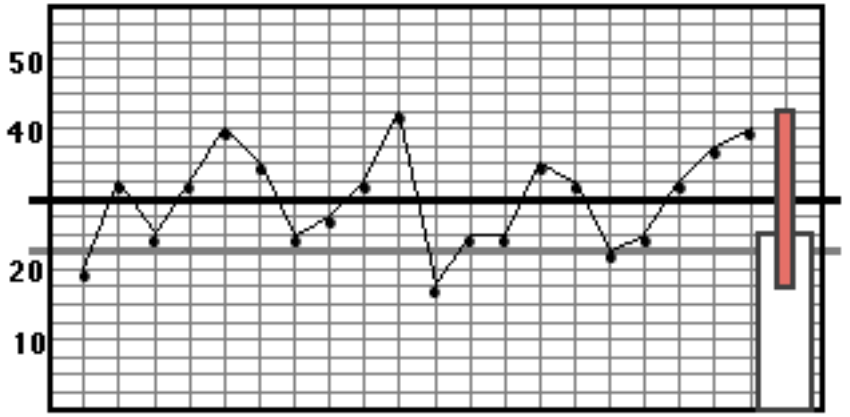
**Remember, you're asking this question to see if the Learner is thinking scientifically according to the pattern of the Improvement Kata. An answer such as, *"I think we're not sure yet"* is scientific, but answers such as, *"I think what's going on is..."* are more conjecture.**

**--> To ensure the Learner's comments are based on facts and data, not assumptions, at any time you can say, *"Tell me more about how you know that."***

# AT QUESTION 2:

**Review the current values for the process metric and outcome metric. These are the minimum metrics that the Learner should have graphed.**






**Have the learner chart this data in run charts**

**Process Metric:** Used to check the process's pattern in real time.
***Example: Exit cycles piece to piece.***

**Outcome Metric:** For periodically checking if improvement efforts are having the desired overall effect.
***Example: Pieces per shift***

# KEY POINTS FOR QUESTIONS 1 & 2

- **Consensus on both the target condition (Question 1) and current actual condition (Question 2) is essential to avoiding endless discussion. What is the Learner trying to achieve and where are they now?**

- **Don't skip over Questions 1 & 2, even if it seems a bit like play-acting. Go through all 5 questions in each coaching cycle because you are trying to frame the dialog and teach the thinking pattern inherent in the 5 questions.**

- **Many new coaches ask, *"Do I really need to ask Question 1 every coaching cycle?"* The answer is 'yes' for two reasons:**
  - **It's "Anchoring." The rest of the coaching cycle then relates back to the first question.**
  - **Asking Q1 in each coaching cycle helps you ensure that the Learner remains aligned to to the overall Challenge.**

- **Whenever possible you should go and see what the Learner is talking about. *"Show me"* and *"Tell me more about..."* are useful coaching phrases at any point in the coaching cycle.**

# KEY POINTS FOR QUESTIONS 1 & 2



- During the coaching cycle ask the Learner to physically point at relevant supporting documents and data. For example, at Question 1 the Learner should point to the Target Condition Form and read the target condition

- Question 2 is not a review of steps the Learner has taken. The Learner should describe how the focus work process is actually operating now relative to the target condition.

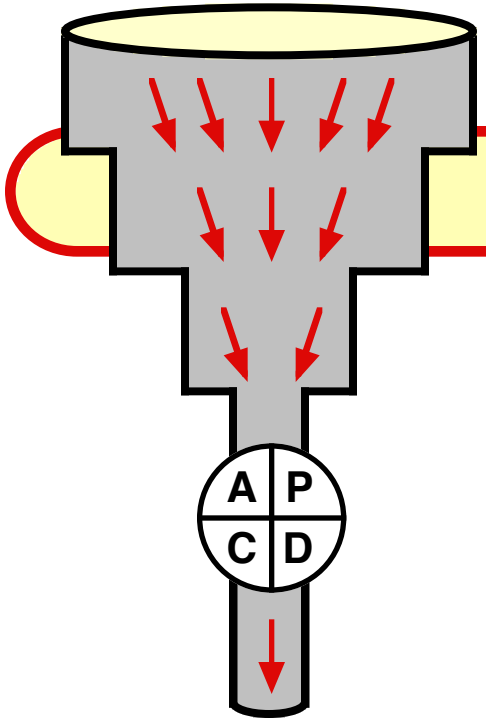


- For Question 2 the Learner should point to facts and data on his/her storyboard.

- A coaching-cycle dialog should use current facts and data as much as possible. At the end of each coaching cycle you and the Learner will agree on what data the Learner should collect and graph *before* the next coaching cycle.

- For Question 2 the learner should not refer back to the initial current condition. The learner should describe the condition now, based on recent direct observation.

# Reflect




1) What is the target condition?

2) What is the actual condition now?

***-- Flip card & reflect on the last step --***

3) What obstacles do you think are preventing you from reaching the target condition?
   Which *one* 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?

# ALWAYS CHECK THE RESULTS OF THE LAST STEP

## This is the *Evidence* and *Evaluate* portion of the learning cycle

**Until the Learner checks, no one knows with certainty what the result of a step will be. Up to that point what the Learner expects to happen is only a hypothesis.**

**This is an important point in the coaching cycle. What the Learner learns from the last step helps him/her see the next threshold of knowledge and determine the next step (the next experiment).**

**To reflect, the Coach asks these four questions:**



**Q1) *What was your last step?***

**Q2) *What did you expect?***

**Q3) *What actually happened?***

**Q4) *What did you learn?***



# TO REFLECT ON THE LAST STEP, LOOK AT THE LAST FILLED-IN ROW OF THE PDCA CYCLES RECORD

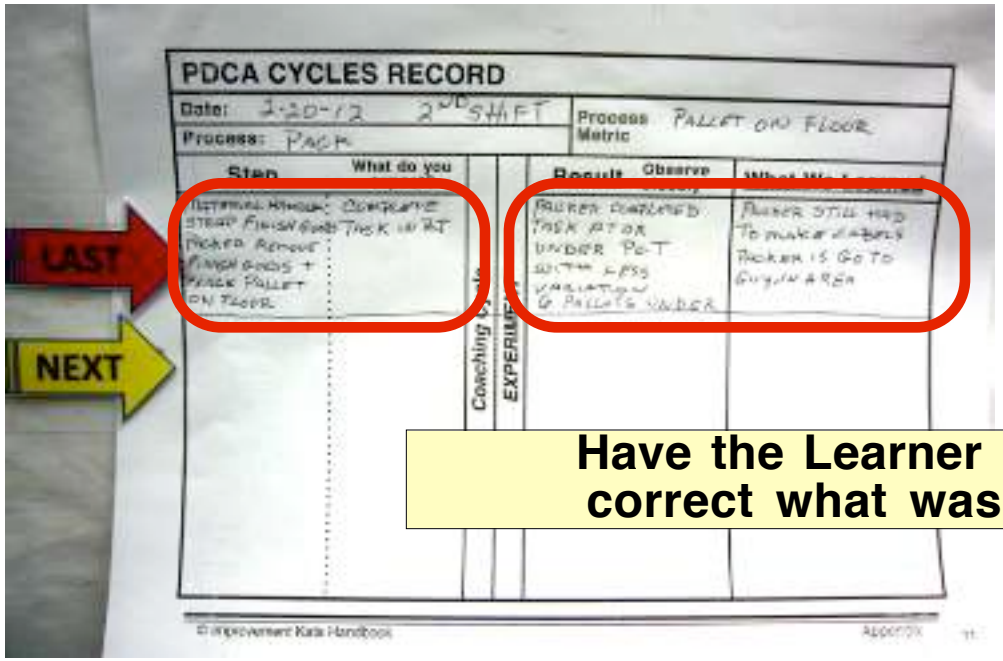
**The Learner should have recorded the results and what was learned from the last step on the right side of the PDCA Cycles Record before the coaching cycle. The Learner should point to boxes 1-4 when responding to the 4 reflection questions.**

