

Advanced Issues in A3 Problem Solving

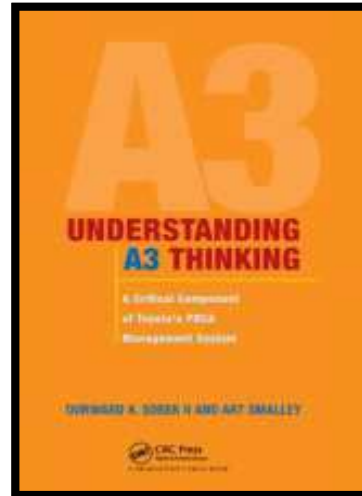


Presented by
Art Smalley
President, Art of Lean, Inc.
Advisory Board Member, OPS, Inc.

***Operational Performance Solutions, Inc.
66 East Main Street, Suite 300K
Westminster, Maryland 21157
www.OPSGroupinc.com***



Art Smalley Background



- Toyota Motor Corp.
- RWD Technologies
- Donnelly Corporation
- McKinsey & Company
- President of Art of Lean, Inc.
- Shingo Prize Award Winner
 - Author
 - Speaker
 - Trainer
 - Consultant
- Board of Advisors, OPS Inc.

<http://www.artoflean.com>

Outline For Today's Discussion

- Introduction
- Expectations
- First Principles of TPS / Lean Improvement
- Background Context on Problem Solving
- A3 Thinking Pillars (Optional Homework!)
 - Problem Solving
 - Communication
 - Mentoring
- Summary Comments
- Q&A

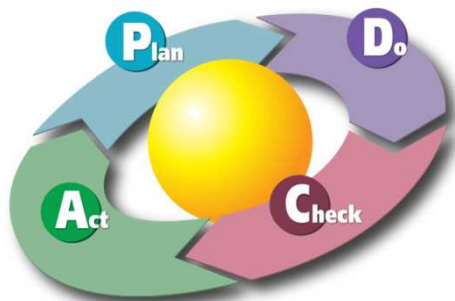
Expectations

- Knowledge versus skill...
- Coaching skill in problem solving is like coaching golf...
- PDCA type problem solving requires practice...
- First I'll give you my overall perspective on this topic...
- Second I'll give you 12 points for optional homework...

First Principles / 8 Questions

1. How will you satisfy the customer and obtain a profit?

**2. What are the main problems in your area?
(PDCA Loop)**



3. How will you build in quality 100%?

4. How will you deliver 100% JIT to the customer?

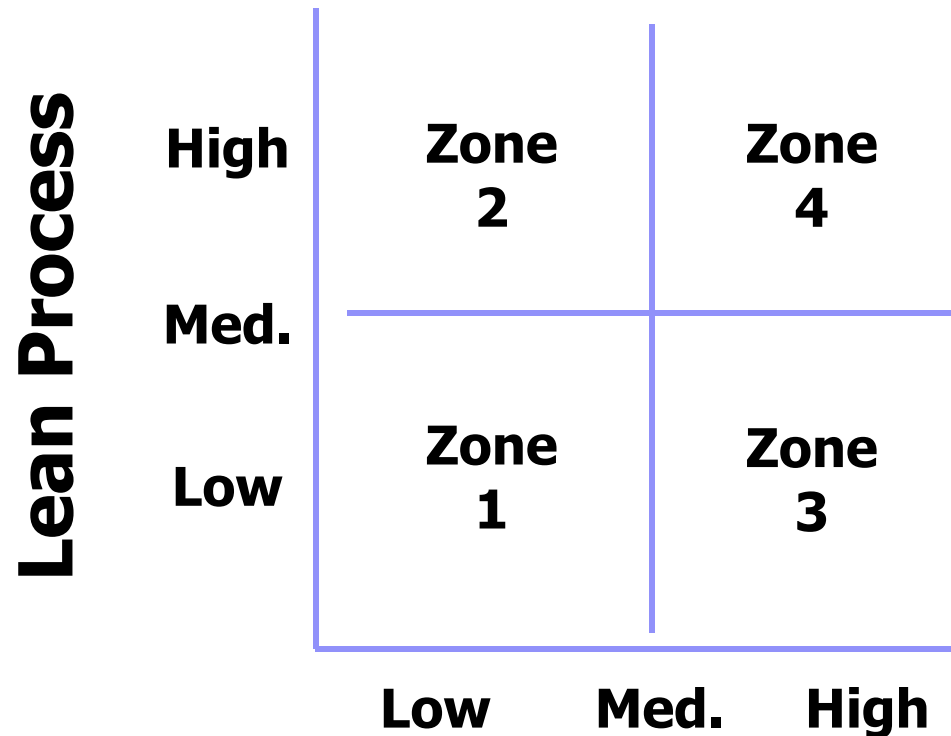
5. How will you improve process availability to 100%?

