Park Avenue SOLUTIONS

KATA 101

August 2, 2018

Wabash Valley Lean Network

presented by
Leigh Ann Schildmeier, Park Avenue Solutions
Steve Ghera, Ghera Consulting

Introduction

Introductions

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Learning Objectives

By the end of this session, you will be able to:

1. Describe the 4 steps of the Improvement Kata (IK)
2. Explain the 4 steps of P-D-C-A
3. Relate the IK to your current CI approach
4. Use the 5 questions of the Coaching Kata (CK)
5. Know where to locate additional IK references

Disclaimer

The human mind can hold 5 things - - Russ Ackoff

1. Data
2. Information
3. Knowledge
4. Understanding
5. Wisdom

Data:

There are 4 steps to the Improvement Kata

There are 4 steps to PDCA

The human mind can hold 5 things

1. Data
2. Information
3. Knowledge
4. **Understanding**
5. Wisdom

Information:

The 4 steps of Improvement Kata are:

1. Set direction
2. Establish Current Condition
3. Determine Next Target Cond.
4. PDCA towards NTC

The 4 steps of PDCA are:

1. Plan
2. Do
3. Check
4. Act

The human mind can hold 5 things

1. Data
2. Information
3. Knowledge
4. **Understanding**
5. Wisdom

Knowledge:

You know how to use the 4 steps.

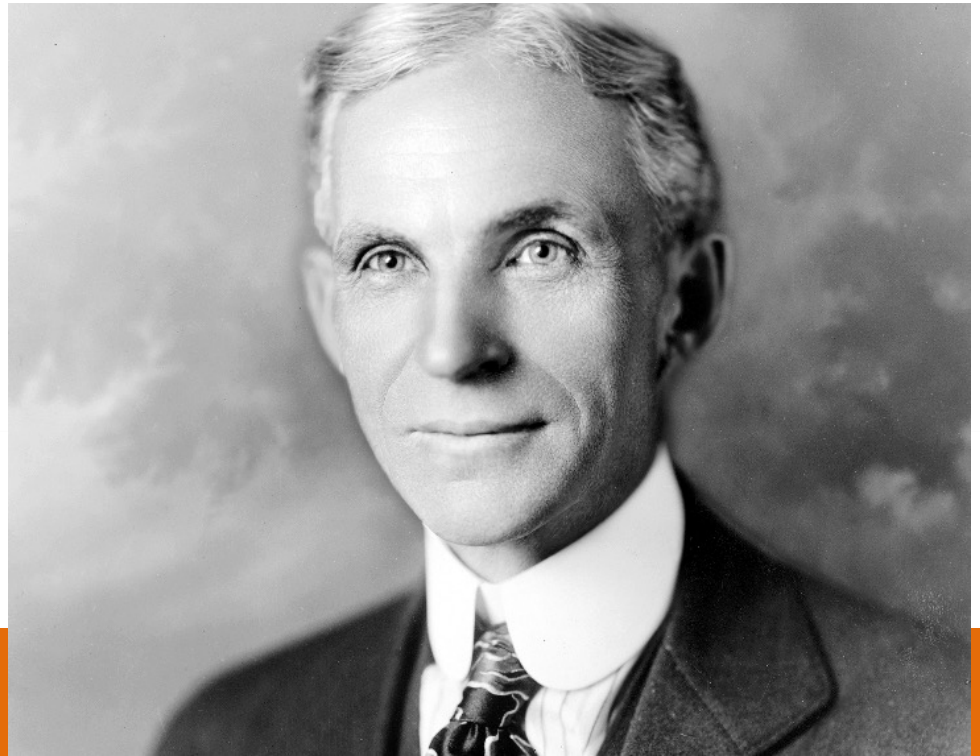
Understanding

You know why and how they work. You know the cause / effect relationships (psychology) behind the kata.

Improvement Kata's Roots

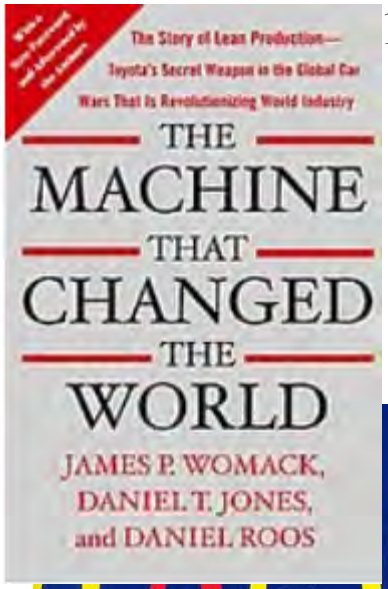
Some say C.I. History began with the *Venice Arsenal*: a Navy shipyard based on mass production.

Or *Henry Ford* as a more contemporary starting-point: who fused standard work with interchangeable parts and moving conveyance to create flow production.

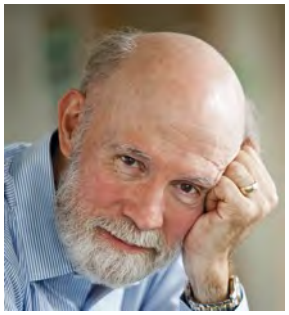


1940’s, 1950’s, 1960’s, ... 2000’s

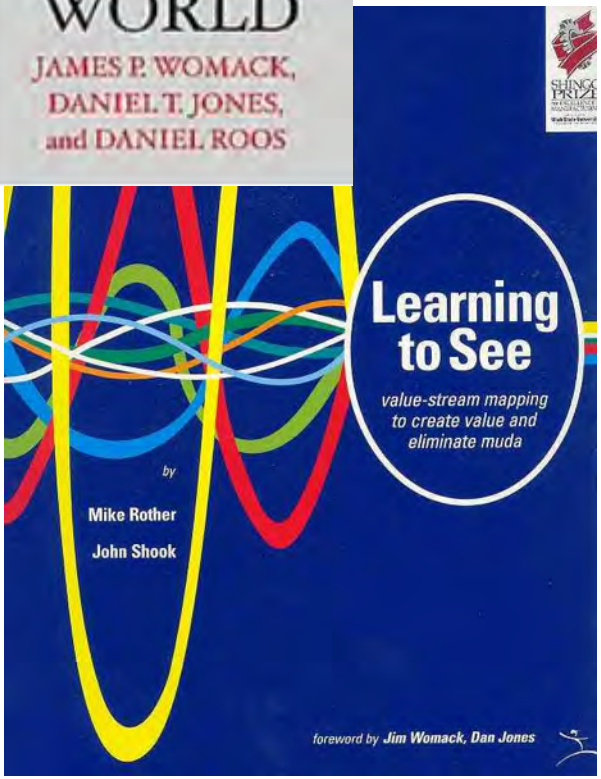
Lean Grassroots



1990



Jim Womack



1998

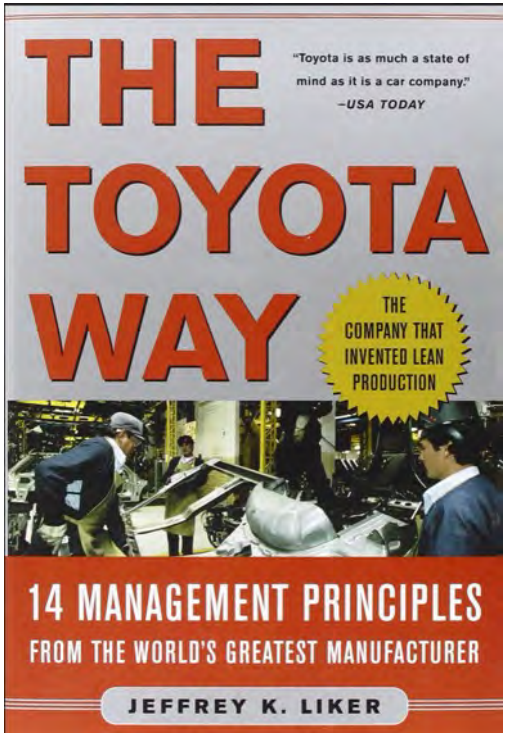
John Shook

Mike Rother

Jeffrey Liker

Teacher

Student



2003

Many Of Us Practice Lean Like This:

Maximize Customer Value while minimizing waste with a *focus on tools*:

- Value Stream Maps
- Visual Management
- Kanban
- Standard Work
- Kaizen
- 5S
- PDCA
- 5 Whys
- Empowerment

How does Continuous Improvement happen in your shop?

- Special people with special training do it.
- Project based
- Long learning cycles
- Tools
- Methods

- Short learning cycles
- Simple approach
- Every person / Every day
- Learning focused – improvement results

Common Improvement Approaches

- How do we tend to try to go about problem solving?
  - We brainstorm a list of root causes
  - We brainstorm a list of solutions
  - Vote on the best solutions
  - Create an action plan and implement it…….and hope it works!

The focus becomes getting the action plan implemented…..not solving the problem

- But as you move forward in the plan
  - The situation changes
  - Things are learned

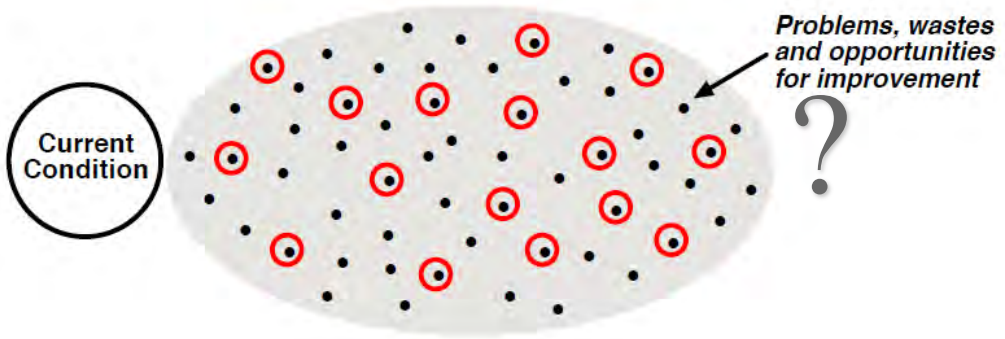
Improvement: More ~~systematic~~ symptomatic than scientific

Reactive To Problems

- Troubleshoot to eliminate the problem
  - This scattershot approach may not achieve meaningful improvement that moves the organization forward
- It misspends our limited capacity for making improvements

Short On A Clear Direction

- Hunt for wastes or opportunities
- Random acts of improvement
- Never say "No" to a good problem



We don't learn much, because we are not experimenting and fully understanding the root cause

How do we CHANGE ?

"You can't think your way into a way of acting, but you can act your way into a way of thinking."