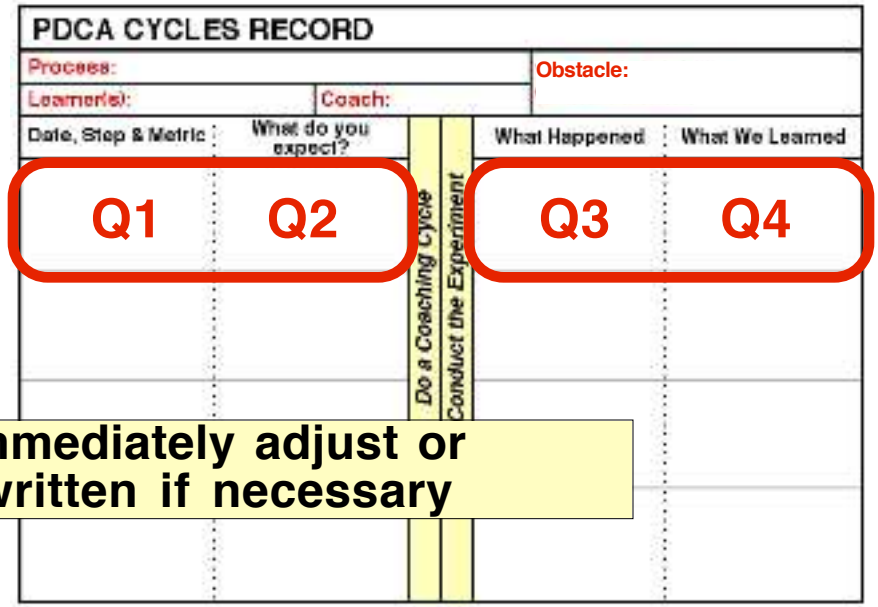


**(Q1 & Q2) The Learner should read through the prediction and expectation s/he recorded on the left (prediction) side before the experiment.**

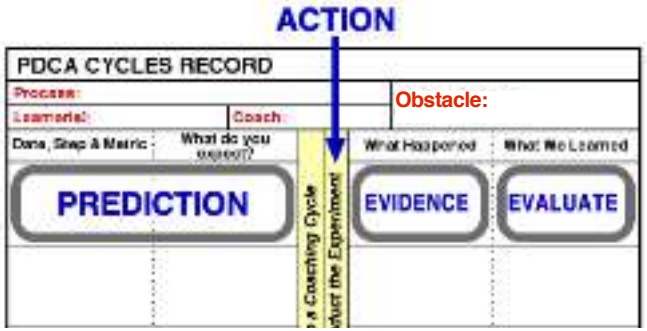
**(Q3) Next the Learner should read the data on what actually happened, which is summarized in the *"What Happened"* box on the right (evidence) side.**

**(Q4) Then the Learner should compare the evidence with the prediction and describe what s/he learned about the focus process, or the process of improving it, which is summarized in the *"What We Learned"* box.**




**Have the Learner immediately adjust or correct what was written if necessary**






# CLARIFYING QUESTIONS FOR THE REFLECTION



**Q1: What was your last step?**

- ***"Let's look at the 'prediction' side of the PDCA Cycles Record."***
- ***"What was the threshold of knowledge?"***
- ***"What did you plan to do?"***

**Q2: What did you expect?**

- ***"What did you think would happen?"***

**Q3: What actually happened?**

- ***"Now let's look at the 'evidence' side of the PDCA Cycles Record."***
- ***"Did you collect any data?"***
- ***"What does the data say?"***
- ***"What specifically did you observe?"***

**Q4: What did you learn?**

- ***"If a hypothesis was being tested*: ❑ Confirmed ❑ Refuted ❑ Can't Tell**
- ***"What do the data & your observations lead you to believe?"***
- ***"What are the implications for your next step?"***
- ***"Why is this important?"***
- ***"How will this help you?"***

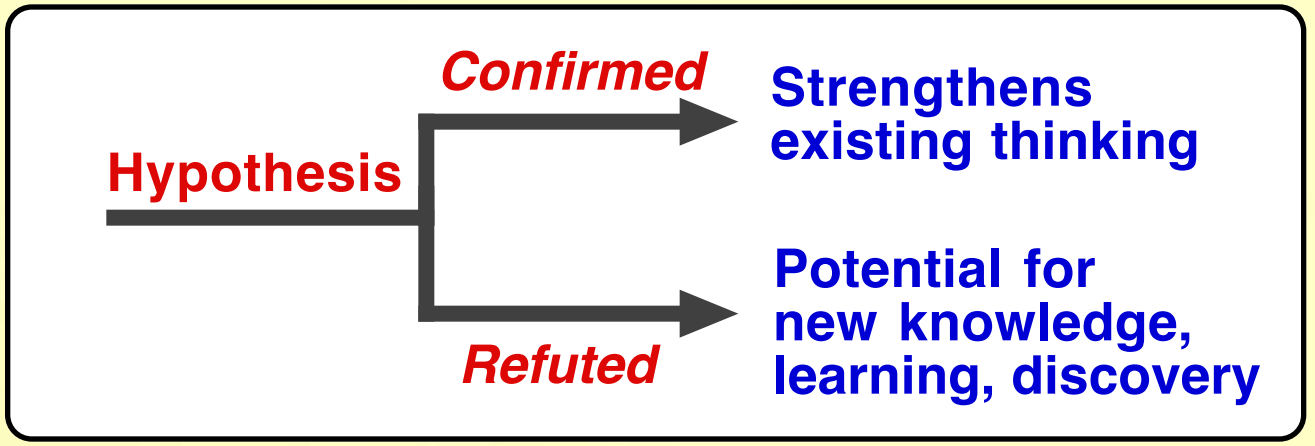
# KEY POINTS FOR THE REFLECTION

- Some of the best experiments have an unexpected result -- a surprise -- because that's how you learn about what steps will be necessary to reach the target condition.

  A target condition is reached through numerous small learning steps and experiments, many of which will generate "negative" (but highly-useful) results.

  The Learner must experience small mistakes - prediction error - in order to learn.



# KEY POINTS FOR THE REFLECTION

## The coach should depersonalize the experiments

- Acknowledging and learning from prediction error can be difficult because it runs counter to our instincts.

  If the Learner feels threatened by problems s/he may too quickly jump to more countermeasures, rather than analyzing and learning from the situation.

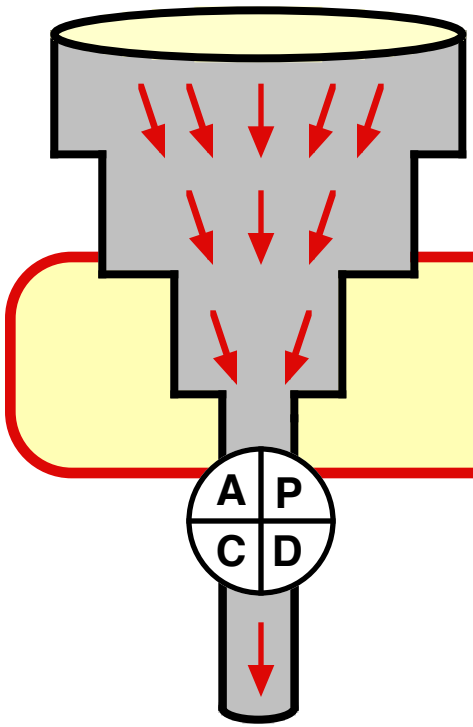
- The idea is to not stigmatize prediction errors, but to use them to learn. To function in this way the reflection should have a positive, challenging, no-blame feeling. It's the coach's responsibility to create this depersonalized atmosphere.

  The Coach should think of an abnormality or problem not as good or bad, but as simply an occurrence that may teach us something about our work system.

  Of course, the Learner should continue rapidly experimenting and *learning forward* to achieve the target condition by its set achieve-by date.

# Question 3

## STAY FOCUSED - ONE OBSTACLE AT A TIME




1) What is the target condition?

2) What is the actual condition now?