6. How will you standardize work practices?

7. How will you develop natural work team leaders?

8. How will your organization sustain and improve?

Results vs. Process



Superior Results

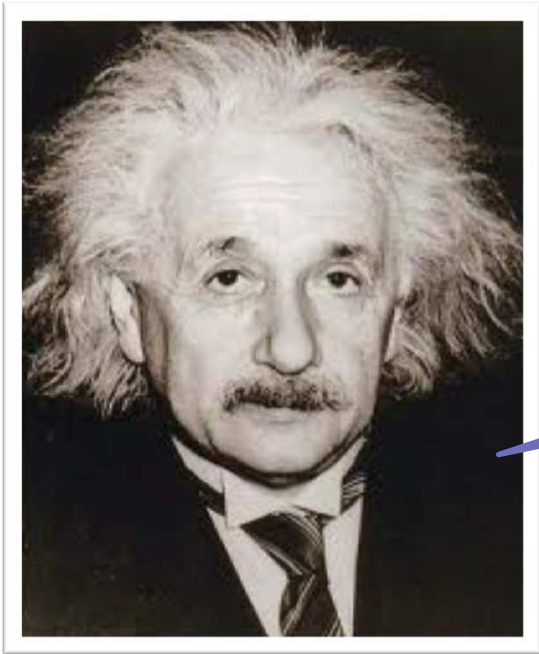
Questions

- 1) Where were you when you started your improvement journey?
- 2) Where do you want to be and by when?
- 3) Where are you now in reality and why?

Signs of Zone 2

- **Adoption of many strange sounding or foreign buzz words...**
- **Adoption of many improvement tools and techniques...**
- **Lots and lots of training...**
- **Central staff or consultant driven improvement events...**
- **Many types of lean “wall paper” ...**
- **Dedicated pockets of true believers...**
- **However few tangible results (yet) and more than a few pockets of resistance. Limited accomplishment of true PDCA.**

Einstein Quote



**"Insanity is doing the same thing, over and over again, but expecting different results."
— Albert Einstein**

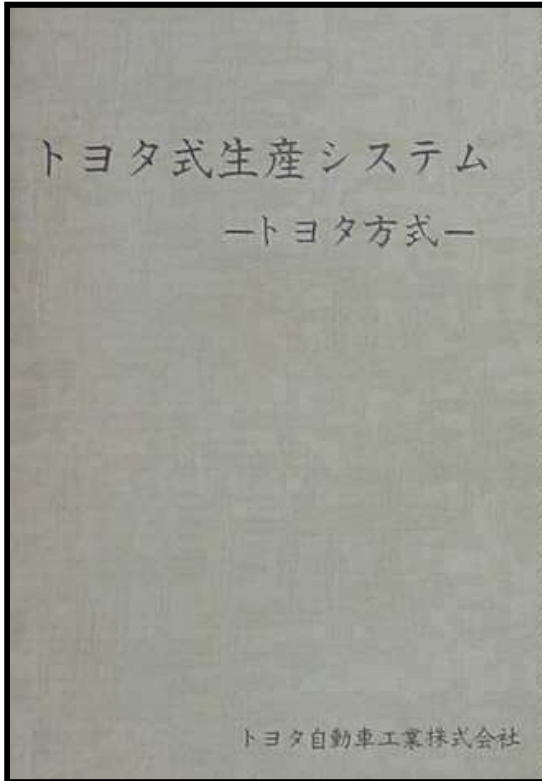
John Wooden Quote



**“Don’t mistake activity
for achievement”**

— Coach John Wooden

TPS Summary 1973



First TPS Manual.
1973 Education &
Training Department

論より実践
“Practice over theory”