– Confluence of Ancient Greek & Hebrew Sayings

2003-2009 WE STUDIED TOYOTA'S *MANAGEMENT* APPROACH

Due to Toyota's enduring success

Visible Stuff

- Toyota's results
- Lean tools & practices

Less Visible Stuff

- A systematic, scientific way of thinking & acting
- Managers as teachers of that way

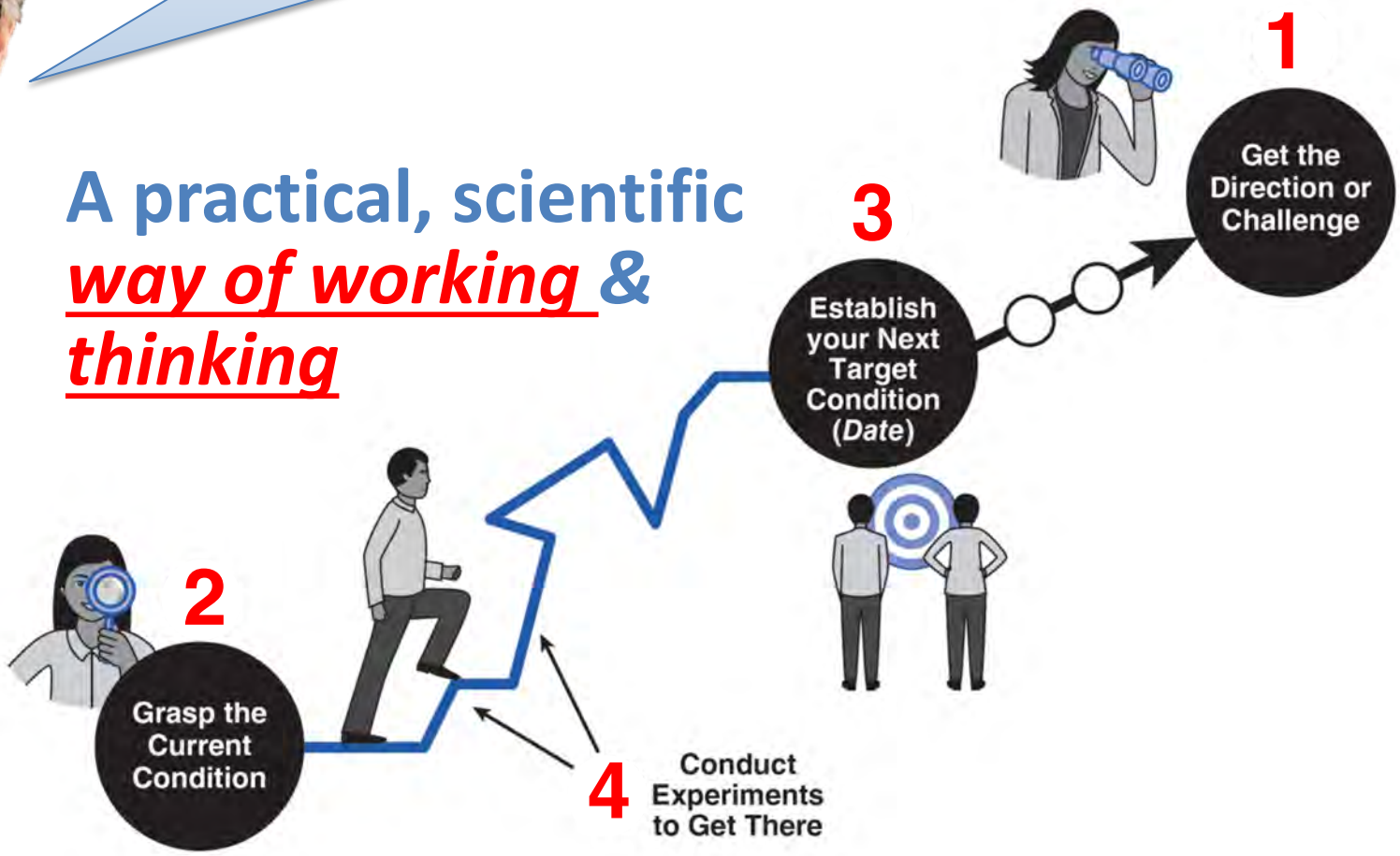
Meta Skill

The less visible stuff is a foundation that makes the Lean tools work

WE FOUND A PATTERN AT TOYOTA

The four-step "Improvement Kata" model

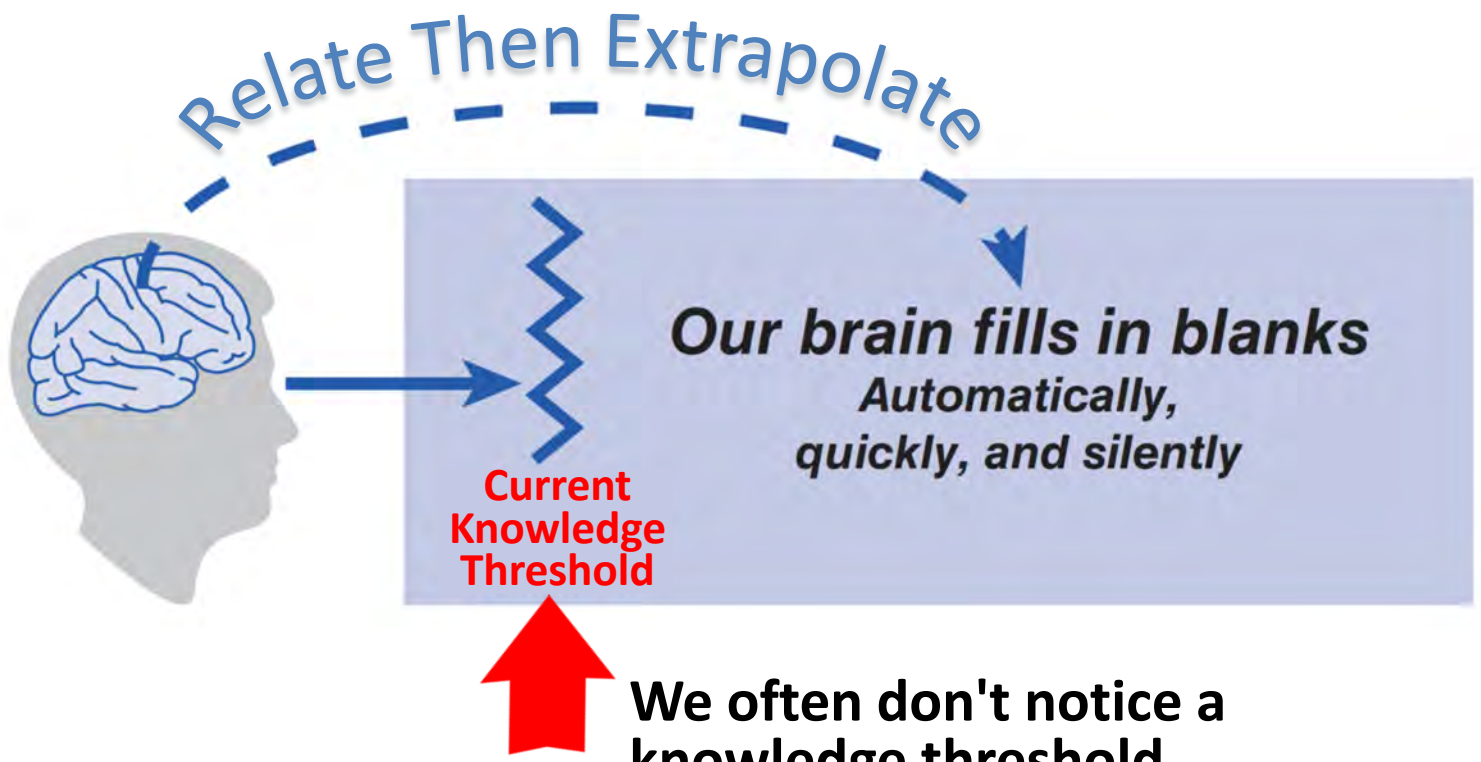
A practical, scientific ***way of working*** & ***thinking***



Scientific Thinking

TH HMN MND: PWRFL PTTRN RCGNTN SYSTM

Our brain creates feelings of certainty based on the bits of information it receives



We often don't notice a knowledge threshold. That's where trouble starts!

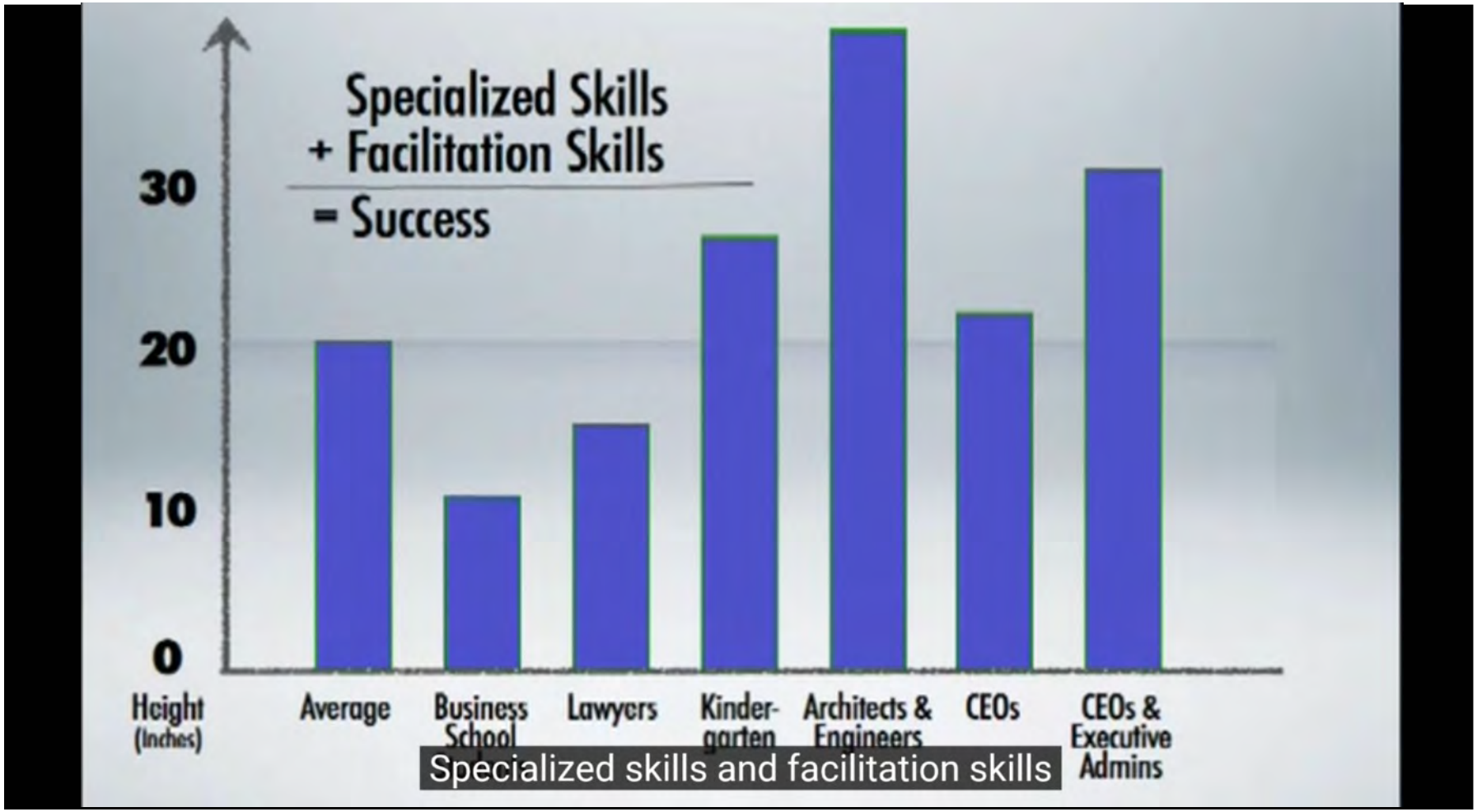
We need a way to foil this flaw
in our mental formulations.