*-- Flip card & reflect on the last step --*

**3) What obstacles do you think are preventing you from reaching the target condition? Which *one* are you addressing now?**

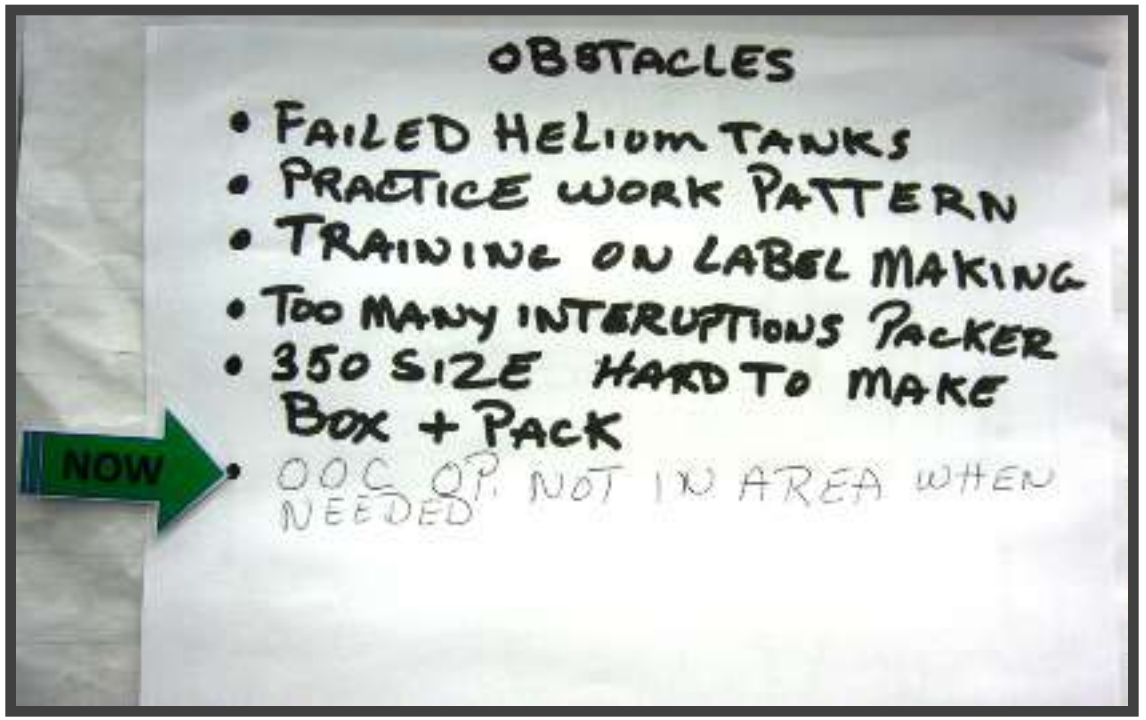
4) What is your next step? (next PDCA experiment) What do you expect?

5) When can we go and see what we have learned from taking that step?

# HAVE THE LEARNER READ THROUGH THE OBSTACLE PARKING LOT



**An arrow should indicate the obstacle currently being addressed**



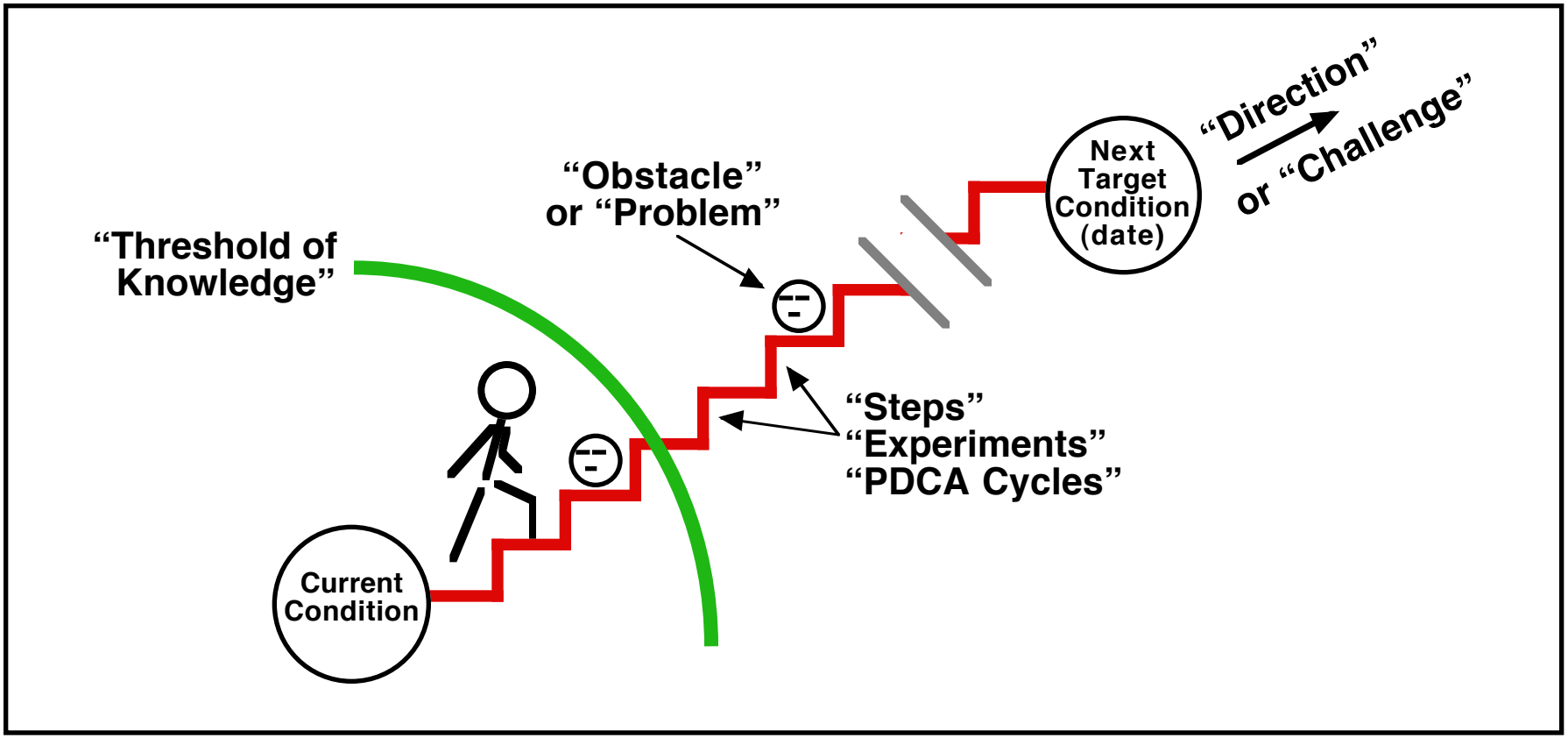

**The Learner should have updated the Obstacles Parking Lot if new obstacles were discovered or some obstacles are no longer an issue.**

**Have the Learner read through the current list of obstacles. An arrow should indicate the obstacle that's currently being worked on. The current obstacle should also be written on the PDCA Cycles Record.**

**Remember, the Learner uses this Obstacles Parking Lot simply to record perceived obstacles or obstacles encountered on the way to the target condition. It's not an action-item list and the Learner will probably not end up working on all the listed obstacles.**

# PRACTICE USING THE RIGHT TERMINOLOGY

**What the Learner does to overcome an *obstacle* or *problem* on the way to the target condition is called *steps, experiments* or *PDCA cycles*. It almost always takes more than one step to break through an obstacle. When the Learner overcomes an obstacle it means they've developed a *solution* to a problem.**





# CLARIFYING QUESTIONS FOR QUESTION 3

## *(Obstacles)*



**--> This question is about what problem you are currently trying to solve.**

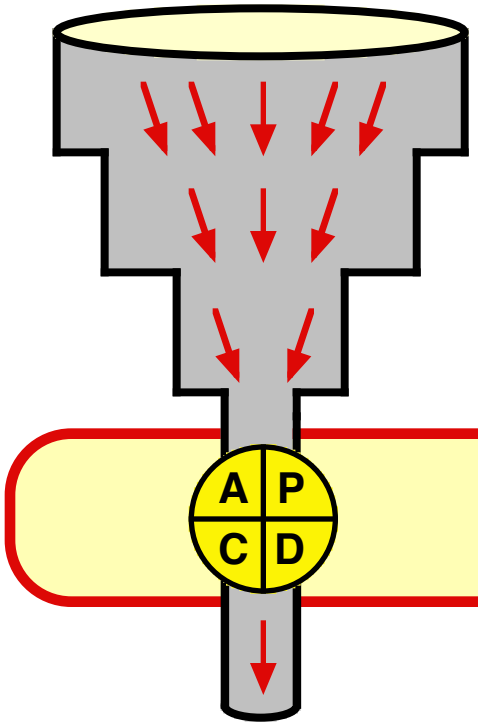
- ***"Are there any new obstacles you have identified?"***
  **(Have the Learner add these to the parking lot)**
- ***"Have you overcome any of the previously listed obstacles?"***
  **(Have the Learner cross these off on the parking lot)**

# KEY POINTS FOR QUESTION 3

- Work on one obstacle at a time.
- It almost always takes more than one step to break through an obstacle, and often many more. The Learner may work on one obstacle for some time, going through a series of PDCA cycles related to that obstacle. This is normal.
- The solution to an obstacle is developed via PDCA cycles. You overcome an obstacle by trying, failing, adjusting and trying again. It's in taking these steps that ingenuity, adaptiveness and innovation happen.
- Don't worry about selecting the biggest or most important obstacle. Just have the Learner get started. The path will unfold as the Learner experiments. The biggest obstacles will wait for you.
- With novice learners, don't start with the most difficult obstacle. Have the Learner get some experience with the Improvement-Kata pattern first.
- The Learner is free to work on any obstacle but should not just work on what s/he *thinks* are obstacles. Keep your eyes open for what obstacles *actually* arise along the way. Working on one obstacle will often lead you to a deeper issue that was not apparent before.