専務取締役

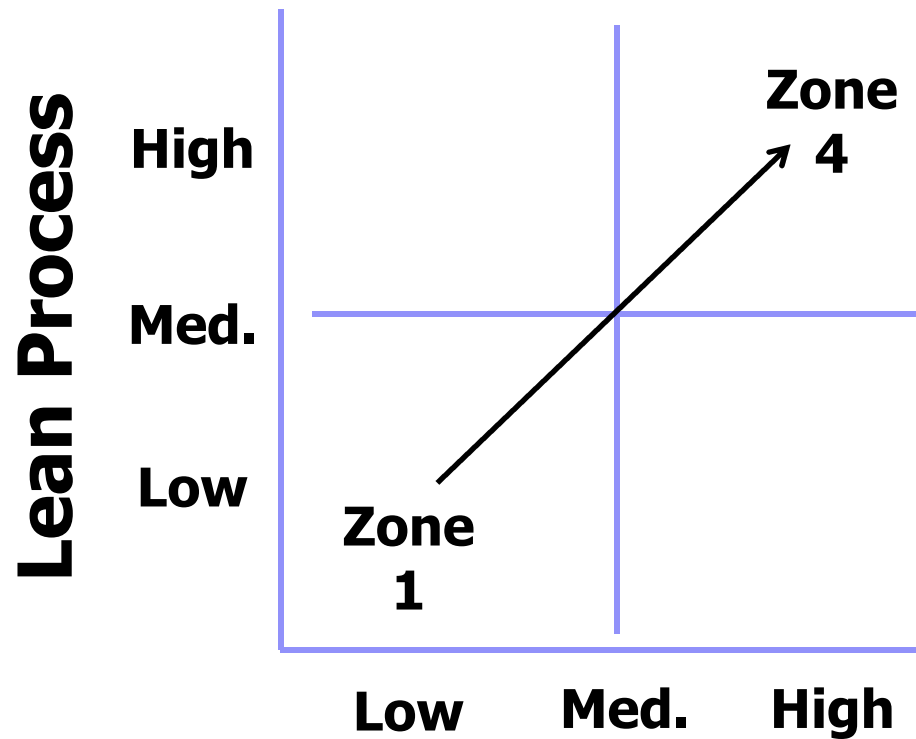
Managing Director

Taiichi Ohno

大野耐一

1. TPS is a series of related activities aimed at elimination of waste in order to improve quality, reduce cost, and improve productivity (get results!)
2. Scientific Mindset: On the shop floor it is important to start with actual phenomenon and search for the root cause in order to solve the problem. In other words we must emphasize getting the facts...
3. In problem solving the purpose must be made clear...in Kaizen the needs must be made clear (otherwise people will not follow you!).

How to get to Zone 4 with engagement?

