Learning to Lead at Toyota

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Facilitator's Discussion Guide

This guide is designed to provide some structure and talking points for a group studying *Learning to Lead at Toyota*.

The participants should already have individually studied the article with the accompanying Article Study Guide. (They can also do it in small work groups, but the work should be off-line.)

Once the individual study is complete, this guide should help you reinforce the key points in a group discussion of the article.

Text that is copied from the participant's Article Study Guide is shown in ***blue*** in this Facilitator's Guide.

Pre-Reading

Before you begin, consider this process in a product packaging operation:

> Every 15-20 minutes a pallet of boxed product is delivered from the packaging line. The Team Member pulls individual boxes of product from a pallet, one by one. He runs them over a scanner that verifies he has the correct product for that job, then places them in a carton.
>
> Overall, the Team Member's work pace is fast enough to meet the current production requirements. Two or three times a minute, however, the scanner's computer faults and he must stop and interact with the keyboard to clear the error and restart the program. The Team Member is clearly irritated when this happens.[1]

1. *In your organization, as it operates right now,* if you were a Manager, or above, what would be your role in addressing this problem?

2. If you were running a "kaizen event" in this area, what would be your role in addressing this problem?

The Pre-Reading section is designed to help the participant anchor the *current situation* in their individual organization. This is done to heighten the contrast later on.

[1] This was an actual problem from a packaging line in a real company.

Introduction

The first three paragraphs of the article cover background about previous research on Toyota's culture. (*Decoding the DNA of the Toyota Production System*)

3. What does Spear say is Toyota's purpose for "standardization?"
4. Why do you think Spear prefers the word "explicit specification" over "standardization?"

[Look in paragraph 3 which begins *"As we explained in the article…"*

the sentence which begins *"Rather, standardization – or more precisely…"*]

The key points in *Decoding the DNA of the Toyota Production System* are that all tasks and processes are deliberately designed to reveal "problems" as any departure, for any reason, from the expected.

In order to do this, *what is expected* must *first* be explicitly defined. Only in this way is it then possible to compare *actual* events and results against *expected* ones and see where the expectations fell short of predicting reality.

In question 4: Spear dislikes the word "standard" because in common industrial usage, the word carries a lot of baggage as something which is rigid, imposed from above, and often completely disconnected from what is actually done. "The standard" is a document which is not read, nor followed. "Standard hours" are the time the accountants credit for the work, but are usually divorced from how long the work actually takes.

5. What does "standardization" mean in your organization today? How might "specification" be different?

Question 5 is designed to highlight this point – that "standard" probably means something other than what Spear is describing in his research.

The Program

The main character, Bob Dallis has several advanced degrees, and a successful history of increasing responsibility in a U.S. auto manufacturer, including managing an engine plant. He has learned TPS by applying it in his jobs.

Mike Takahashi is a very senior member of the Toyota Supplier Support Center. He has been assigned to help Bob Dallis learn his role as a Toyota senior manager.

Before you continue reading:
6. Based on his background, Bob Dallis obviously knows what he is doing. What do you believe are the learning objectives of this training?

This background information and Question 6 are designed, again, to get the reader to commit

his initial thoughts to paper in order to reinforce the teaching point later.

Back to Basics

Takahashi starts Dallis off on the shop floor of a Toyota engine plant, working with a 19 member team. For the first six weeks Dallis was to help the team improve ergonomics, productivity and operational availability.

7. How was Dallis directed to go about this? List the steps:

["…For the first six weeks…"]

- Observe and document the work as it is done.
- Identify problems.
- Make changes to solve the problems he had observed.
- Evaluate the effects.

8. What did Takahashi have Dallis do on Mondays?

[Starting with "*Dallis was not left to his own devices…"*]

Explain how he thought the assembly process worked;
what he thought the problems were;
what changes he proposed; and the expected impact of those changes.

Key Point: Dallis was being directed to learn about the process by directly observing it, and to see the problems for himself.

He was being directed to make a plan which consisted of a proposed action and an expected result.

9. What did they do on Fridays?

On Friday they compared Monday's plan and expectations with what actually happened.

[In the paragraph beginning *"Dallis and Takahashi spent Dallis's sixth week…*

The sentence that begins *"Unfortunately, the changes had also reduced…"*

As they studied the process after 5 weeks of changes, they found improvements in ergonomics and a significant improvement in productivity. *They also found that operational availability has dropped from 90% to 80%.*

10. Why?

The other changes pulled slack out of the work cycle. Stoppages that previously had no impact were now affecting the work.

11. As things are today: If operational availability of a machine dropped after a kaizen event, how would your plant's leaders respond? What would be done to fix it?