Tom Wujec Summarizes “The Marshmallow Challenge”

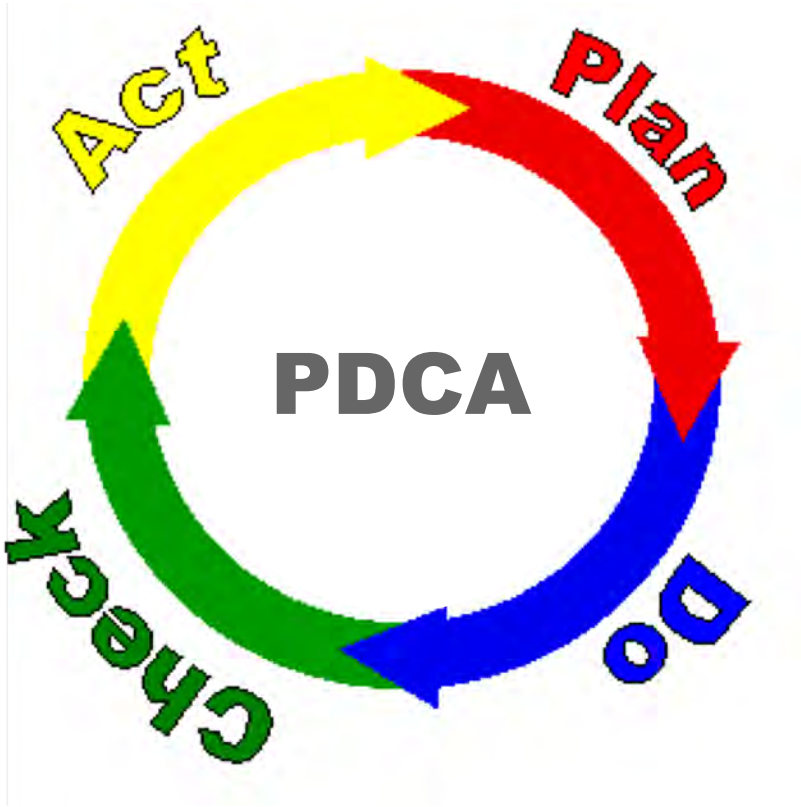
From 2010 TED talk

Why Kindergarteners

From 2010 TED talk



Summarizing a Kindergartener's Secret to Spaghetti Success:



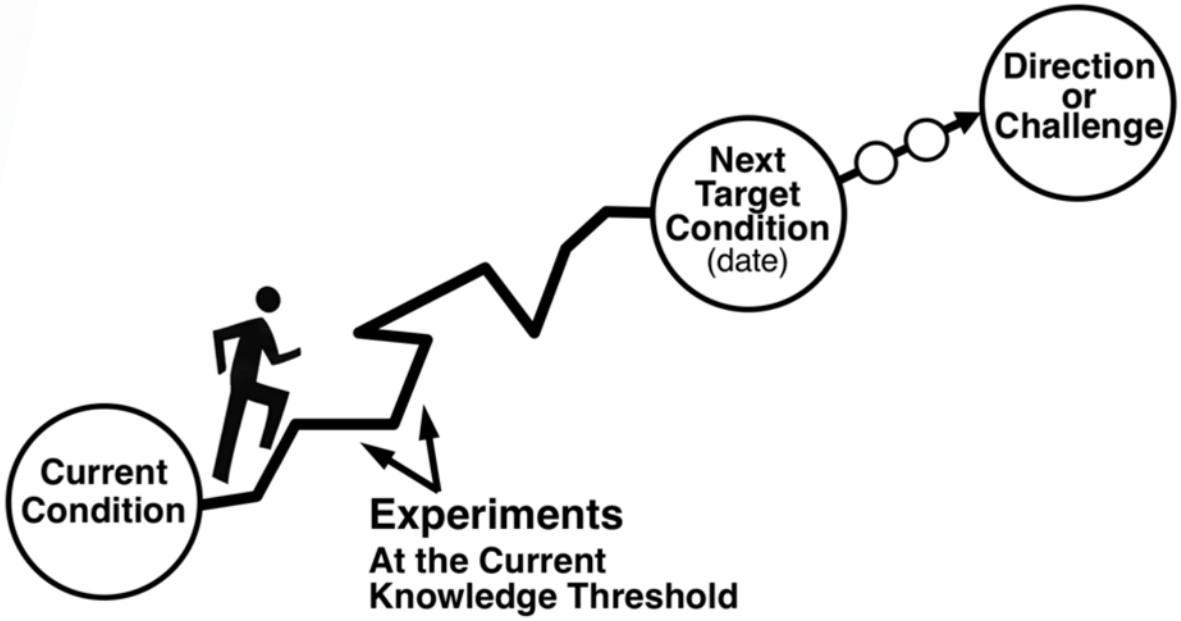
A COUNTERMEASURE: SCIENTIFIC THINKING

A routine of *intentional* coordination between what we *predict* will happen next, *seeing* what actually happens, and *adjusting* based on what we ***learn*** from the difference.

Why don't *big* people naturally do this?

HOW DO YOU ACQUIRE SUCH A WAY OF THINKING?

A model alone is not enough



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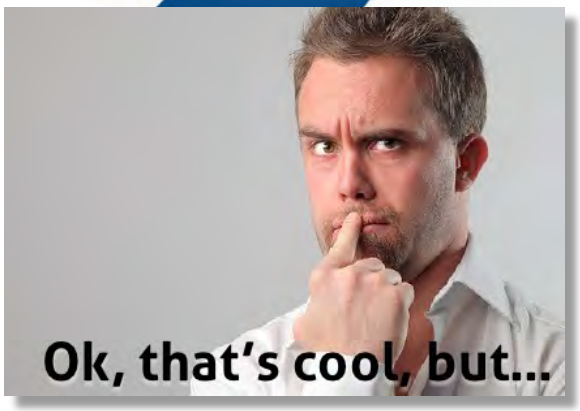

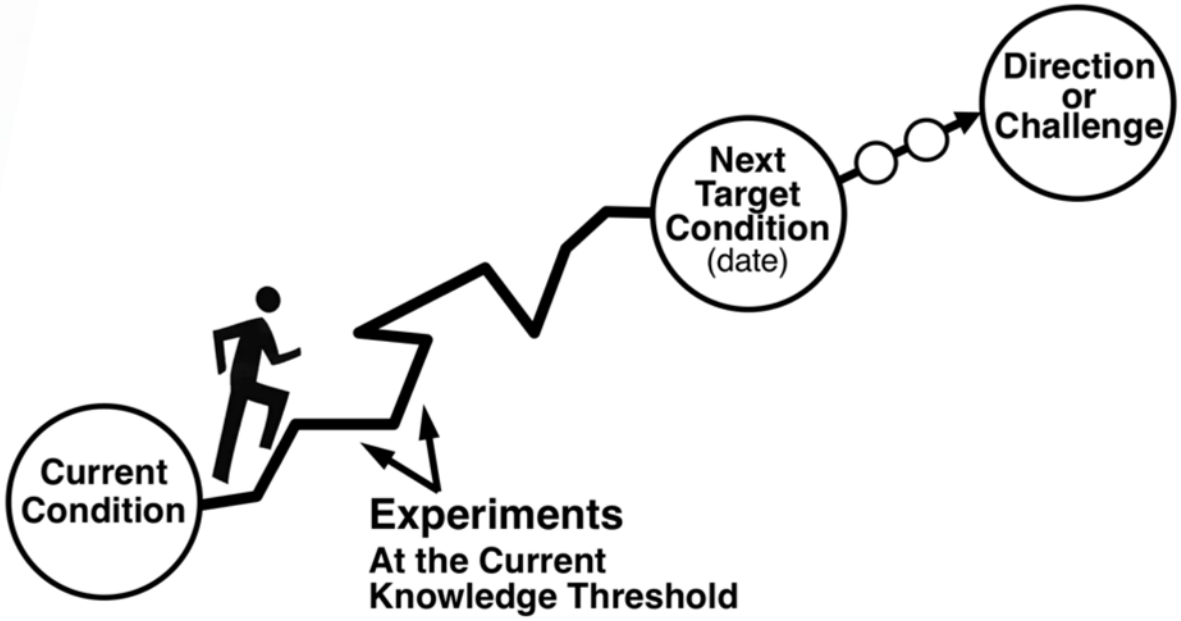

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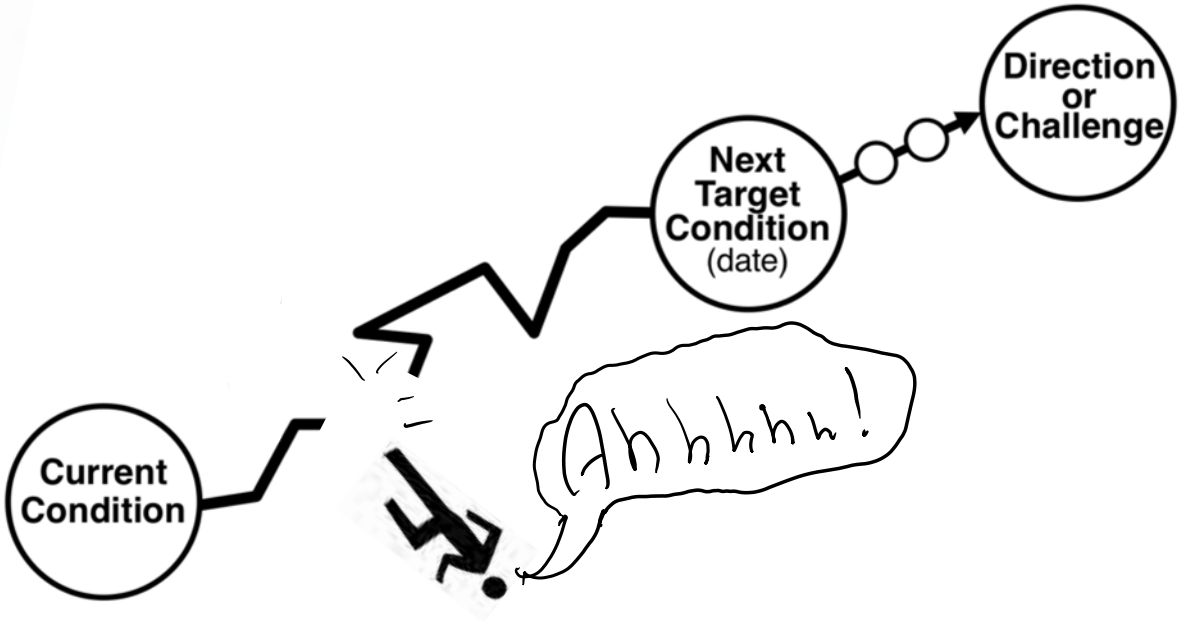


Deliberate Practice

Let’s try an experiment

WHAT DOES IT TAKE TO LEARN NEW SKILLS AND CHANGE OUR THINKING?

Take a moment... please cross your arms

LET'S TRY JUST A SMALL CHANGE

Now re-cross them the other way

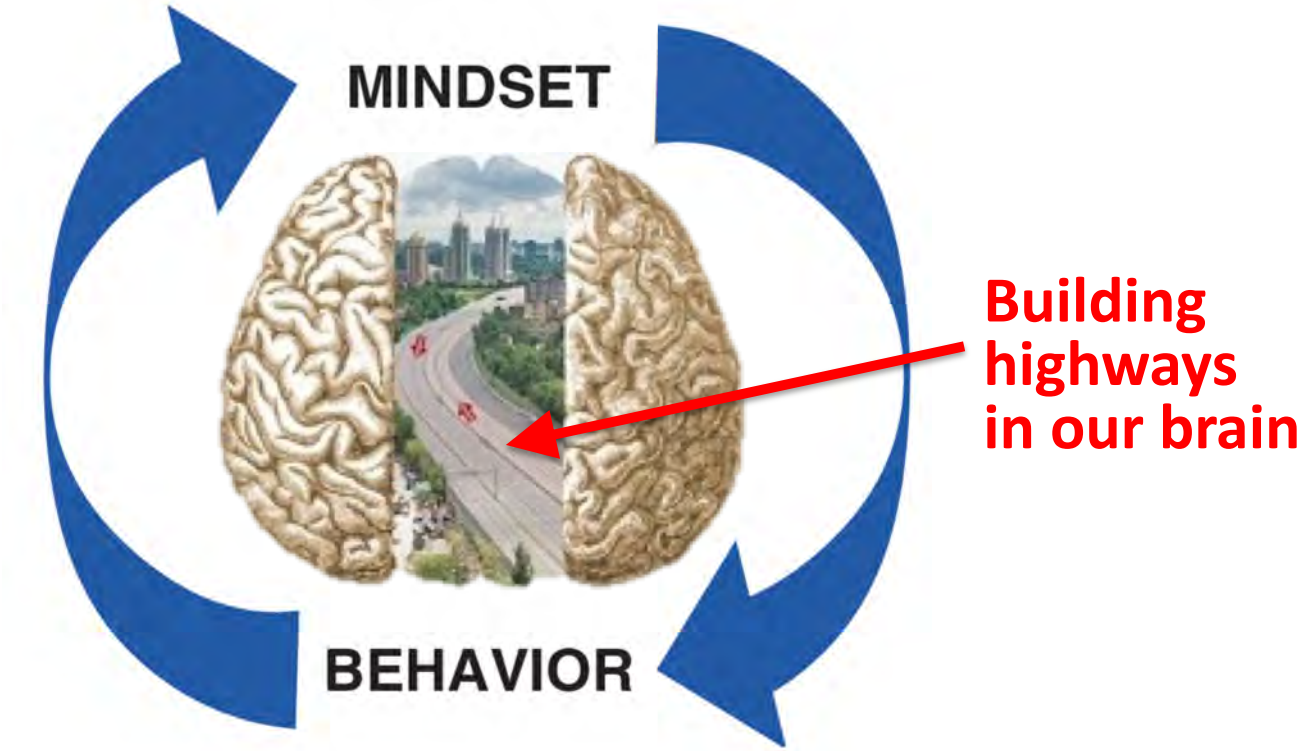
HOW DID IT FEEL THE SECOND TIME COMPARED TO THE FIRST?