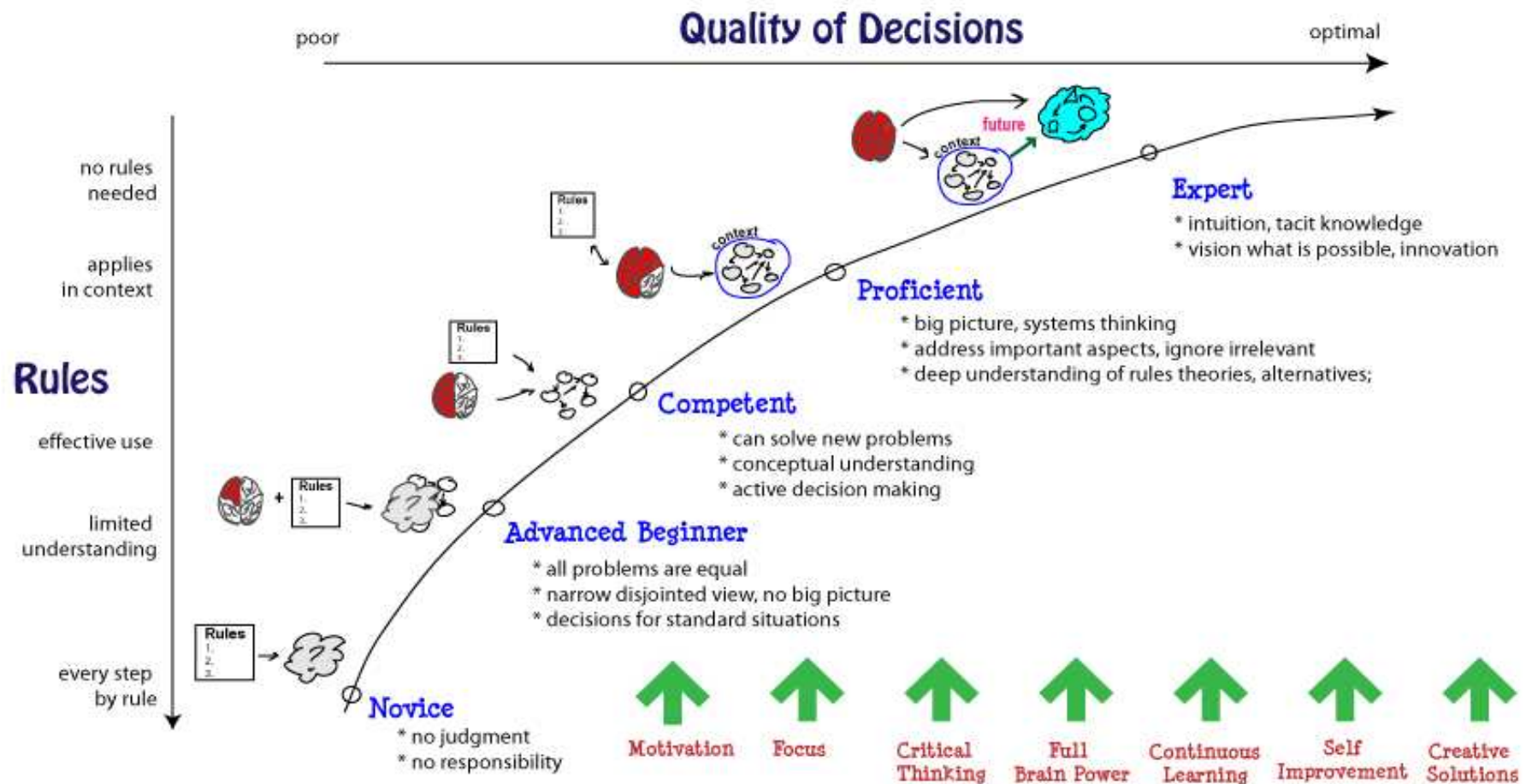


Transition to Zone 4 involves adoption and practice of critical thinking patterns that lead to efficient problem solving routines (PDCA) and Kaizen activities that produce results...

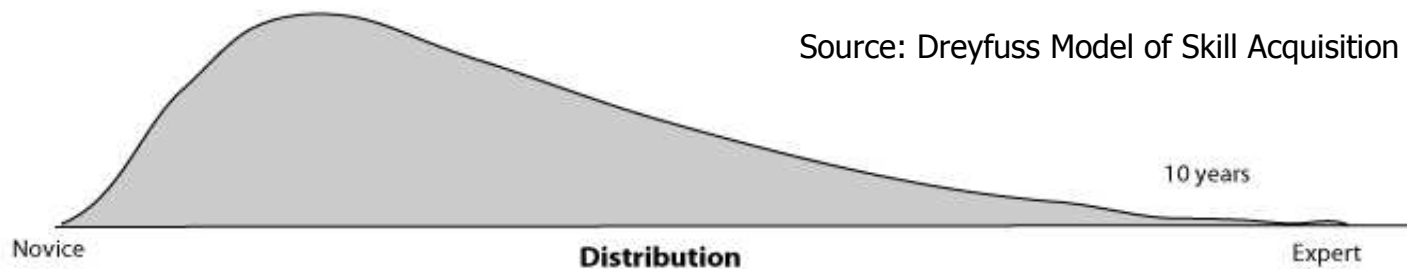
Improvement through developing people...