# PLANNING THE NEXT PDCA EXPERIMENT

## Ensure that the Learner plans a good experiment




1) What is the target condition?

2) What is the actual condition <u>now</u>?

*-- Flip card & reflect on the last step --*

3) What obstacles do you think are preventing you from reaching the target condition?
Which *one* 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?

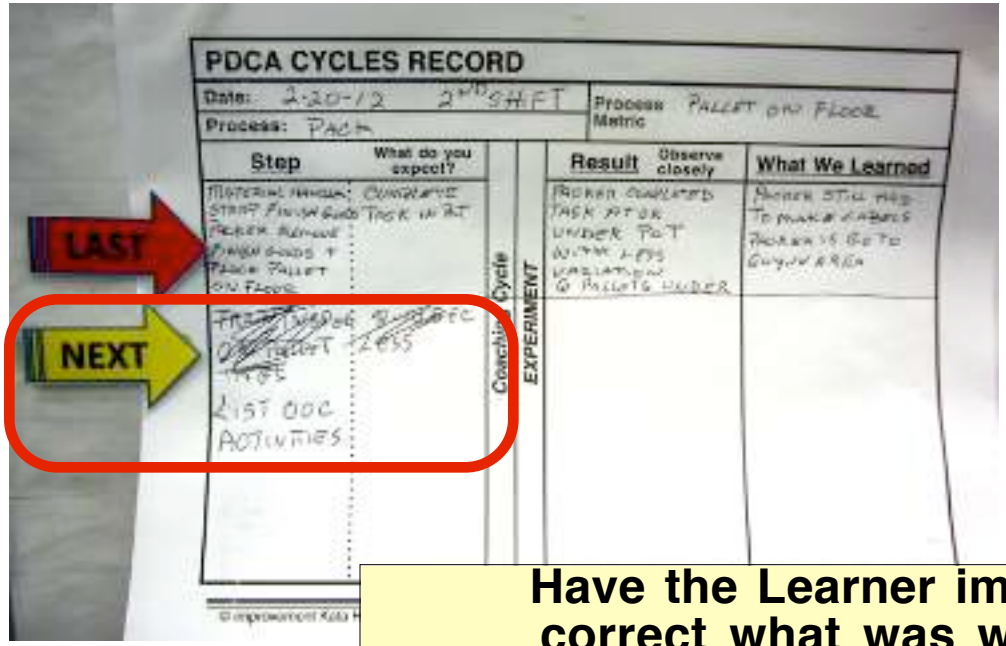
# HAVE THE LEARNER DESCRIBE THEIR NEXT EXPERIMENT AND HOW THEY WILL CARRY IT OUT

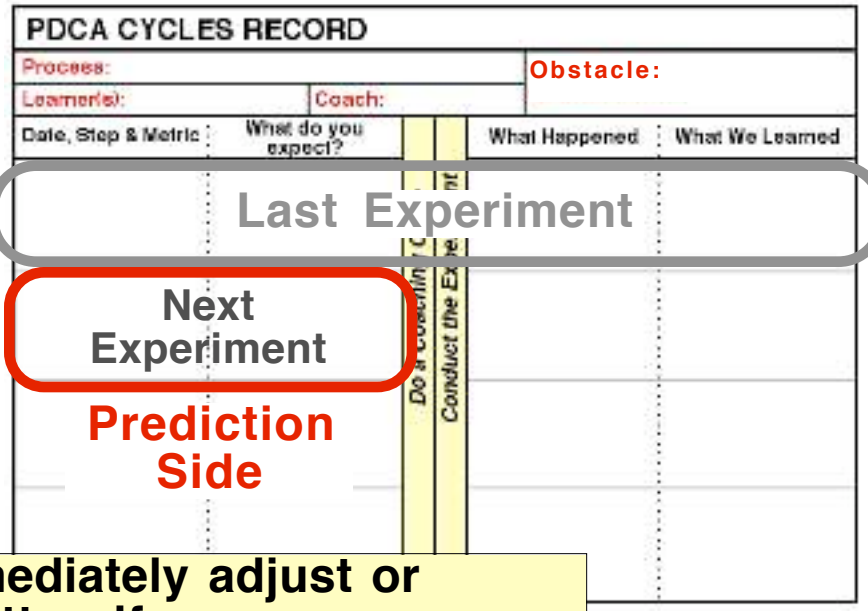
**Based on evaluating the findings from the last experiment, the Learner should have described his/her proposed next step and expectation on the left (prediction) side of the PDCA Cycles Record before the coaching cycle.**



**The Learner should point to boxes 1 and 2 when responding to Coaching Kata Question 4.**

**This is a place to go into some depth in your dialog with the Learner. Use the checklist on the next page to either validate the Learner's proposed next step or help the Learner fine-tune the proposed step.**




**Have the Learner immediately adjust or correct what was written if necessary**



# COACH'S CHECKLIST FOR PLANNING THE NEXT EXPERIMENT

## Take time to help the Learner design a good experiment

- ❑ You must identify the current Threshold of Knowledge. Ask the Learner what is the current knowledge threshold. What do you (Coach) think is the current knowledge threshold?
- ❑ Is the experiment being done at the current threshold of knowledge?
- ❑ Is the experiment a single-factor experiment? (This is not always possible.)
- ❑ Does the Learner have a plan to test their prediction soon, quickly and inexpensively?
- ❑ If the prediction fails will no one be harmed?
- ❑ Is the step measureable? Will the Learner be able to use facts and data to tell if the prediction was correct or not.
- ❑ The Learner has stated what s/he expects to happen, but does not actually know what will happen.
- ❑ Is the next step/experiment part of a chain, i.e., it springs from what was learned in the previous experiment?

# "WHAT DO YOU EXPECT?"

**Before the next PDCA experiment is conducted, be sure to explore what the Learner expects from the experiment**



**In order to be scientific the Learner must state in advance what s/he expects from the next step. This is what you will be testing against, and it is this comparison that leads to surprise and learning.**

**Asking the Learner what they expect also helps you see if the learner is thinking systematically and scientifically, or only stabbing at the obstacle.**

**You can actually ask two slightly different questions here:**

***"What do you expect to happen?"* and *"What do you expect to learn?"***

**Also asking what the Learner expects to learn from the step helps cement in his or her mind that any step is an experiment. Treating ideas as hypotheses to be tested helps everyone move past ego.**

**These questions are one place you do want the Learner to go beyond the threshold of knowledge and predict. Here it's OK to for the learner to say things like, *"I think..."***

# THE EXPECTATION DEPENDS ON THE TYPE OF EXPERIMENT

| Type of experiment | What the Learner can expect |
|---|---|
| **Go and See**<br>Observation and data collection, without changing anything, to learn more about a process or situation. | The Learner should expect that they will get information about how something is currently functioning. |
| **Exploratory Experiment**<br>Introducing a change in a process to see, via direct observation, how the process reacts. | The Learner should expect to learn more than they can from direct observation alone. |
| **Testing a Hypothesis**<br>Introducing a change, ideally in only a single factor, with a prediction of what will happen. | The Learner must predict the outcome of the change. This is the hypothesis to be tested. |



# CLARIFYING QUESTIONS FOR QUESTION 4

## *(The Next Experiment)*



**(1) Make sure you see the Threshold of Knowledge:**

- ***What is the threshold of knowledge now?***
- ***What do we need to learn next?***
- ***How do you know?***

**(2) Help the Learner design a good next experiment:**

- ***How will you test it?***
- ***How will you measure it?***
- ***How exactly will the experiment be done?***
- ***What data will you collect?***
- ***Who / how will you collect it?***
- ***Can you show me?***

**Instead of, "Why?," say, "Tell me more about..."**

**(3) Clarify the Learner's prediction:**

- ***What do you expect to happen? What do you want to happen?***
- ***How can you tell? How will you know?***
- ***What do you expect to learn?***

**Don't say, *"Let's try it and see if it works,"* since this makes an experiment a matter of success versus failure. Say, *"Let's try it and see what we learn."***

# KEY POINTS FOR QUESTION 4



*Important*

- Coach and Learner must have identified the current knowledge threshold before the next step is determined. The current knowledge threshold often defines what will be the next experiment. Often this will send you back to investigating something you thought you already knew.

  The Learner may not recognize when s/he goes from knowledge to assumption. Here the Coach should get the Learner back "in the corridor" specified by the Improvement Kata. Don't speculate, get facts and data.