SECOND TIME

Awkward
Slow
Unnatural
Stiff
Uncomfortable
Difficult
It feels wrong
Had to think about it

OUR THINKING PATTERNS ARE IN A LOOP

You've practiced folding your arms one way for decades



Every time you think or do something, you are more likely to do it again

WHY THE 2nd TIME FEELS DIFFERENT

The brain favors practiced neural pathways, to conserve energy and for safety

Fast & Efficient
Neural Pathways
Our Habits

Slow and Inefficient
Neural Pathways
New Ways

Crossing arms the usual way
The highways in our brain require little attention and energy

Crossing arms the other way
Doing something new or different requires attention and energy (at first)

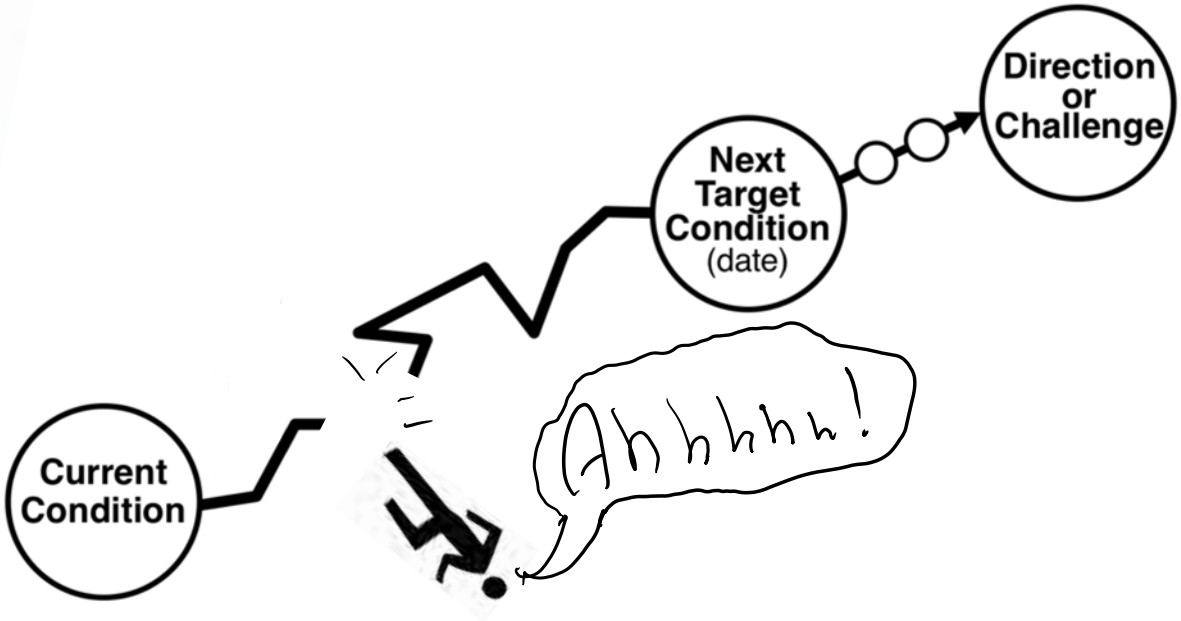
THIS IS WHAT YOU *WANT* TO FEEL

It means you're building new neural paths (learning)

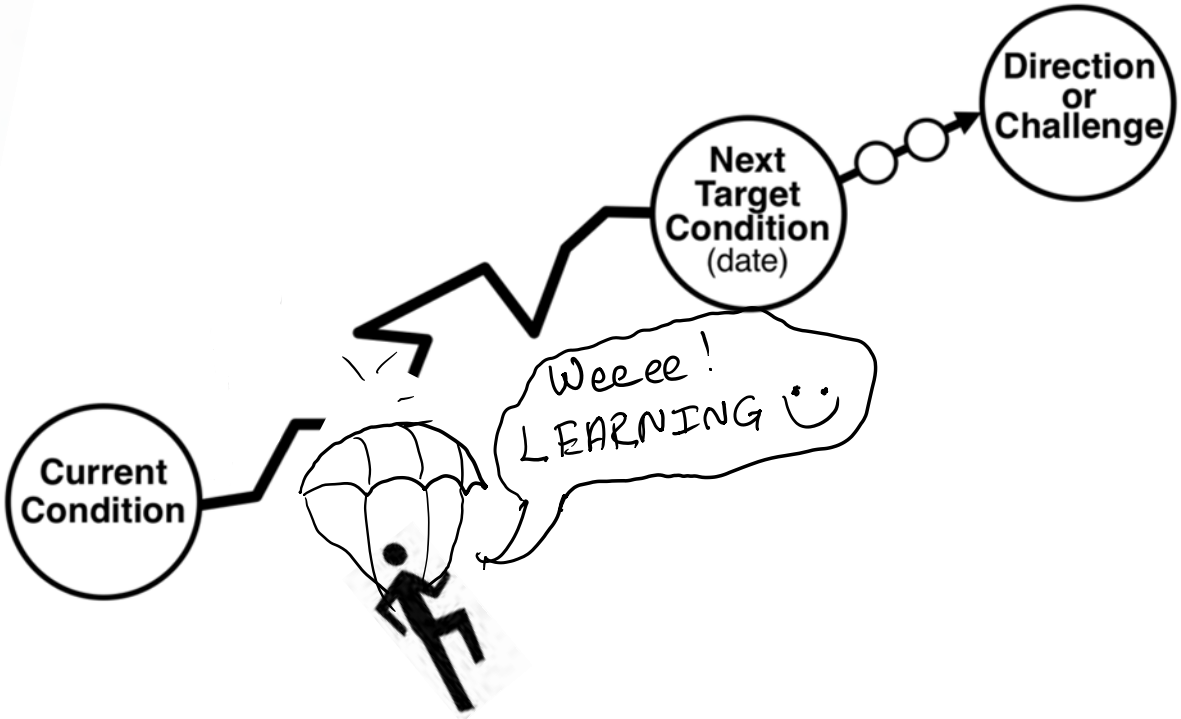
Awkward
Slow
Unnatural
Stiff
Uncomfortable
Difficult
It feels wrong
Had to think about it

This feeling is not a negative thing. It's a positive indicator of someone starting to learn something.

STRIVE TO MAKE THIS. . .



FEEL LIKE THIS!



Here's the thing...

Scientific thinking is not our default mode as adults

Scientific Thinking is Learned

~~Born?~~

Learned

Adults are bad at scientific thinking, due to all our learned neural paths

HOW?

AN ANSWER

1. Scientific Thinking Pattern
+
2. Techniques of Deliberate Practice

As in sports & music

Toyota Kata brings these two things together

THERE'S ALSO A COACHING KATA

Corrective, situational feedback for each learner

IK
Practicing Improvement Skills

CK
Practicing Coaching Skills
(The Manager)

REMEMBER: Friends don't let friends Kata alone.

What is KATA?

What is Kata?

A kata is a routine used for passing on know-how

The suffix kata means “way of doing.”

It refers to a form, routine, or pattern of behavior, which can be practiced to become second nature.

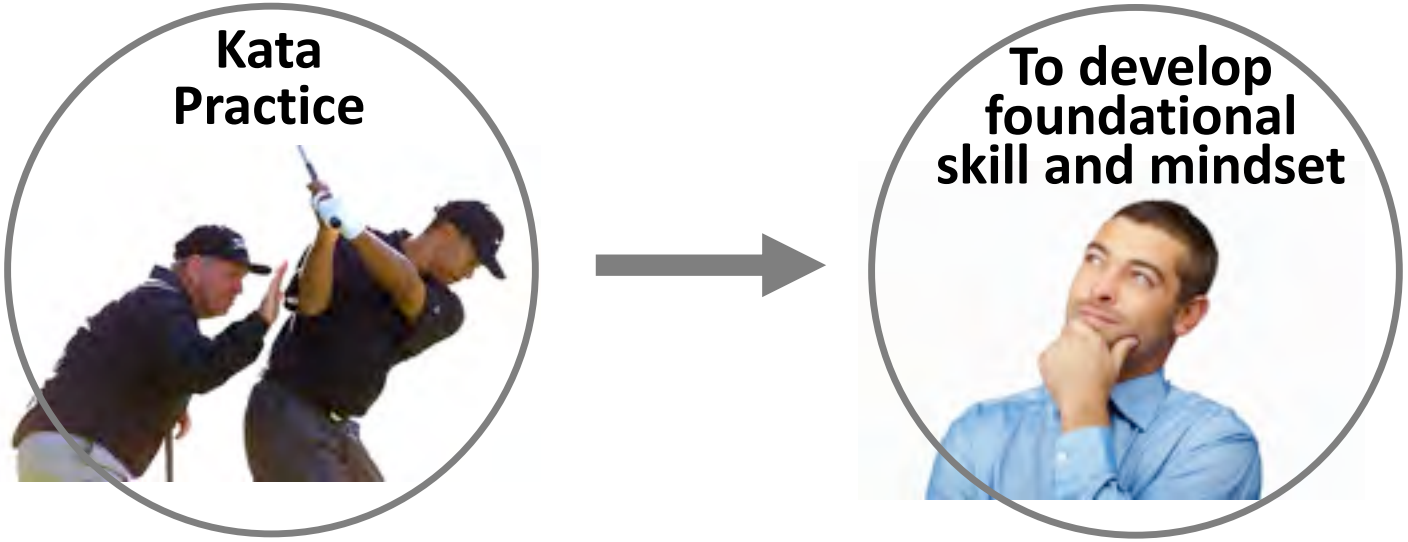
The practicing is done to develop skill.

Some common definitions are:

- A way of doing something
- A pattern, form, routine, or method
- A training drill

WHAT KATA ARE FOR

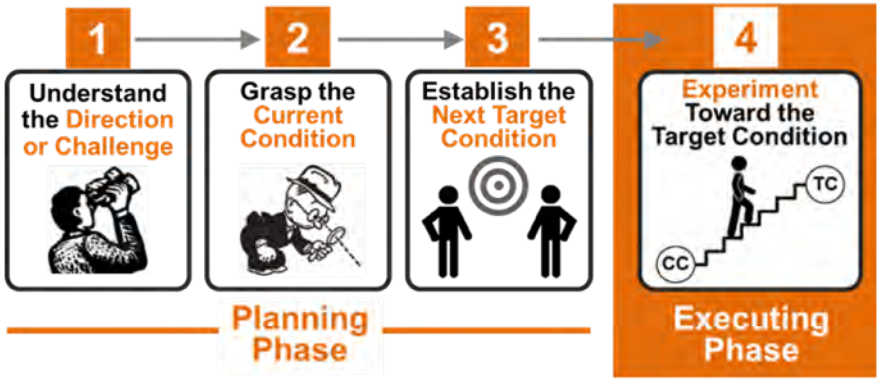
The Routines of the **Improvement Kata** and **Coaching Kata** are Practiced to Develop Scientific Mindset



Beginners should follow Kata EXACTLY; not deviating from them, so the Learner can internalize the patterns.