The purpose of this question is to contrast the approach used by Takahashi and Dallis with more traditional problem solving.

While organizations differ (some may respond "nothing") a traditional approach would focus first on collecting and classifying machine stoppage data over some period of time, and attempting to look for the major contributors to downtime.

12. What problems did Dallis discover as he observed the process?

[The paragraph beginning *"...But as Dallis observed the machines..."*]

Quite a few failures were caused by the way people interacted with the machines, rather than the machines themselves.

- A Team Member would accidentally trip a trigger switch before a jig was fully aligned, causing a fault.
- A pallet that rode up over a stop bumper.

13. Do you think traditional OEE data collection would have picked up these problems? Why or why not?

Most OEE data collection would miss this kind of problem. If they registered at all, these issues might register as stoppages or faults, or possibly even "operator error." Neither of these gets to the cause.

In addition, most OEE data collection is aggregated and analyzed after the fact. Without direct observation of these faults as they occurred, they would not picked up for what they were.

The Master Class

14. What has Takahashi concluded after observing Dallis work for 12 weeks in the engine plant?

- Good progress on observing the situation for himself.
- Good progress structuring countermeasures as experiments.
- Tries to do too much himself. Is not developing the people in the area to solve the problems.
- Too slow.

15. What was different about Takahashi's expectations for Dallis in Japan (vs. his expectations in the U.S. plant)?

- Faster pace of problem solving. (One every 22 minutes)
- Working with a single team member (Who spoke no English!)
- In semi-competition with Toyota Team Leaders in training.

16. How did Dallis accelerate his rate of improvements?

Rapid testing of ideas, even before they were implemented.
"Bolting instead of welding, taping instead of bolting, holding instead of taping."

He also had to do this to "explain" the concept to the Japanese-speaking Team Member.

17. What about Takahashi's approach was *the same* in Japan as it had been in the U.S. Engine plant?

Started out with simple issues – overburden, excessive motion, then increased the complexity of the problems in a controlled way, introducing machines.

18. What did Dallis learn about the culture around improvement?

Top leaders are intimately engaged in *how* Team Leaders and Group Leaders (supervisors) go about solving problems, not just whether the problems are solved.

Everyone, *at every level*, is expected, and developed, to structure work and improvements as predictive experiments - "What effect do you expect?" "What actually happened?"

Lessons Learned

19. How do they go about understanding a problem?

Contrast your answer to question 19 with:

- More traditional "data collection" ["*…This a very different approach from…*"]
- Your reply to questions 1 and 2.

"There is no substitute for direct observation."
"He was not asked to "figure out" why a machine had failed, as if he were a detective solving a crime, but to sit and wait until he could directly observe its failure."

He was not to be a detective, *but a witness*.

20. What does Spear mean by "Proposed changes should always be structured as experiments" ?

Paragraph 2 of "Lesson 2" which begins:

["*Of course, many people trying to improve…*"]

By defining the problem, the countermeasure, *and predicting the expected outcome* of the countermeasure, the problem solver is driven to gain more understanding when the actual results differ from what was expected.

21. How do "small incremental changes" drive deeper understanding than big system changes?

"Lesson 3"

The answer to this one has to be pulled out a bit. The key is that small changes allow the Team Members (and Dallis, in this case) to *practice the process improvement itself*. The goal is not only better understanding of the process, but continuous development of people's improvement skills. By making small changes every day, people, at all levels, are practicing all of the time, not just in special organized improvement events.

22. What did Dallis' past experience teach him about the leader's role in continuous improvement?

"Lesson 4"

In his previous roles (typical of most companies), his role was "leader as problem solver." As the leader he was expected to be the one with the answers.

23. How does Toyota's expectation of leaders differ? Contrast your answer here with how you answered Question 6.

The leader is expected to be the teacher, coach, mentor, facilitator for the *problem solving process* itself. It is the responsibility of the Team Members performing the process to understand the process and improve it. The leader is responsible to *ensure this occurs,* and develop people's capabilities.

The leader should always be pushing his subordinates to the next level of understanding. If there is a gap between what they should know and what they *do* know, *why is there a gap?*

Paragraph 2 of "Lesson 4"

24. Describe Takahashi's role in teaching Dallis.

Takahashi was demonstrating the leadership he was trying to teach. It is more in what he did not do – he did not suggest specific improvements, he only helped Dallis focus his attention in the right place to understand the true nature of the problem.

25. Compare this leadership expectation with your answers in the packaging case. (Questions 1 and 2) What is different:

- **About the role of leaders in your organization?**

The answer will obviously depend on your organization, but most organizations take the "leader as problem solver" rather than "leader as learning facilitator" approach.

This question should foster a discussion about the expectations of on your leaders and of your leaders.