Superior Results

Genesis of The Expert

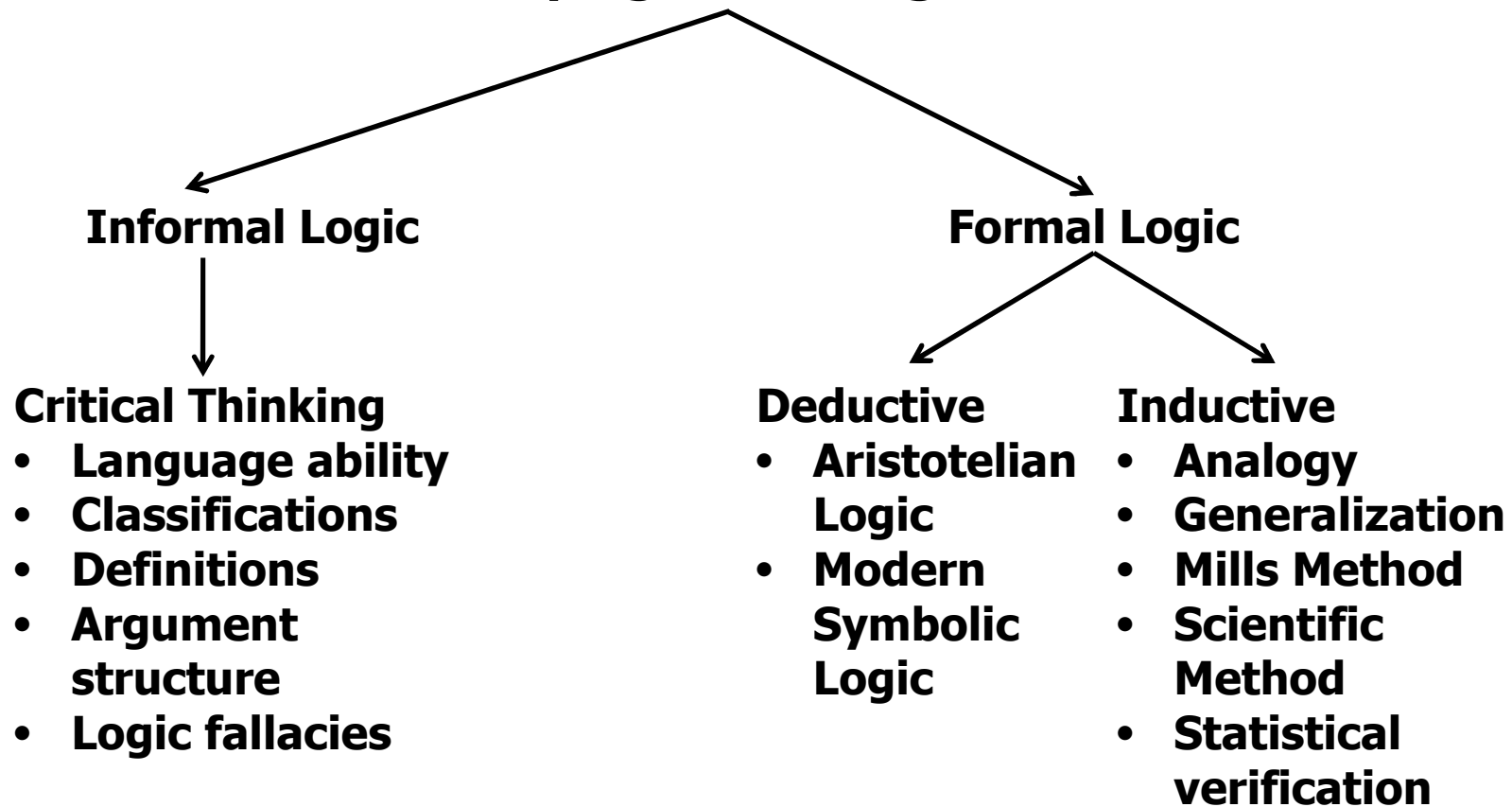


Source: Dreyfuss Model of Skill Acquisition



Reasoning Skills Take Practice

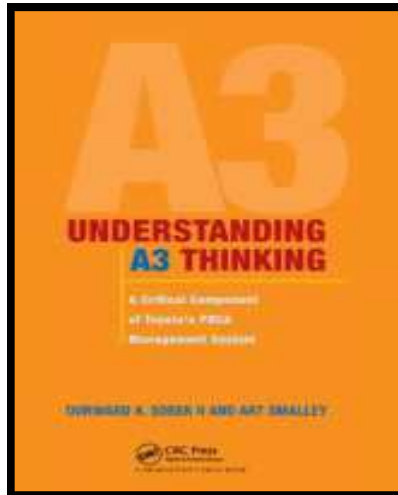
Developing Reasoning Skills



**Problem Solving, Kaizen,
Continuous Improvement**



Three Pillars of A3 Thinking

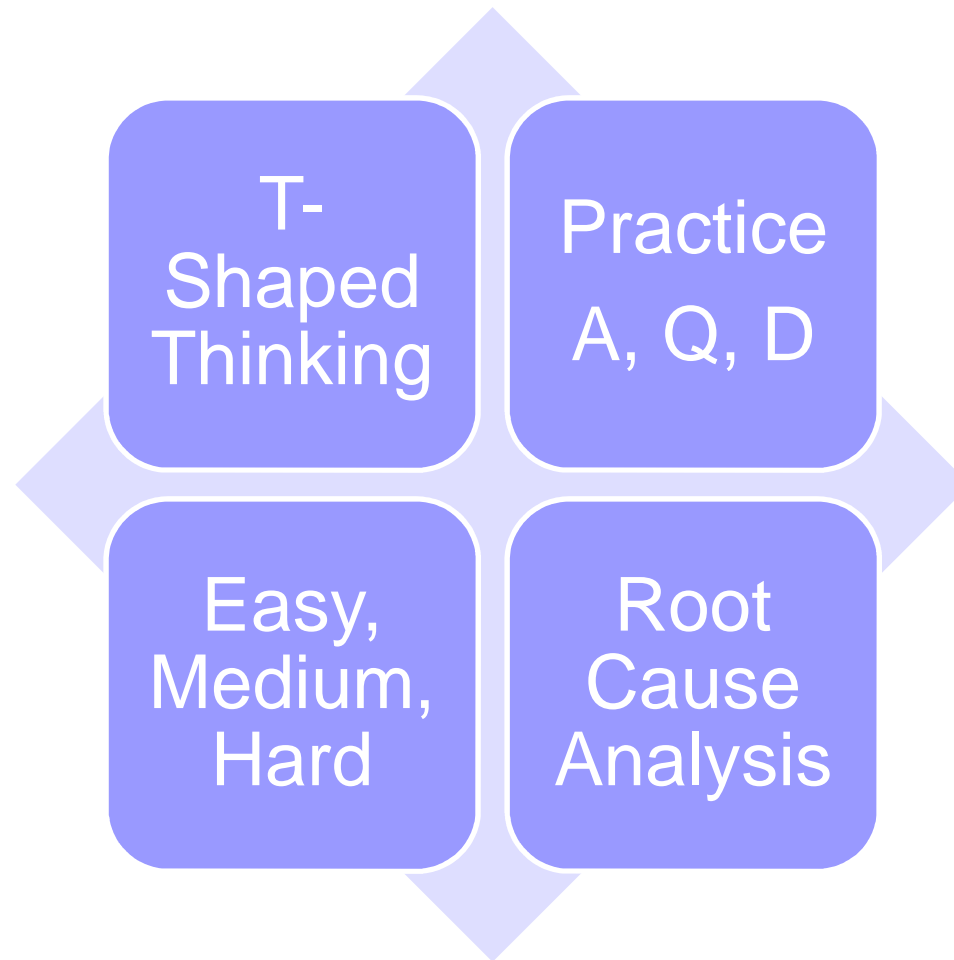


1. Problem Solving (PDCA)

2. Communication

3. Mentoring

Problem Solving Advice / Homework



1) T-Shaped Thinking Patterns