But with increasing proficiency each Learner can start to (within limits) develop their own style.

Likewise, over time each organization can evolve the Kata it began with to better suit and mesh with its culture. The original Kata evolve into organization-specific practice routines.

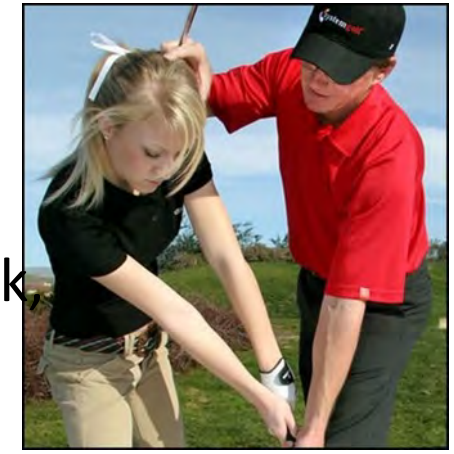


THE IMPROVEMENT KATA

The Improvement Kata is a model of the human creative process. It's a 4-step pattern of establishing target conditions and then working iteratively (scientifically) through obstacles, by learning from them and adapting based on what's being learned.

THE COACHING KATA

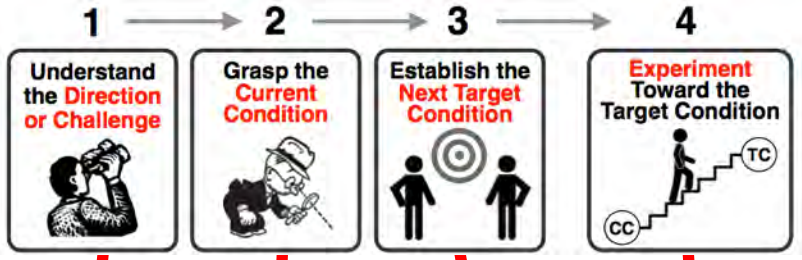
The Coaching Kata is a pattern for managers to follow in teaching the Improvement Kata pattern in daily work, so that it becomes part of an organization's culture.



START BY PRACTICING FUNDAMENTAL SKILLS

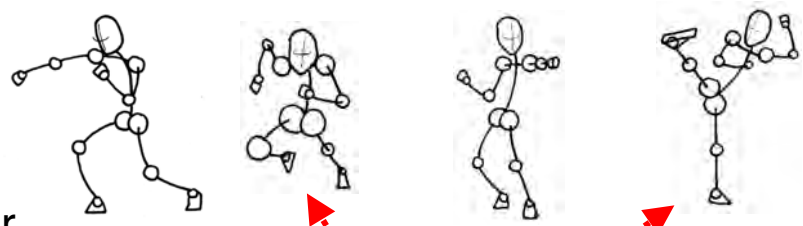
The IK Model

A scientific way of working



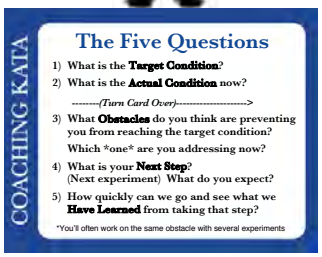
The IK Practice Routines

For the Learner



The Coaching Kata Practice Routines

For the Coach



BASIC PRINCIPLES

START PRACTICING THESE

Then build on them to suit your organization

START PRACTICING THESE

Then build on them to suit your organization

Improvement Kata

IK = 4 STEPS

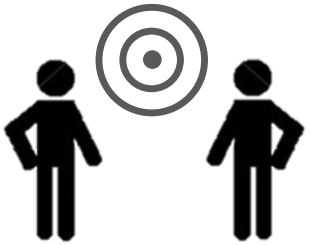
THE FOUR STEPS OF THE IMPROVEMENT KATA MODEL

A systematic, scientific pattern of working

1 Understand the Direction or Challenge

2 Grasp the Current Condition

3 Establish the Next Target Condition



4 Experiment Toward the Target Condition

Planning Phase

Executing Phase

Remember: The Improvement Kata combines scientific steps + techniques of deliberate practice for each step, to develop effective problem solving skill

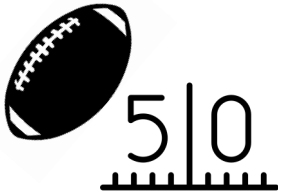
Is that Improvement Kata?

A systematic, scientific pattern of working

1 → **2** → **3** → **4**

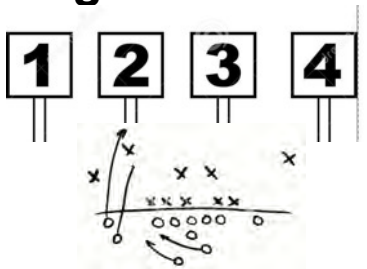
1 — Understand the Direction or Challenge

2 — Grasp the Current Condition



3 — Establish the Next Target Condition

4 — Experiment Toward the Target Condition



Planning Phase

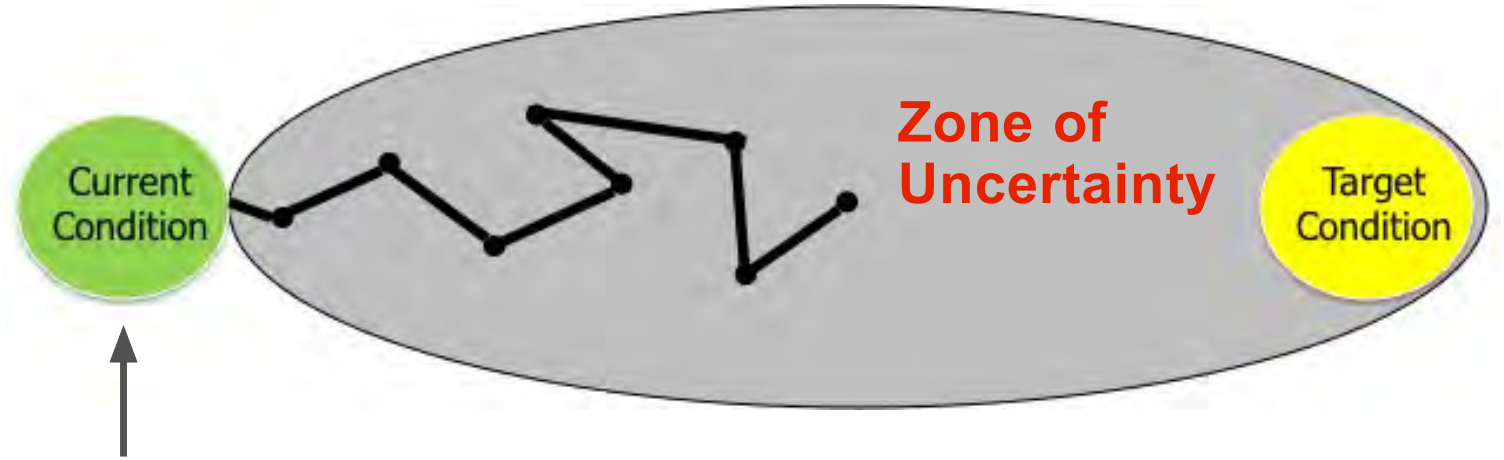
Executing Phase

DELIBERATE PRACTICE = set routine to understand what is the challenge, where we want to be, where we are currently, and how we're going to get there.

SCIENTIFIC THINKING = let's try this play to see if we move the ball down the field

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!

STEP 1

Understand the DIRECTION or CHALLENGE

Understand the Direction or Challenge

What we do today

Where exactly do we want to be next?

The CHALLENGE serves as direction

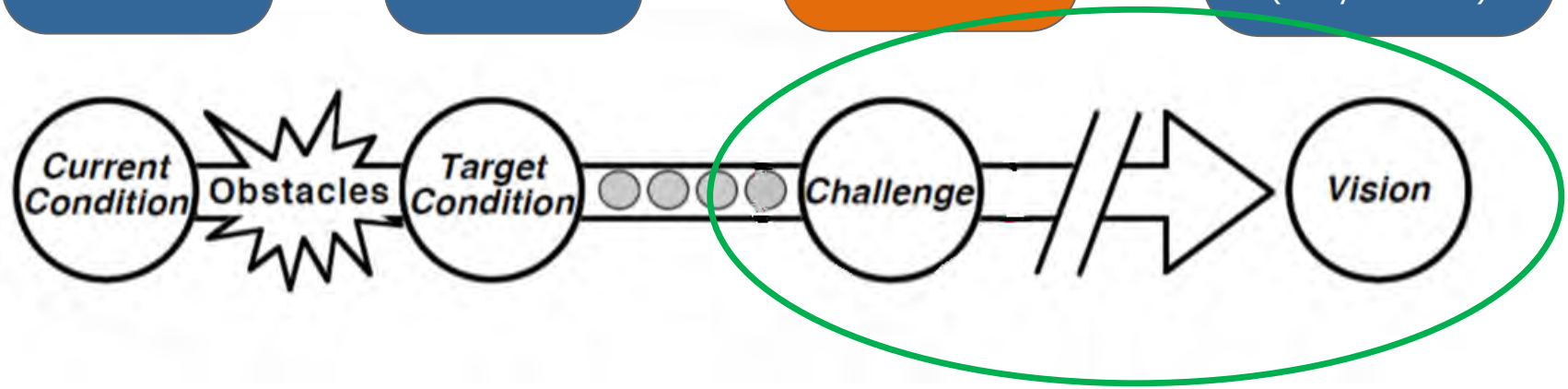
Specific

(1-3 years out)

The VISION serves as a direction

Vague

(3+ years out)