- Designing and conducting the next experiment toward the target condition is a great place to involve process operators and get their ideas.

- Ideally you're guiding the Learner into making a chain of PDCA cycles, where the next step builds on what was learned in the last step.

- The Learner should set up experiments so that mistakes & unexpected results will not harm the customer process.

- In many coaching cycles the next step is not yet a process change. Activities such as "planning the next step" or "further analysis" can be a next step. That's normal.

# KEY POINTS FOR QUESTION 4

- **At the start, nearly everyone makes PDCA cycles too big, i.e., takes steps that are too big. This often overshoots the knowledge threshold and hampers learning. Guide the Learner into PDCA cycles that are as small and as rapid as possible for the situation. You're not looking for big leaps. You're looking for a good experiment.**

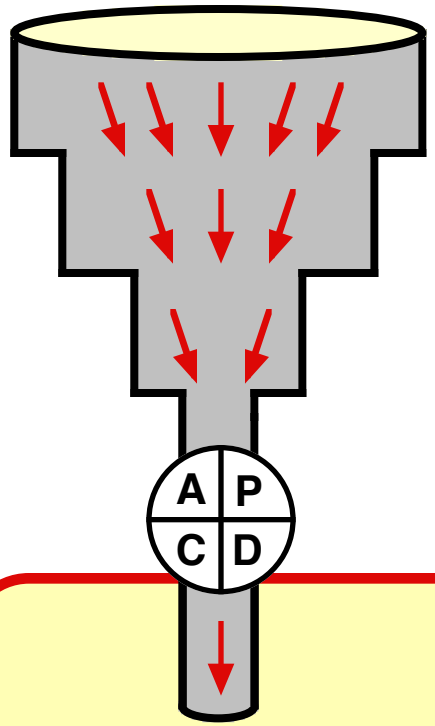
  **Caution: if your coaching cycles are not daily, the learner's steps will tend to get too big. The Learner will naturally introduce lots of changes before you return.**

- **First experiments often involve shifting work elements around, to find a work pattern that functions. Keep in mind that this is only moving existing ways of doing things around, rather than true improvement.**

  **At some point the Coach should advise the Learner that just shifting work elements is no longer acceptable, and that it is time for true improvement toward the target condition. This is where the going gets tougher and improvement gets real.**

- **As soon as the next step (not a list of steps) is clear, the coaching cycle is reaching its end. There's no need for looking further ahead or long discussion beyond this point. Now it's time to take the next step as quickly as possible.**

# PREPARING FOR THE NEXT COACHING CYCLE




1) What is the target condition?

2) What is the actual condition now?

*-- Flip card & reflect on the last step --*

3) What obstacles do you think are preventing you from reaching the target condition?
Which *one* 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?**



# CLARIFYING QUESTIONS FOR QUESTION 5

*(Next Coaching Cycle)*



**--> Set a specific date and time. When will the experiment be done and when is the next coaching cycle?**

**--> Use clarifying questions to teach the Learner to conduct rapid tests whenever possible**

- ***"Can we do this experiment sooner?"***
- ***"Can we do it today?"***
- ***"How about right now?"***

**--> What information do you want the Learner to have recorded on the Storyboard at the next coaching cycle?**

## *And you're done!*

# KEY POINTS FOR QUESTION 5

- **Question 5 can be tricky. New coaches often incorrectly think they are asking, *"When will you have it done?"* But Question 5 is more about scheduling the next coaching cycle to see *"What are we learning?"***

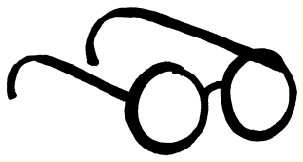
  **Caution! Even when the coach asks Question 5 with the correct intention, the learner may still think s/he is being asked, *"When will you have it done?"***

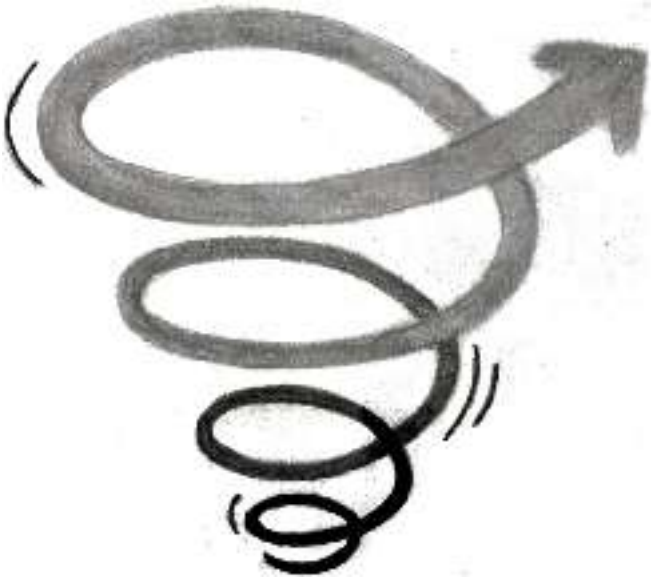
- **You and the Learner should agree on what data and information the Learner should obtain, prepare and bring to the next coaching cycle.**

- **Experiments should be done as cheaply and as quickly as possible. The coach should ask, "*Can we take this step right now?*"**

- **Let the Learner fail at certain points, then teach. A learner has to stumble in order to learn new skills.**

- **Since you don't know what the actual result of the next step will be, both you and the Learner will need to go and see (check) in the next coaching cycle.**






See you at the
next coaching
cycle

# ON THE ACHIEVE-BY DATE THE OVERALL IMPROVEMENT KATA PATTERN REPEATS

**At some point the Learner will reach the target condition achieve-by date and often, but not always, have achieved his/her target condition. At this time you should coach the Learner through the overall Improvement Kata pattern again. Specifically, have the Learner:**

- **Do a summary reflection, i.e. a major reflection over the entire process. This can lead to lots of learning that may be applied in the next cycle through the Improvement Kata pattern.**

**Then:**
- **Revisit the overall direction or challenge**
- **Grasp the current condition as it stands now**
- **Establish the next target condition**







**Remember, it will most likely take several successive target conditions in order to achieve the challenge.**



# QUESTIONS FOR THE ACHIEVE-BY DATE SUMMARY REFLECTION



**--> Have the Learner to reflect on and evaluate *how* s/he worked:**

- ***"Why are we using the Improvement Kata pattern?"***
- ***"What did we gain by doing that?"***
- ***"What went well?"***
- ***"What could be better?"***
- ***"What aspects of the Improvement Kata should we work on next time?"***


The End
For now!

# APPENDIX - FORMS FOR PRACTICING

1) **Improvement Kata Poster - The Five Kata to Practice**
2) **The Roles**
3) **Learner's Storyboard**
4) **Process Analysis Steps**
5) **Worksheet for Timing Cycles**
6) **Information in a Target Condition**
7) **Improvement Kata Proficiency Table** (to gage skill level)
8) **Coaching Kata Proficiency Table** (to gage skill level)

## Coaching Cycle Forms:

- ❑ **Who Uses What Forms**
- ❑ **Where the Forms Go on the Learner's Storyboard**
- ❑ **Current/Target Condition Forms**
- ❑ **Description of Work Steps & Sequence**
- ❑ **Obstacle Parking Lot**
- ❑ **PDCA Cycles Record**
- ❑ **5 Question Card** (front)
- ❑ **5 Question Card** (back)
- ❑ **Coaching Cycle Plan / Tracking** (coach)
- ❑ **Coaching Cycle Observation Form** (2nd coach)

# IMPROVEMENT KATA

*Where's the Threshold of Knowledge?*

## PLANNING
## Where do you want to go?

### UNDERSTAND THE DIRECTION

*What challenge are you striving for?*

(6 mo - 3 years out)

1 Tool: Future-State Mapping

### GRASP THE CURRENT CONDITION

*What are the facts and data about where you are now?*

2 Tool: IK Process Analysis

### ESTABLISH THE NEXT TARGET CONDITION

(with an achieve-by date)

*Describe where you want to be next on the way to the challenge.*

(1 week - 3 months out)

3 Tool: Current Condition Target Condition Form

## EXECUTING
## Then iterate to get there

### ITERATE TOWARD THE TARGET CONDITION

*Conduct rapid, frequent experiments to move from current condition to the target condition.*