- **About the role of kaizen event leaders in your organization?**

In organizations with professional kaizen event leaders they are, in most cases, are regarded the same as above. Their jobs may be a little different – perhaps to know the solution and facilitate the team to find the "right answer." But, relatively few organizations regard kaizen event leaders as fulfilling the role for Team Leaders and Supervisors in the way that Takahashi did for Dallis.

This discussion point can get into who should be coaching the leaders, and how to structure learning activities so that they get acquire the right skills and knowledge, in the right way, to carry them into everyday work.

Back to America

26. If Dallis had demonstrated his learning in Japan, why did Takahashi return him to the original operation in the USA?

The answer is in the first sentence of this section. Takahashi had added many variables, such as the work environment in Japan, to the equation. He now had to return to the original area to evaluate Dallis's progress under the original conditions.

Only by returning to the original environment can he evaluate if Dallis's approach is now different.

27. What was the task?

Dallis was to close the gap to the operational availability target. (90% to 95%)

28. Why did Dallis succeed this time, where previously he had fallen short of the goal?

Previously Dallis had taken the target as his own. In effect, by trying to fix the problem

himself, he had removed responsibility, and empowerment, from the team that worked in the area.

This time around he understood that the operational availability target was *not his goal.* Rather it was the *work team's goal.* His job was to assess the gap in their problem solving skills, and to develop and implement countermeasures to *that* gap, rather than assess the gap in machine performance and solve the problems.

His test was:
"If the team has adequate skills, they will be able to achieve their goal of 95% operational availability."

Overall Review

29. What were the learning objectives for Dallis?

The responsibilities of a leader are to the Team Members and the work teams.

At each level, the leaders look at targets and gaps.

They assess whether the teams are demonstrating the level of skill to close the gaps. Where they may be struggling, the leader works with the team to develop their problem solving skills to the point where *the team can succeed.*

30. Compare your answer above with your answer to question 6. Is there a difference? Why?

The answer to this will depend on your specific organization.

31. What gaps exist between the "ideal leader" described in this article and the way leaders are expected to act in your organization?

This should be a key point in your discussion as it *defines the gap* for your own organization.

Additional Discussion Points:

Everything here follows PDCA and the problem solving process.

The overall training program:
At the start, Takahashi knew only what was on Dallis's resume. His first step was to understand the current condition.

To do this he assigned Dallis to work with a very small team in an engine plant. He initially focused only on manual work, nothing complex.

In this way Takahashi controlled most of the variables.

- Dallis had managed an engine plant before. Using an engine plant eliminated a variable of "unfamiliar process."
- Focusing on a very small team's work removed system complexities, and surfaced Dallis's fundamental approach to problem solving.
- Focusing entirely on manual work, at first, eliminated the distraction of machine problems from the equation.

Takahashi added additional variables slowly, both to advance Dallis's learning, but also to ensure that he (Takahashi) could predict, and check, how Dallis was approaching the situation. At each step, Takahashi was proposing, and testing, a countermeasure – in this case a training scenario. But he did so only when he was satisfied he was not leaving unknowns behind him.

Takahashi assessed Dallis's strengths and gaps, and constructed the situation in Japan as a countermeasure to those gaps. (The speed of improvements, and taking on the problem for himself vs. coaching the team through success.)

He, again, started only on manual work, and only then progressed to machine and system issues.

He then demonstrated that the approach was embedded throughout the culture at all levels, it was not something that only senior people did. And in doing this, he reinforced the principle that the more senior the leader, the more his job involved coaching and teaching others to push beyond their own limitations.

But even with success here, Takahashi was not satisfied. He took Dallis back to the same plant he started in. He once again eliminated all of the variables he had introduced during the training. In essence, Takahashi was applying a countermeasure (Dallis's new skills) to the original problem to test that it was effective. Only when Dallis demonstrated, through performance and actions, that he understood the role of a leader, did Takashi "close out the A3."

As a sidebar, those of us who have worked with Shingijutsu for many years know that they continue to tell us the same things until they see we have *done it.* Only then do they move to the next step. Unfortunately many people exposed to this are left with only limited understanding of the overall system, and think that one step beyond what they have done is all there is. In reality, they simply have not *done* one step beyond, and so they keep hearing the same things from the consultants.

Some additional information not included in the article: At an even higher level, this entire program was a structured test. Toyota had never brought anyone this senior from outside before. They understood that assimilating the culture usually took many years. That was a problem, as it is a departure from the "ideal" of immediate availability. The target was to develop a person far more quickly. They devised countermeasures, and this article describes what they tried.

Compare this with your company's process of brining in a new executive leader. What you do to ensure the new leader understands how your company wants him to lead?