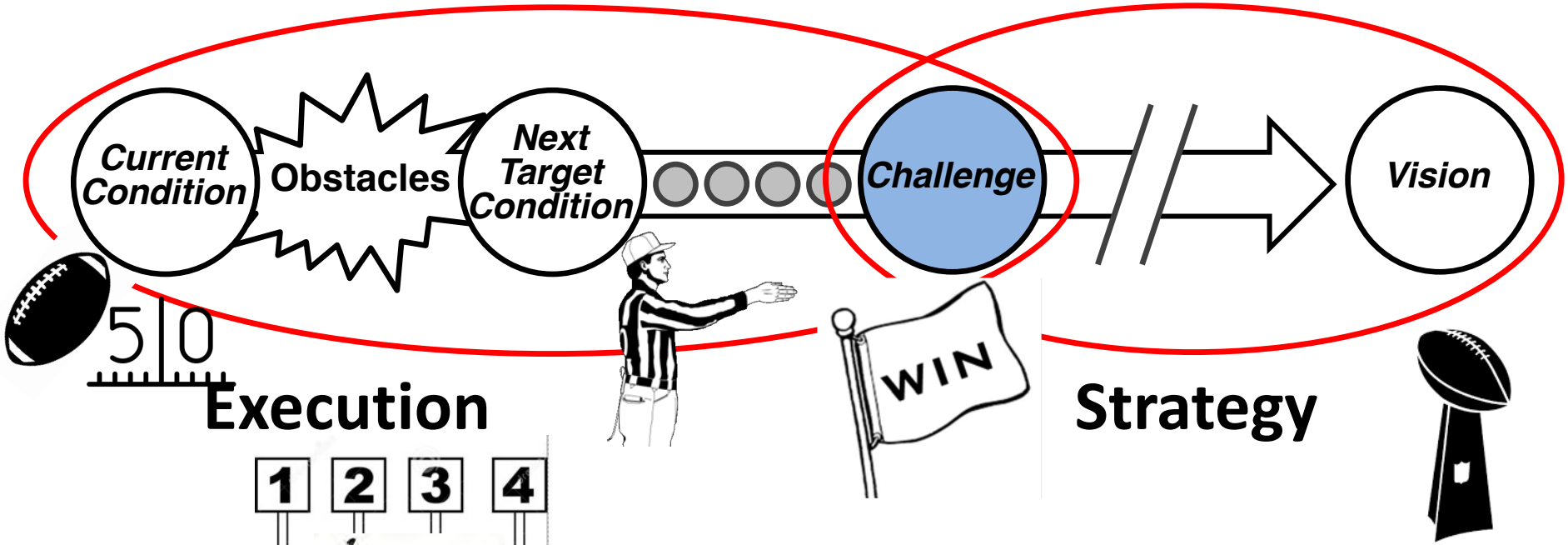


CONNECTING STRATEGY & EXECUTION

The role of Challenge in an organization

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

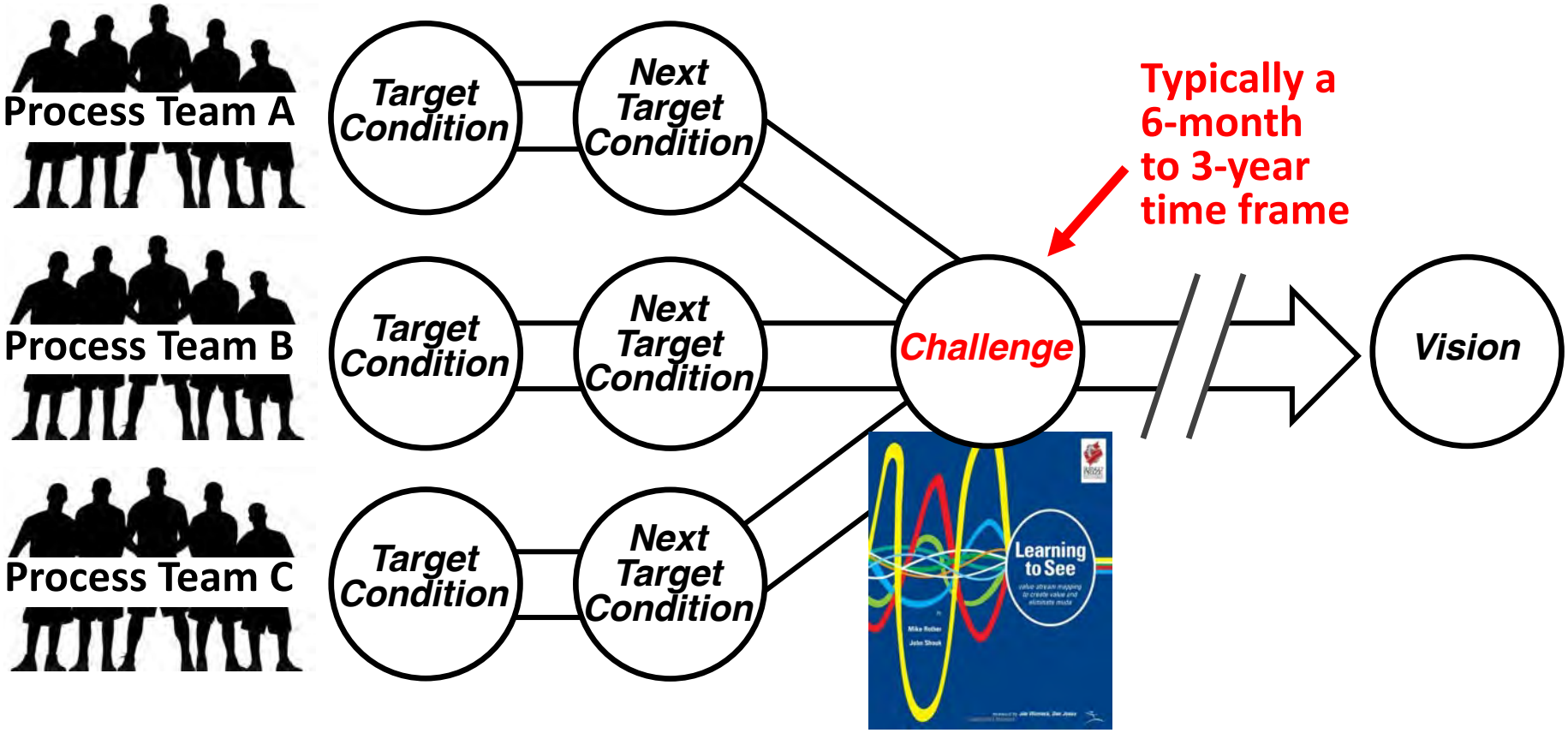
Leaders establish the organization's strategic concept (the "rallying point" or overall direction)



By Mike Rother

THE ROLE OF VALUE STREAM MAPPING

This is a main intended role for VSM



By Mike Rother

STEP 2

Grasp the

CURRENT CONDITION

Grasp the Current Condition

- Determine the current pattern of operation
  - Obtain **FACTS** and **DATA**
  - Don't underestimate the time it takes to get the current condition, but don't try to understand everything before establishing the target condition
    - As you conduct PDCA cycles, you will learn more about the current condition
  - **GO and SEE process as it is running!!**
- What is needed?
  - Overview of the process
    - High level **BOX DIAGRAMS** or process flow
    - Data – takt time, cycle time, yield, set-up time, # of operators, # of shifts, variation/fluctuation, scrap rate, etc.

Identify and track what is needed to understand the current pattern of operation.

Grasp the Current Condition

- Keep gathering information until you can describe how the process operates and performs utilizing quantifiable data and noted patterns.
  - **We only know what we know today**

CURRENT CONDITION / TARGET CONDITION			Outcome Metric
Learner: Coach:		Focus Process	Process Metric
		Current Condition Date	Target Condition Achieve-by Date
1 Outcome Performance	Actual output		
	Operating time		
	Is there overtime?		
2 Customer Demand & Planned Cycle	Requirement		
	Takt time		
	Planned cycle time		
3 Operating Patterns	Process steps and sequence		
	Variation		
	Observations about the current operating patterns		
4 Equipment Capacity	Automated equipment constraints?		
5 Core Work	Calculated number of operators		

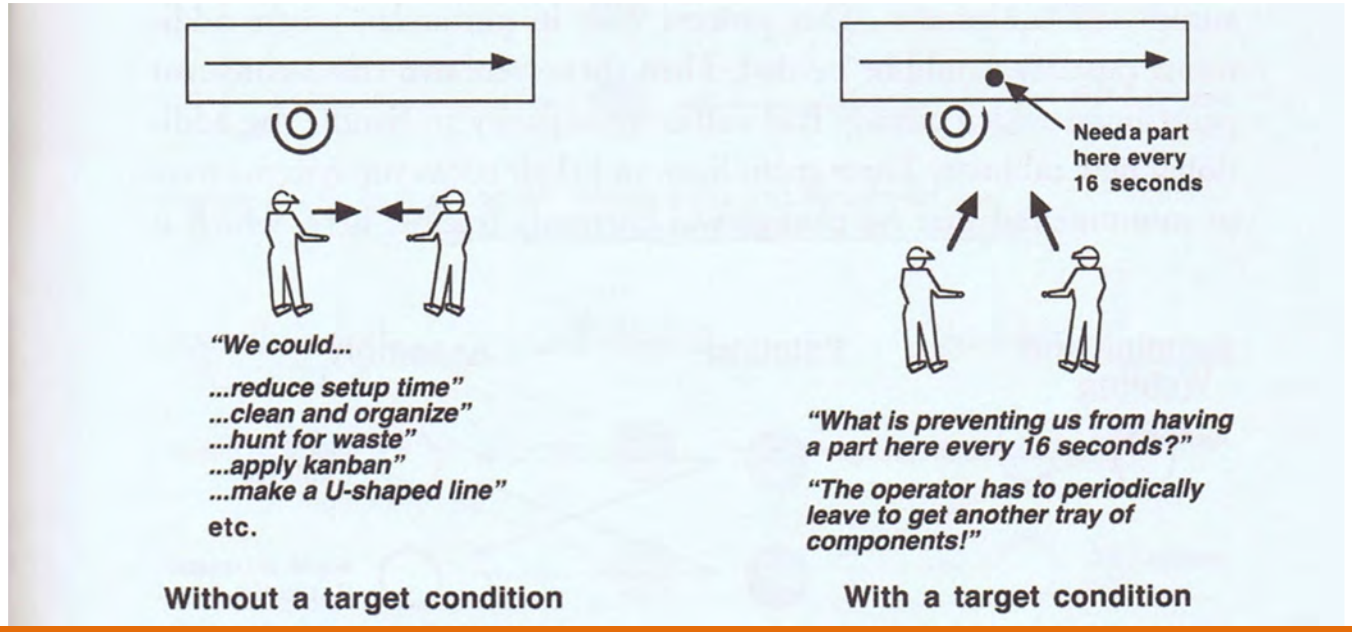
STEP 3

Establish the Next

TARGET CONDITION

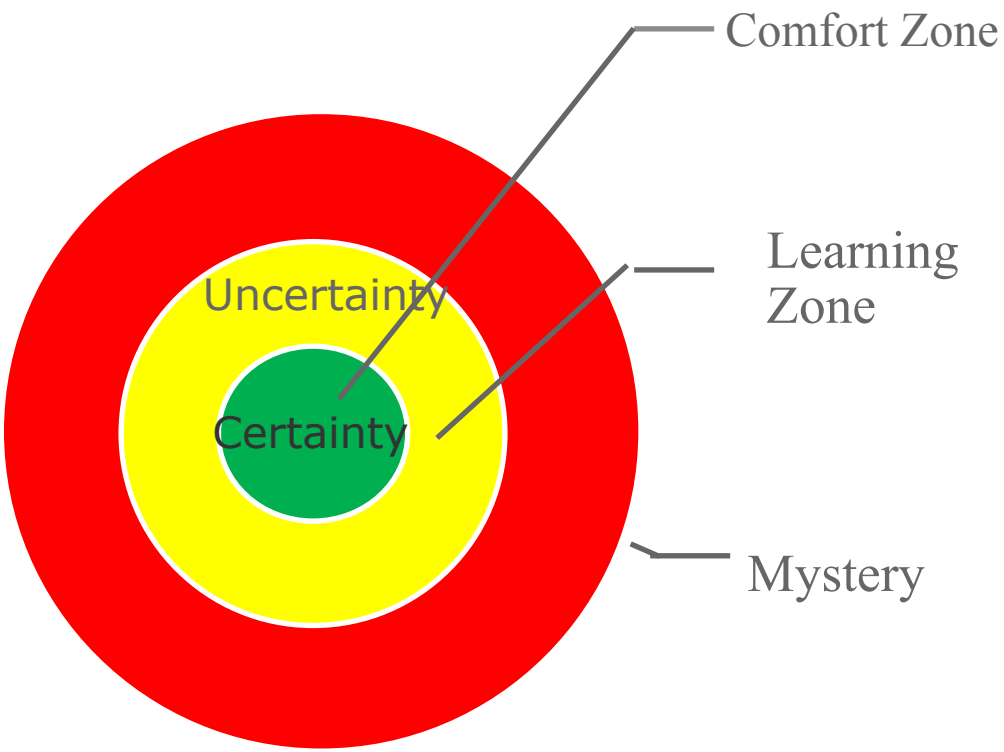
Establish the Next Target Condition

- A target condition describes a desired **FUTURE STATE** (toward the challenge/vision) to be achieved by a **SPECIFIED DATE**.
  - Should be a step in the direction of the challenge/vision.
  - Not about choosing between existing options or best practices. It is about striving to a new performance.
- By setting a target condition and trying to achieve it, you learn why you cannot (Obstacles) --**That's what you work on!**



Establish the Next Target Condition

- The target condition should be beyond your "knowledge threshold"
  - Which means, you do not already know how to reach it
  - Requires experimentation and learning to reach it



Improvement Kata helps to experience uncertainty more as an opportunity.