- Horizontal flow (Value Stream) versus Vertical depth (5 Why)
 - Material & Information flow diagrams (value streams) usually highlight problems of “time” or “delay”
 - Process problems often require extensive drill down and involve quality or safety at the point of use...



2) Practice the A, Q, D, Test

- Analytical
- Quantitative
- Detailed

3) Easy, Medium, & Hard Cases

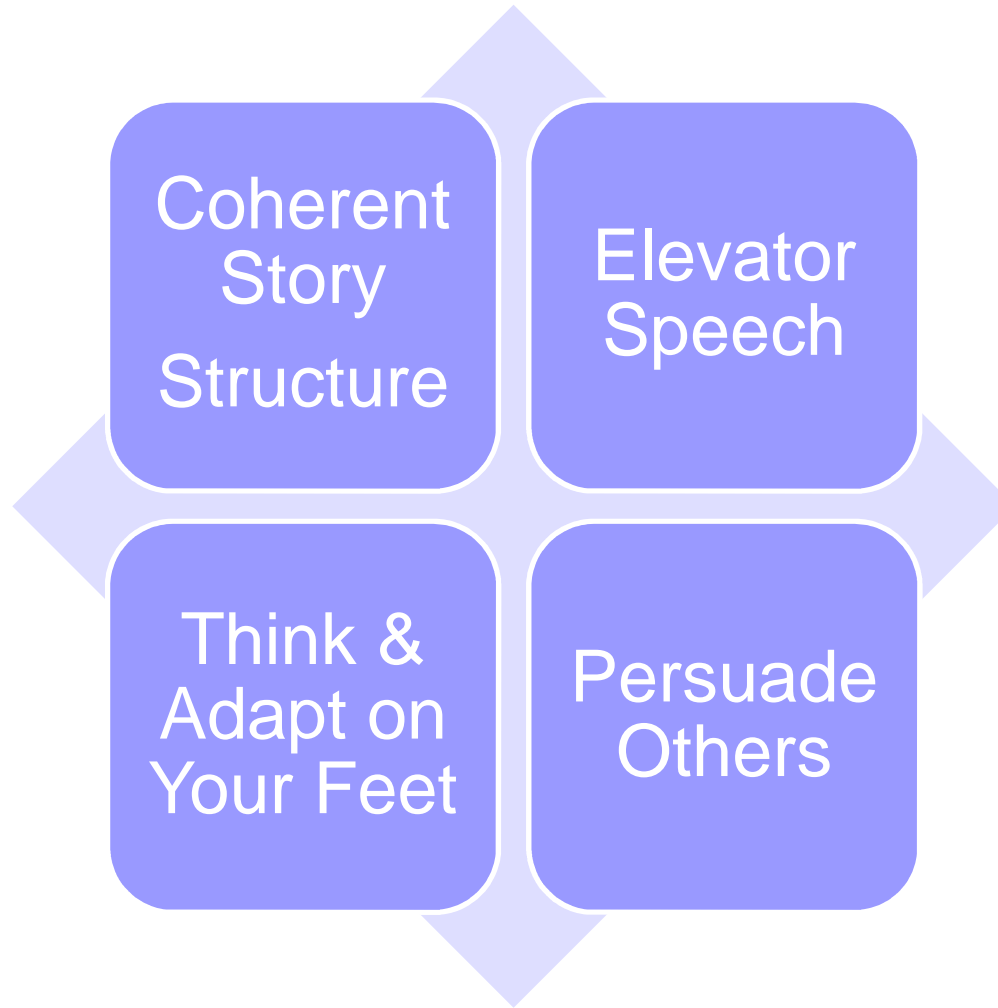
- Easy Cases – “Just Do It!”
- Medium Cases – Structured Thinking
- Hard Cases – Persistence & Careful Analysis