4 Tool: PDCA Cycles Record

Daily

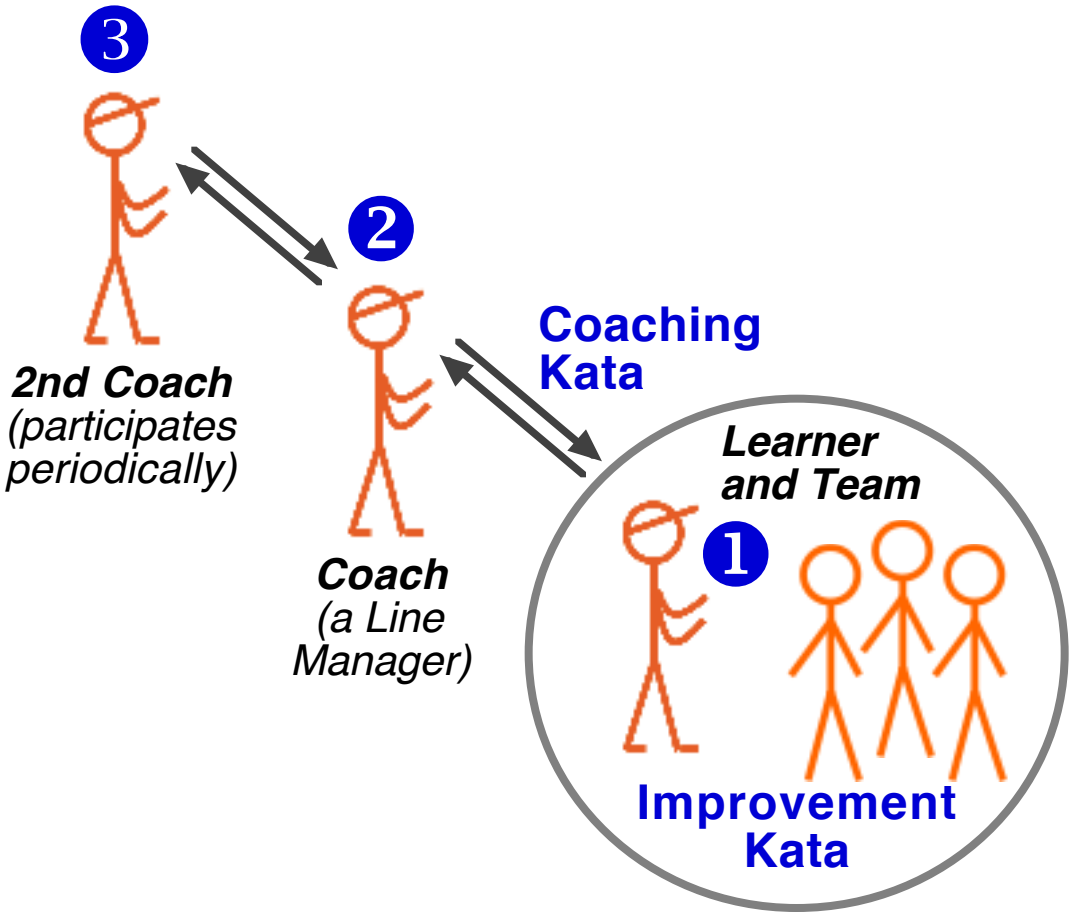
### COACHING CYCLES WITH THE 5 QUESTIONS

*Coach escorts the Learner and gives procedural guidance.*

5 Tool: 5-Question Card

By Mike Rother, 2013

# THE ROLES




***Learner and Team (The Process Owners):***
Apply the Improvement Kata to establish and work toward the target condition. Learner conducts experiments with PDCA and develops solutions to obstacles, in daily dialog with the coach and the process operators.

***Coach / Manager (The Teacher):***
Conducts coaching cycles daily using the 5 questions. Ensures the learner is working toward the target condition scientifically according to the Improvement Kata pattern. The coach's job is to develop the learner by guiding the learner on Improvement Kata procedure, not to improve the process.

***2nd Coach (Coaches the Coach):***
Periodically observes coaching cycles between the coach and the learner. Helps the coach/manager develop his or her coaching skills. Ensures that the team's target condition ties in to a larger challenge, such as a future-state value stream design.

# LEARNER'S STORYBOARD

| ***Focus Process:*** | ***Challenge:*** |
|---|---|

| ***Target Condition*** | ***Current Condition Now*** | ***PDCA Cycles Record*** |
|---|---|---|
| ***Achieve by: _____*** | | |
| | | ***Obstacles Parking Lot*** |

# STEPS OF THE PROCESS-ANALYSIS KATA

**Step ①**

**Outcome Performance**

How is the process performing over time? (Graph)

**Outcome metrics**

**Step ②**

**Customer Demand & Planned Cycle Time**

What is the rate of demand and the desired rate of 'production'?

**Step ③**

**Characteristics of the Current Process**

- Make a block diagram of the work pattern.
- Measure exit cycles and graph fluctuation.
- Record your bullet-point observations.

**Process metrics and characteristics**

**Step ④**

**Equipment Capacity**

Are there any equipment constraints? What are they?

*Optional*

**Step ⑤**

**Necessary Number of Operators (if the process were stable)**

How many people are necessary? (Calculated)

# TIMING WORKSHEET

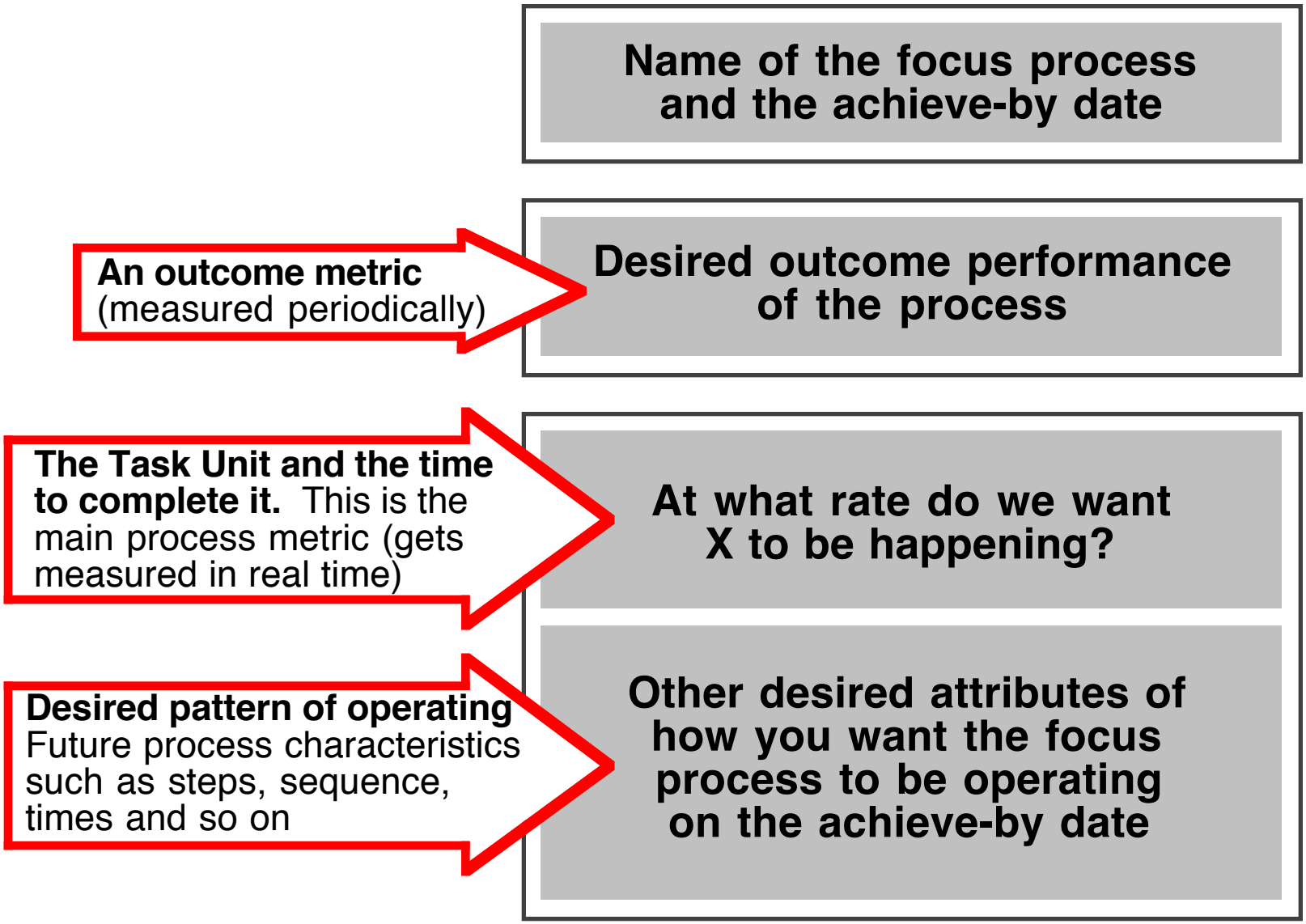
| Process | Metric |
|---|---|
| Date | Operator ☐ |

| Cycle | Observed Times (Data) | Observations about the current operating pattern (Facts) |
|---|---|---|
| 1 | | |
| 2 | | |
| 3 | | |
| 4 | | |
| 5 | | |
| 6 | | |
| 7 | | |
| 8 | | |
| 9 | | |
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| 25 | | |