We're using IK as a guide to move us out of our comfort zone.

Required Components of Next Target Condition

- Achieve by Date
  - 1 week for Starter Kata; later 2 weeks to few months
- Desired Outcome Performance
  - Outcome Metrics
- Desired Operating Pattern
  - Describe how the process operates and performs

The clarity of the Target Condition should be so clear that you've seen the Future State.

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What is an Obstacle?

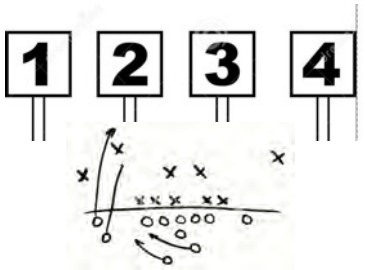
Obstacles are problems that appear to be preventing you from reaching the Target Condition... stated as problems. Obstacles are often mistakenly stated as countermeasures or solutions that the Learner already has in mind.

OBSTACLE EXAMPLES	
POOR	GOOD
"Lack of a standard" 	"Variability in how the work is done"

Looks like Learner is already thinking that they want to implement a standard as a solution. Too soon!

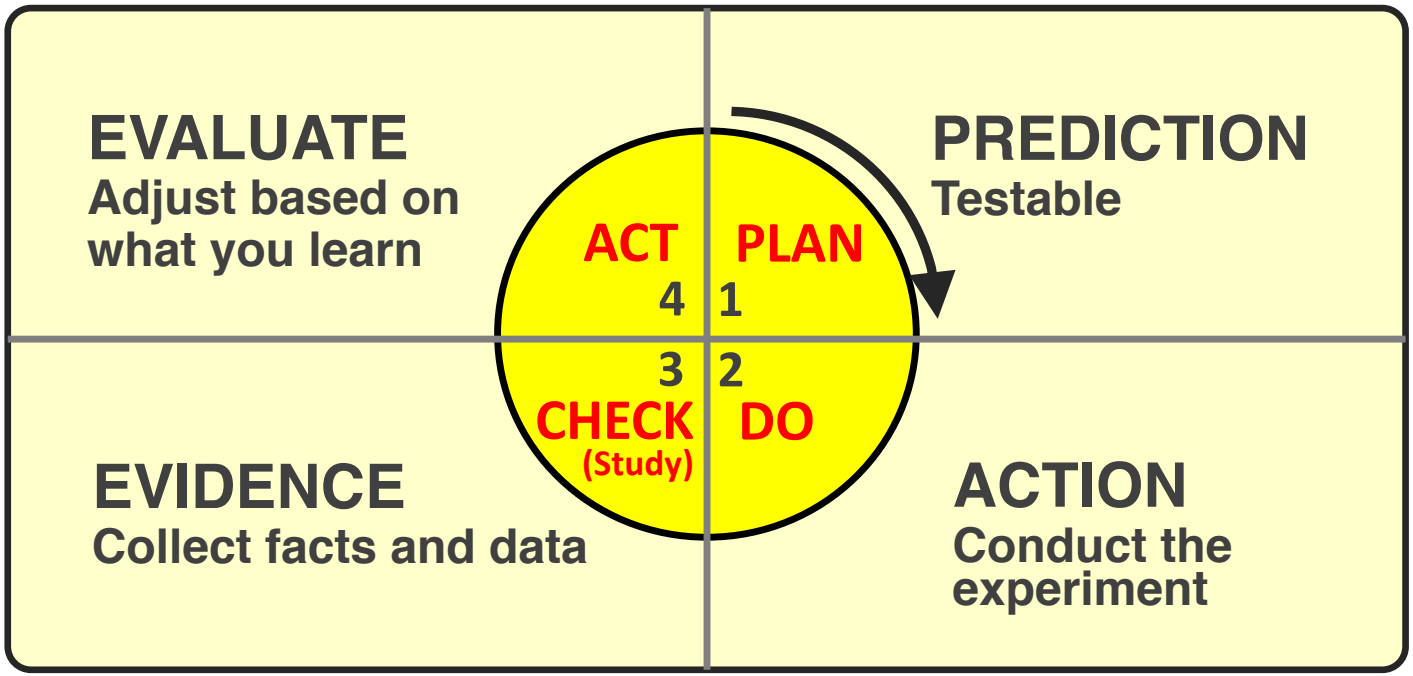
STEP 4

PDCA toward the Target Condition



THE SCIENTIFIC LEARNING CYCLE

Is sometimes called
"Plan-Do-Check-Act" or "Plan-Do-Study-Act"

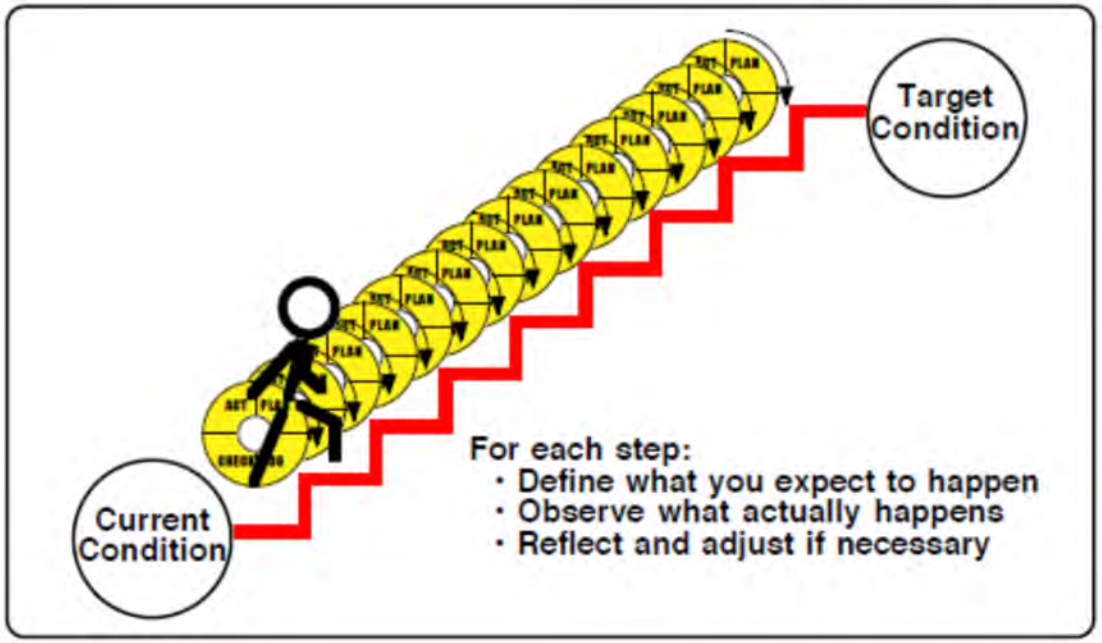


By Mike Rother

Daily PDCA Toward the Target Condition

- PDCA is a scientific process of acquiring knowledge
  - Learning along the way to the target condition
  - Iterative process
- Look for the knowledge threshold….this is where you should do the next PDCA experiment
  - The point at which you have no data or facts and start guessing
    - "We think that…."
    - "I don't know if……"
    - "Maybe it's…."

Goal is small, rapid PDCA cycles to the Target condition



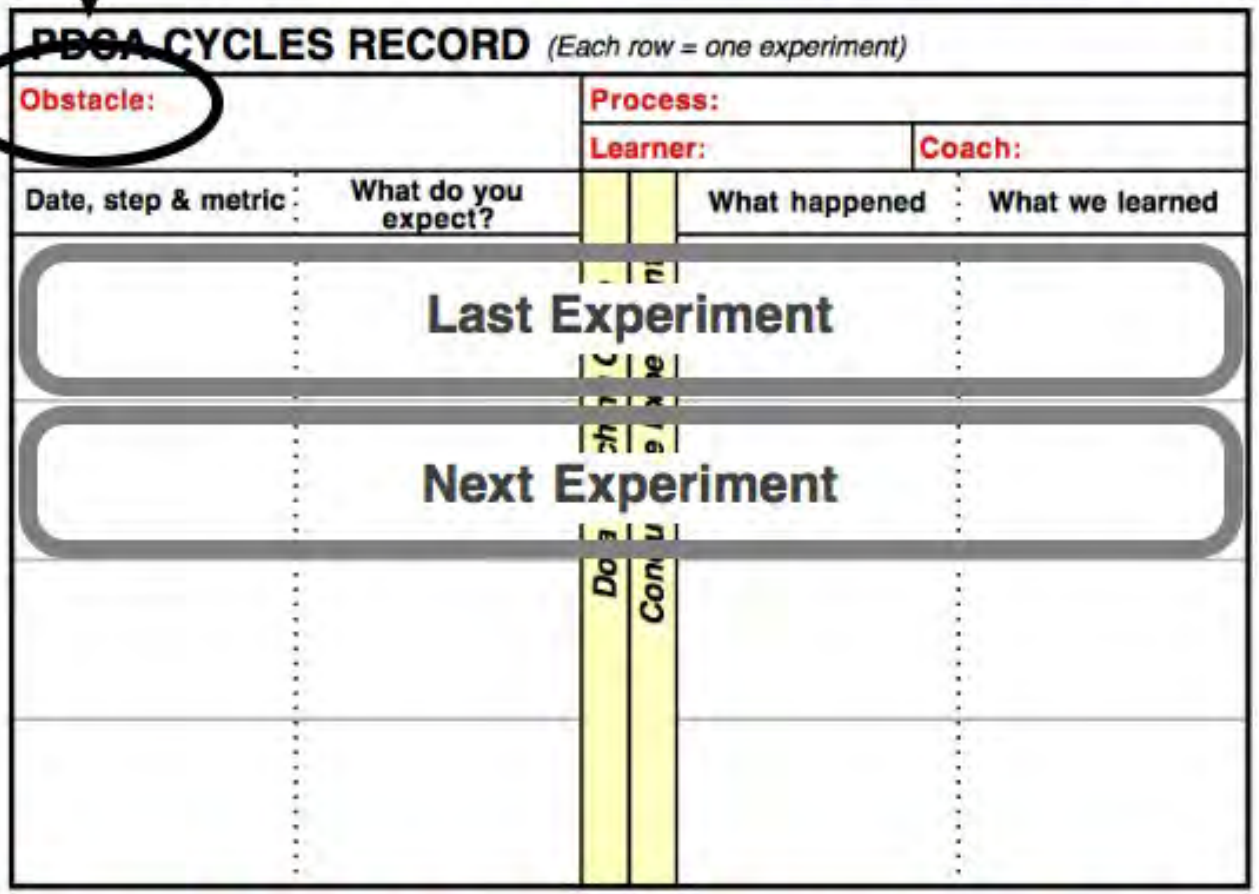
LAYOUT OF THE PDCA CYCLES RECORD

One obstacle per form*

Each row = one experiment against the current obstacle

This is the obstacle to the target condition, that you are currently working on.