4) Root Cause Analysis

- Cause and Effect
- Logic Tests
- 5 Why Test
- Statistical Validation
- Repeatable (result and causal insight)

Communication Advice / Homework





5) Coherent Story Structure

- Background
- Problem Definition
- Goal / Target State
- Root Cause Analysis
- Countermeasures
- Check Method
- Follow Up

6) Elevator Speech

- 3-5 Minute Update
 - Practice brevity in delivery. Twitter?
 - Test your message
 - Avoid unnecessary meetings
 - Obtain advice quickly
 - Confirm next steps
 - Etc.



7) Think and Adjust on Your Feet

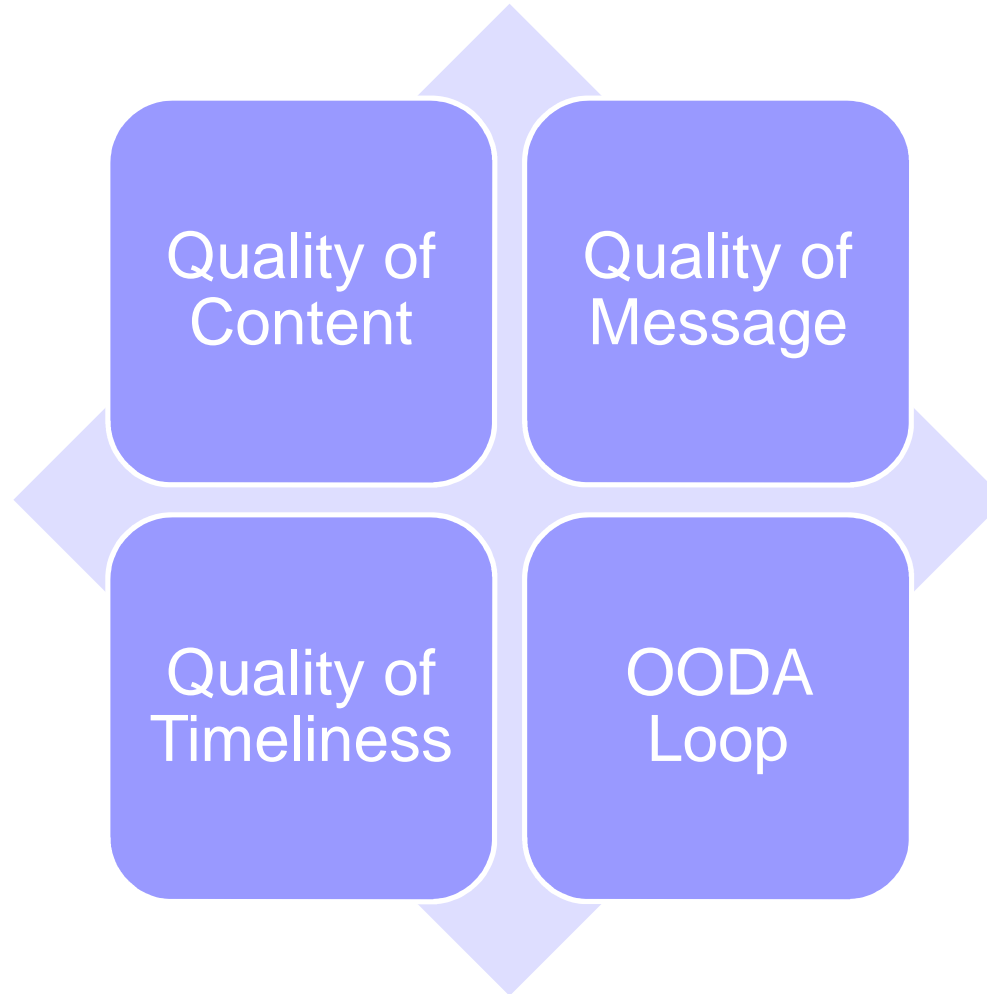
- Practice situational responses
 - Listen to your audience
 - Check assumptions
 - Confirm what is unclear & why
 - Logically outline arguments
 - Refine your position
 - Review facts, data points, etc.



8) Persuade Others

- Was your story compelling?
 - If they won't follow you then why?
 - If they will follow you why?