Note wait times here

Check box if this is **process output**

# INFORMATION IN A TARGET CONDITION



# IMPROVEMENT KATA PROFICIENCY ASSESSMENT

## Note that this scale measures Improvement Kata skill level or degree of habit formation, not the person

Able to Coach

| Stage | Level | Description | Standard of Work | Autonomy |
|---|---|---|---|---|
| 3 | ***Expert*** Not everyone reaches this level | No longer relies on rules / guidelines / maxims<br>Grasp of situations & decision making intuitive<br>Vision of what is possible | Excellence achieved with relative ease | Able to take responsibility for going beyond existing standards and creating own interpretations |
| 2 | ***Proficient*** | Has unconscious understanding and applies the IK routine more on "auto pilot." Deviates from the strict kata to fit the situation. Sees what's most important in a situation.<br>High degree of self-efficacy with the IK pattern. | Fully acceptable standard achieved routinely | Able to take full responsibility for own work, and coach others |
| | ***Competent*** | Has standardized and routinized procedures<br>Sees actions partially in terms of LT goals<br>Can prioritize | Fit for purpose, though may lack refinement | Able to achieve most tasks using own judgement |
| 1 | ***Advanced Beginner*** | Actions are based on the kata<br>Situational perception still limited<br>All aspects are given equal importance | Straightforward tasks likely to be completed to an acceptable standard | Able to achieve some steps using own judgement, but coaching needed for overall task |
| | ***Novice*** | Strict adherence to the Kata. Little situational perception & discretionary judgement.<br>Has to purposely concentrate on the IK routine.<br>Low self-efficacy in applying the IK routine. | Unlikely to be satisfactory unless closely coached | Needs close coaching and instruction |

Table adapted from the Dreyfus Model of Skill Acquisition
Dreyfus, Stuart E., *Formal Models vs. Human Situational Understanding: Inherent Limitations on the Modelling of Business Expertise*, University of California, Berkeley, 1981

# COACHING KATA PROFICIENCY ASSESSMENT

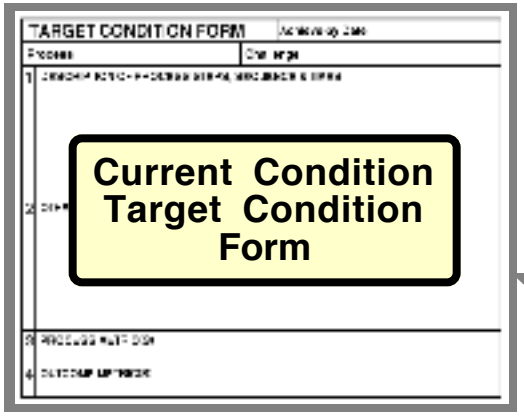
**By Yvonne Muir, Jennifer Ayers & Julie Simmons**

| Stage | Level | Characteristics | Autonomy |
|---|---|---|---|
| **3** | ***Expert*** | • Intuitive grasp of coaching based on deep, practiced understanding<br>• Direct, yet supportive<br>• Coaching conversations are natural; learner doesn't notice being coached<br>• Sought after for coaching advice | **2nd Coach needed occasionally** |
| **2** | ***Proficient*** | • Clear perception of learner's gaps or weaknesses<br>• Uses coaching to guide: adapts to the situation, asks meaningful questions<br>• Ability to assess learners preferred learning style (auditory, visual, kinesthetic)<br>• 2nd Coach capability | **2nd Coach needed periodically** |
| | ***Competent*** | • Capable of sensing learners uncertainty level and knowledge threshold<br>• Consistently coaches learner with a repeatable pattern<br>• Coaching embedded in normal daily work | |
| **1** | ***Advanced Beginner*** | • Narrow "development perception"; recognizes need for 2nd coach<br>• Becoming comfortable providing feedback to learner<br>• Beginning to observe and listen more (vs. talk and advise)<br>• Asks some probing questions to gain insight | **Must have a proficient 2nd Coach at each coaching cycle** |
| | ***Novice*** | • Rigidity in asking questions / uses closed ended questions<br>• Lack of discipline to follow a pattern and recognize its importance<br>• Focuses on results (command and control)<br>• Not able to hear and identify when learner has hit a Threshold of Knowledge | |

# Coaching Cycle Forms

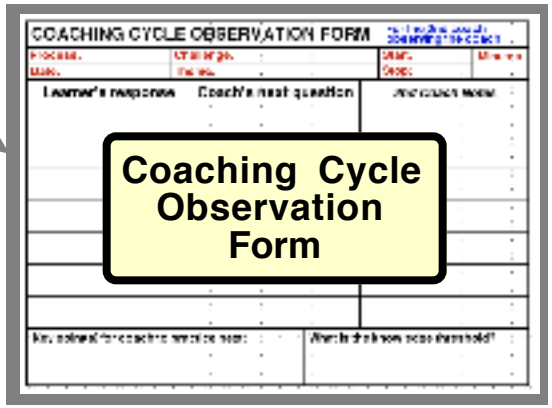


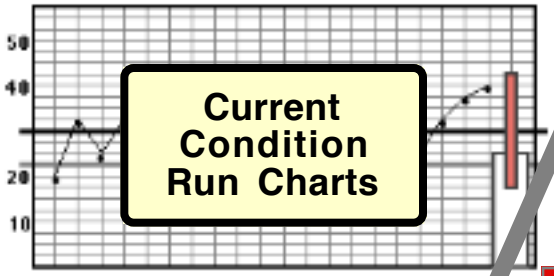
# WHO USES WHAT FORMS

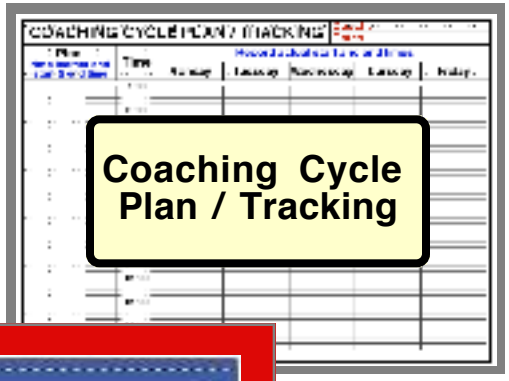


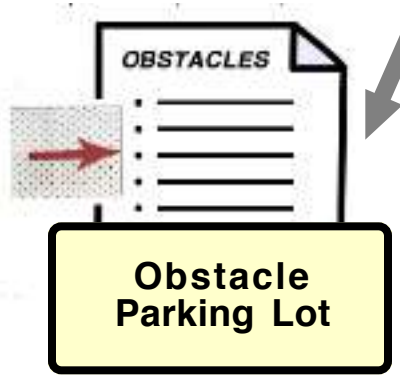


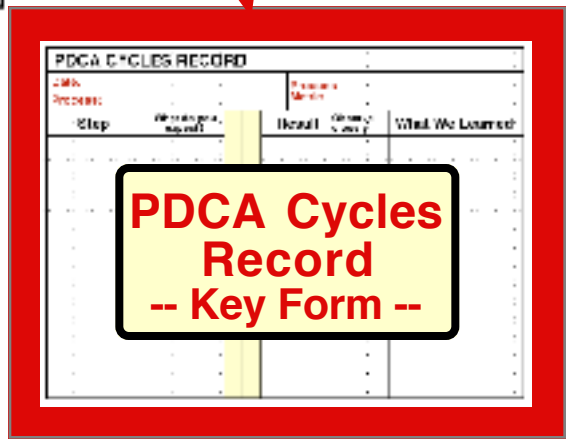


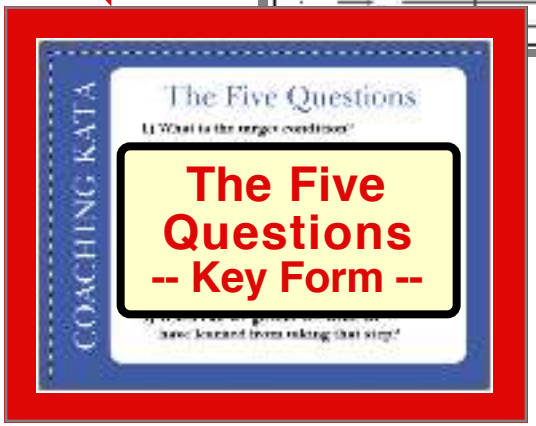


# WHERE THE FORMS GO
# ON THE LEARNER'S STORYBOARD

**Focus Process:** | **Challenge:**

## Target Condition

**Achieve by: _____**

TARGET CONDITION

## Current Condition Now

CURRENT CONDITION

BLOCK DIAGRAM

Exit Cycles

Takt

Pc/t

Range

Lowest Repeatable Time

## PDCA Cycles Record

Plan, Step & Metric | What do you expect? | Do COACHING CYCLE | Conduct the EXPERIMENT | What happened? | What we learned

## Obstacles Parking Lot

Obstacle Parking Lot

Obstacle | How can you measure that?