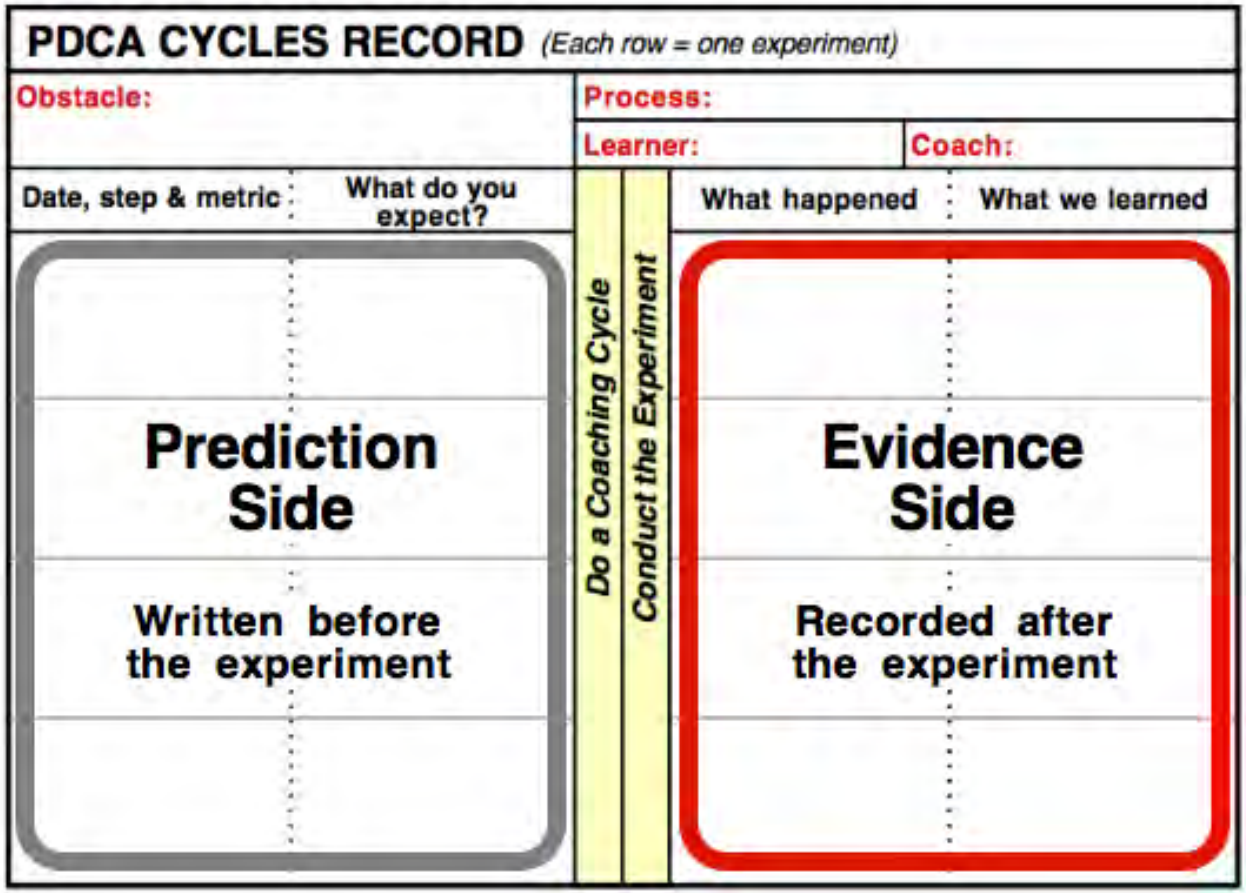
**** Whenever the Learner starts working on a new obstacle, s/he should start a new PDCA Cycles Record***



It usually takes a series of experiments in order to overcome an obstacle

LAYOUT OF THE PDCA CYCLES RECORD

The *prediction side* and the *evidence* side



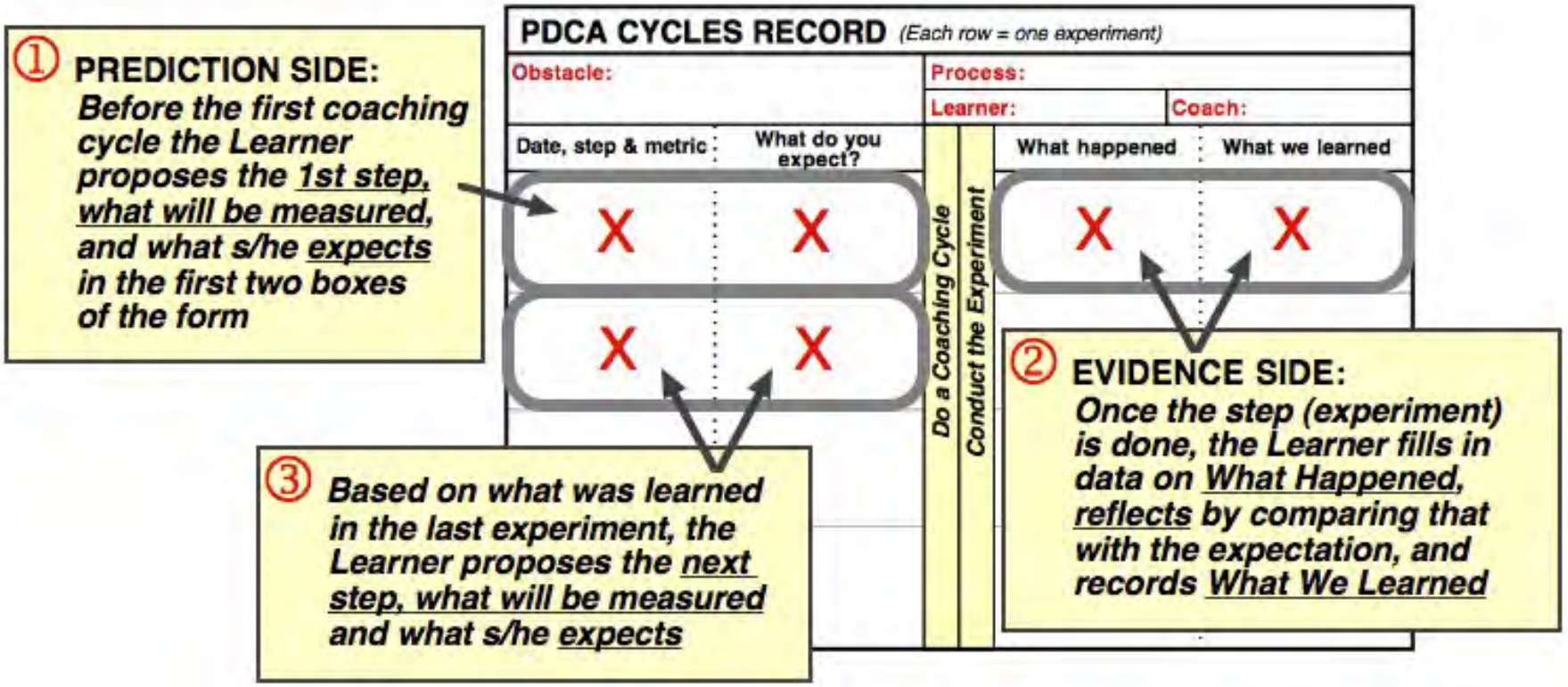
The prediction side (LEFT) is where you plan the next experiment and predict the outcome

The evidence side (RIGHT) is where you record what actually happened, compare that with the prediction and record what you learned

How to use the PDCA Cycles Record

The pattern of the form repeats with each experiment.

Each row = one experiment.

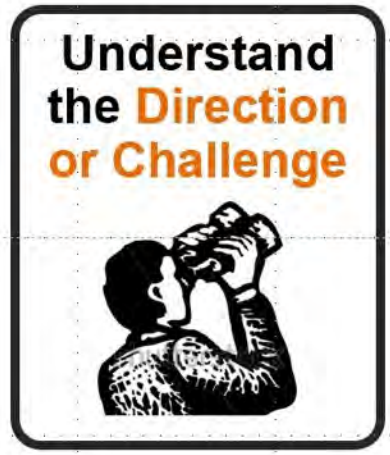


In a coaching cycle the Learner reads the form from led to right, in response to the Coach's questions

Coaching Kata

CK = 5 QUESTIONS

Coaching Kata



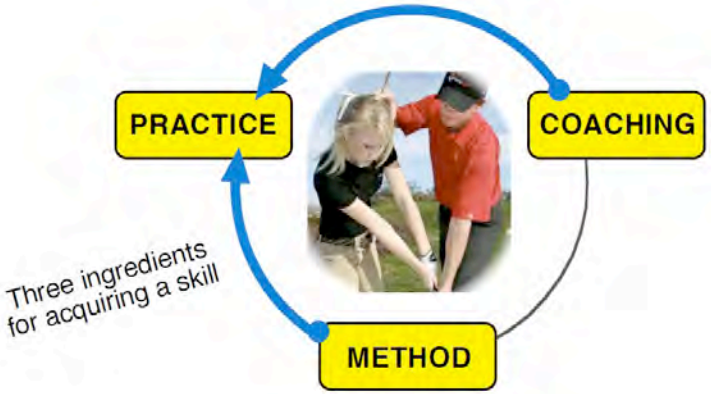
Teaching the
Improvement Kata pattern
through coached practice

Based on daily
coaching cycles with
The Five Questions

Coaching Kata

Coaching Kata

- What is the focus of the Coach?
  - Ensure the learner is following good procedure as the team conducts experiments
  - Teaching a way of thinking and acting
  - Building a normal daily routine – form a habit
- Why Coaching Cycles?
  - Facilitate improvement kata skill development of learners
  - Develop their own effective coaching habits
    - Power of the 5 questions is great, when you know how to ask them and how to respond to the answers you get



Coaching Kata

The 5 Questions

The 5 Questions Card
Used by the COACH

5 Questions
=
One PDCA Cycle
=
One Coaching Cycle

Rapid PDCA Cycles

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

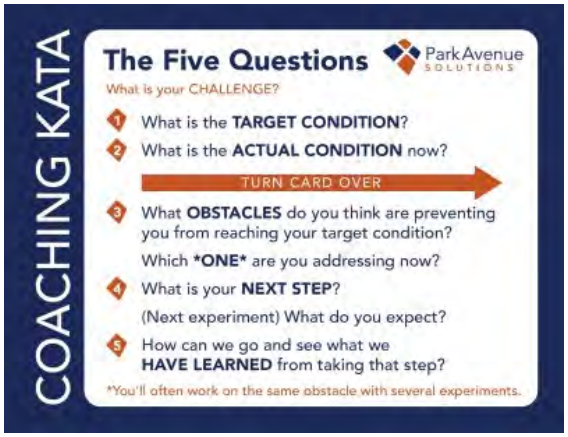
PDCA Cycle Log
Used by the LEARNER

Coaching Kata – The 5 Questions in Detail

1) What is the target condition?
   - Show me what the process should look like (steps, sequence, times, material, etc.)
   - What is the process metric?
   - What is the outcome metric?
2) What is the actual condition now?
   - Show me the current facts and data
   - **What did you plan as your LAST STEP?**
   - **What did you EXPECT to happen?**
   - **What ACTUALLY HAPPENED?**
   - **What did you LEARN?**

Reflection

3) What obstacles are currently preventing you from reaching the target condition? Which **ONE** is being addressed?
4) What is your next step?
   - A next step can be further analysis
   - What do you expect?
5) When can we go and see what we have learned from taking that step?
   - Can we take this step now?



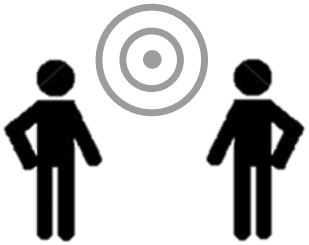
Final Thoughts

Starter Kata

1 Understand the Direction or Challenge

2 Grasp the Current Condition

3 Establish the Next Target Condition



Planning Phase

4 Experiment Toward the Target Condition

Executing Phase

Starter Kata requires that you follow the 4 Steps of the Improvement Kata rigidly at the beginning in order to form new habits of thinking and acting.

Park Avenue SOLUTIONS

It's time for YOU to try it!

More information and Starter Kata Kit available at

StarterKata.com

Park Avenue SOLUTIONS

Thank You

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Stay tuned for Part 2
"How to Kata" WORKSHOP
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