Mentoring Advice / Homework



9) Quality of Content

- Mentally grade the quality of the report.
 - Did it meet your expectation? If not why not?
 - Even if it did what can be improved?
 - Does this really get to a cause and effect insight?
 - Does this really promote an effective countermeasure?
 - Did or will we obtain a positive result?
 - You have to care in order to give feedback.

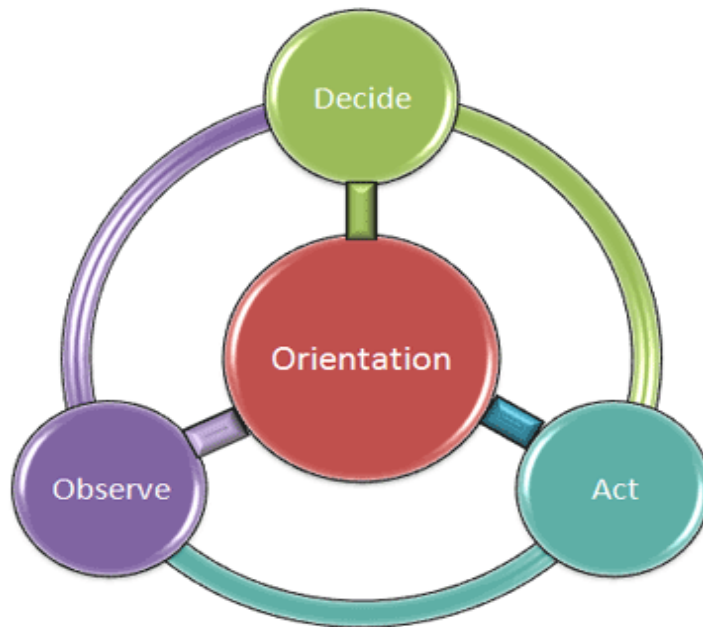
10) Quality of Communication

- Was the communication clear? If not why not?
 - Did this meet the A, Q, D test?
 - Did this encompass the entire 5W 1H spectrum?
 - Was the story and logic sound?
 - Other

11) Quality of Timeliness

- How is the timing of the content?
 - What it delivered in an appropriate time frame?
 - Was the work done in a timely fashion?
 - Is the urgency proper for the situation?

12) OODA Loop



Similar to the PDCA loop only more fluid and dynamic in nature.

This framework often fits better in mentoring situation where you are making observations and decisions quite rapidly.

Common Pitfalls in A3 Reports

1. Background is not clear to an external audience
2. Problem statement is too vague
3. Scope is too large (for first efforts in particular)
4. The goal or target condition is an action item in disguise
5. Problem analysis does not drill down sufficiently
6. Countermeasures do not address root causes
7. Check method & follow up methodology lacks rigor
8. Interaction between problem solver, manager, and mentor does not properly function
9. A3 review cycle is not part of normal work
10. Remember this is about improvement through developing people



Summary Comments

- Going from Zone 1 to Zone 4 requires problem solving execution not just actions
- PDCA style problem solving is a skill
- A3 Thinking promotes problem solving, communication, & mentoring
- If you are not getting the results you desire then by definition you have a problem you have to solve...

Contact Info

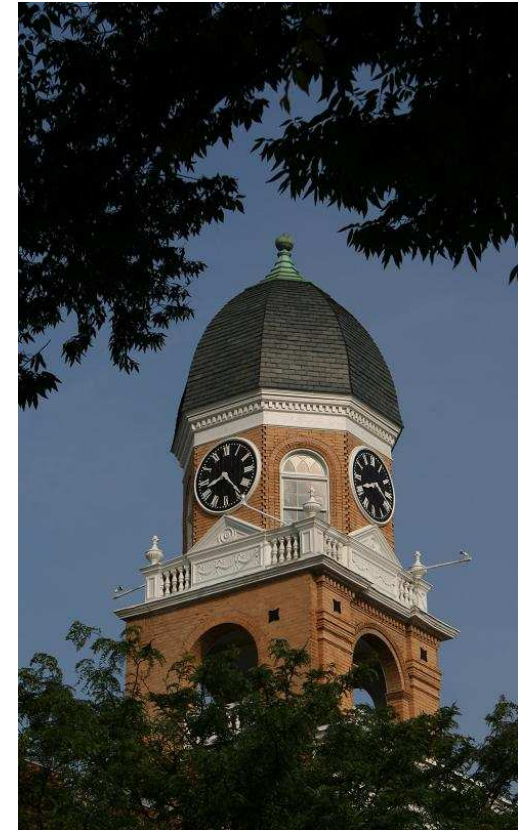
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www.ArtofLean.com or
www.OPSGroupinc.com

Operational Performance Solutions, Inc.
66 East Main Street, Suite 300K
Westminster, MD 21157

(410) 871-0995

info@OPSGroupinc.com





Question and Answer