COACHING KATA

### 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? Which ***one*** 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?

**Reflect on the Last Step Taken**

Because you don't actually know what the result of a step will be!

1) What was your **Last Step**?
2) What did you **Expect**?
3) What **Actually Happened**?
4) What did you **Learn**?

Return

# CURRENT CONDITION / TARGET CONDITION

**Challenge:**

**Learner:** **Coach:** **Process:**

| **Outcome Metric** | **Process Metric** |
|---|---|

| **Categories** | **Current Condition** **Date** | **Target Condition** **Achieve-By Date** |
|---|---|---|
| **Outcome Performance** *(Results)* | *show run chart* | |
| **Process Characteristics and Operating Pattern** *(Pattern of Working)* | *show block diagram or swim-lane diagram* | |

# CURRENT CONDITION / TARGET CONDITION

**Challenge:**

**Learner:** **Coach:** **Process:**

| **Outcome Metric** | **Process Metric** |
|---|---|

| | Categories | Current Condition — Date | Target Condition — Achieve-By Date |
|---|---|---|---|
| 1 | Outcome Performance *(Results)* | *show run chart* | |
| 2 | Rate of Demand<br>Rate of Production | | |
| 3 | Operating Pattern | *show block diagram*<br>*show all run charts* | *show block diagram* |
| 4 | Capacity | *show chart* | *show chart* |
| 5 | Number of People Required | | |

# CURRENT CONDITION / TARGET CONDITION

**Challenge:**

**Learner:** **Coach:** **Process:**

| **Outcome Metric** | **Process Metric** |
|---|---|

| Categories | | Current Condition (Date) | Target Condition (Achieve-By Date) |
|---|---|---|---|
| 1 Outcome Performance | Actual output / shift | *show run chart* | |
| | Overtime? | | |
| 2 Rate of Demand & Rate of Production | Takt time | | |
| | Pc/t | | |
| | # of Shifts | | |
| 3 Operating Pattern | Process steps and sequence | *show block diagram* | *show block diagram* |
| | Batch size | | |
| | Where WIP Accumulates | | |
| | Number of operators | | |
| | % exit cycle fluctuation (at end of line) | *+ show all run charts* | |
| | Other attributes of the process | | |
| 4 Capacity | Capacity chart | *show chart* | *show chart* |
| 5 People Required | Calculated number of operators | | |

| WORK STEPS & SEQUENCE | | | | Process: | | | Date: |
|---|---|---|---|---|---|---|---|
| Operator | Operator | Operator | Operator | Work Sequence ①②③ | Walking → | Return to Start ←- - - | Standard WIP ● |
| | | | | | | | |
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**As you progress, you can develop a more detailed description of work steps for each operator, called a *Standard Work Chart*. For non-manufacturing processes you can use or develop a different depiction of work steps and sequence**

# Obstacle Parking Lot

| Obstacle | How can you measure that? |
| --- | --- |
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# PDCA CYCLES RECORD *(Each row = one experiment)*

**Obstacle:**

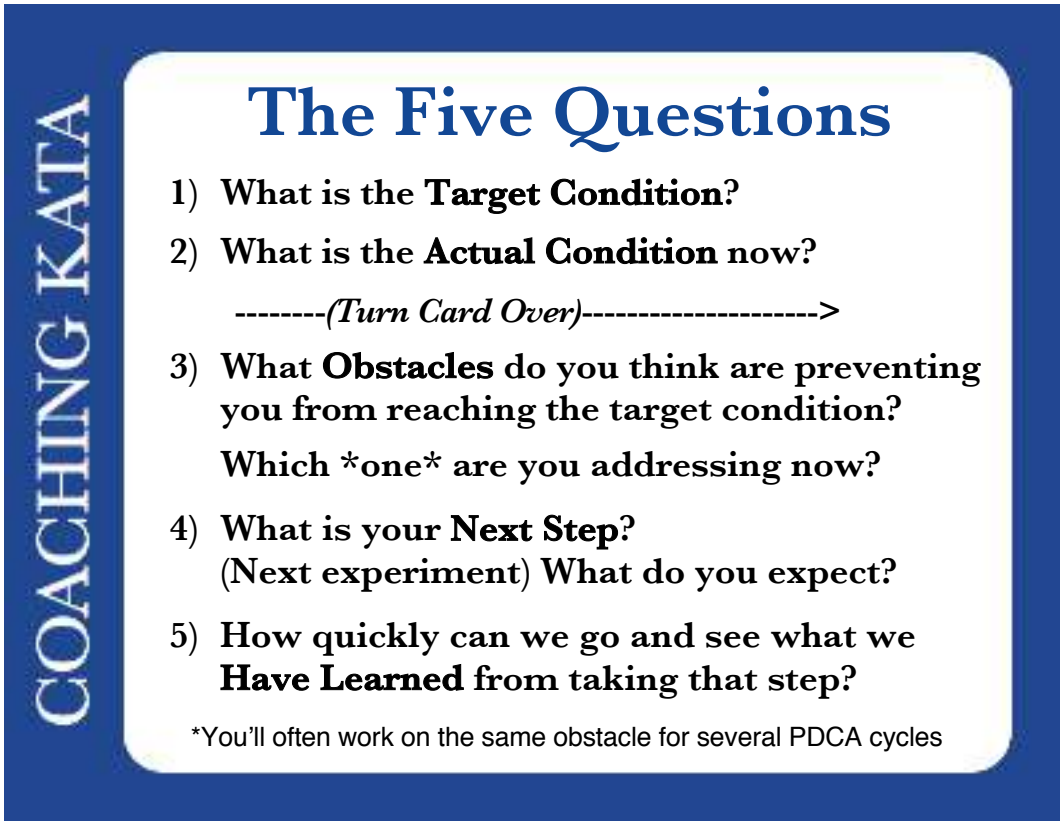
**Process:**

**Learner:**

**Coach:**

| Date, step & metric | What do you expect? | *Do a Coaching Cycle* / *Conduct the Experiment* | What happened | What we learned |
|---|---|---|---|---|
| | | | | |
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| | | | | |

# 5 QUESTION CARD (front)



# 5 QUESTION CARD (back)

## Reflect on the Last Step Taken

Because you don't actually know
what the result of a step will be!

1) What did you plan as your **Last Step?**

2) What did you **Expect?**

3) What **Actually Happened?**

4) What did you **Learn?**

---------->

*Return to question 3*

# COACHING CYCLE PLAN & TRACKING

Coach:

Dates:

| Plan<br>Note learner and start & end time | Time | Draw a dot for actual start and end times | | | | |
|---|---|---|---|---|---|---|
| | | Monday | Tuesday | Wednesday | Thursday | Friday |
| | 7:00 | | | | | |
| | 8:00 | | | | | |
| | 9:00 | | | | | |
| | 10:00 | | | | | |
| | 11:00 | | | | | |
| | 12:00 | | | | | |
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| | 14:00 | | | | | |
| | 15:00 | | | | | |
| | 16:00 | | | | | |
| | 17:00 | | | | | |
| | 18:00 | | | | | |

# COACHING CYCLE OBSERVATIONS

**Process:**
**Date:**

**Coach:** | **Learner:** | **Start/End:**

| Question | COACH | LEARNER |
|---|---|---|
| ***Review Challenge*** | | |
| **Q1: *Target condition?*** | | |
| **Q2: *Actual condition now?*** | | |
| **Reflect: *PDCA Cycles Record*** | | |
| **Q3: *Obstacles? Which one?*** | | |
| **Q4: *Next step? PDCA Record*** | | |
| **Q5: *When see what learned?*** | | |

| | |
|---|---|
| What is the knowledge threshold? | Impressions: |
| Key point(s) for this Coach to practice next: | Next coaching cycle: |