**The Structure and Scientific Thinking of Toyota Kata with Mike Rother | 087**

Welcome to Lean Leadership for Ops Managers, the podcast for leaders in Ops Management who want to spark improvement, foster engagement, and boost problem solving - AND still get their day job done. Here's your host, Leadership Trainer, Lean Enthusiast, and Spy Thriller Junkie, Jamie V. Parker.

I'm so excited today to bring you a conversation that I had in person at Lean Frontiers Kata Con 8 in Jekyll Island. Mike Rother is the author of Toyota Kata. And we are chatting today about a couple of different topics. But I want you to also keep listening after the our conversation to hear how I integrate some of the Kata foundations with clients, even if they've never heard of it.

Now, Mike and I have read each other's stuff. He listened to the podcast, I've read the book. I've I've practiced with Kata Girl Geeks. But this was the first time we were able to meet in person, which of course was lovely. It's really inspiring to see 100 people gather together at  Kata Con to build on this work that Mike did. I'm here with Mike Rother. We are at Kata Con 8 today and have been for the last two days. Mike, welcome.

**Mike:** [00:01:23] Hi, Jamie. Good to be here. Good to see you.

**Jamie:** [00:01:25] We are at Kata Con, so let's talk about Kata for just a little bit for those listeners that are listening and they're, you know, maybe a little of curious, they've heard about it, maybe explored a little bit, but don't know as much about it. What would you say Kata is all about?

**Mike:** [00:01:39] Yeah, well, if you want a quick explanation, I'm sure it's really kind of two things. One is it's practice. It's kinda like from the martial arts. I'm not active in the martial arts myself, but it's the idea of deliberate practice to develop new habits. And the other side of the coin with Toyota Kata, my subject is a kind of a practical, everyday scientific thinking. So it's deliberate practice to develop a kind of scientific thinking that you can use in your everyday life and your work life to achieve difficult goals, overcome obstacles.

**Jamie:** [00:02:12] Yeah, I love it. And I talked a little bit about my experience. It is about some practice and I was surprised at how much I thought I was a scientific thinker and learned maybe I was jumping to conclusions when I started my learning journey with Kata.

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**Mike:** [00:02:25] Yeah, I think we all jump to conclusions. I think that's the way we're wired. You know, a lot of neuroscientists talk about why we do that. It's safer, you know, better safe than sorry neural mechanisms that we have. The funny thing is, I think even scientists jump to conclusions, but a difference may be that they catch themselves and they realize they're doing it and then they correct. Whereas I think a lot of us in everyday life who haven't practiced a little bit of scientific thinking will jump to conclusions and think that's the truth.

**Jamie:** [00:02:53] Mm yes, for sure. All right. Well, we've had quite a few speakers here in the last two days doing some really great work out there. What's really stood out to you as you've listened to folks talk about their experiences in the work that they're doing?

**Mike:** [00:03:07] Well, let's see. The Toyota Kata book came out in 2009. And what really jumps out at you is how many people are doing it worldwide or practicing it. But even more than that is that it has taken on different shadings. So different people present what they're doing with it and how they're evolving the practice and their organization in their team or in their home life even. So that was what we were hoping to see.

It's not a structured thing forever. You might start with structured practice, but then you build on the patterns. You learn the scientific thinking patterns in ways that suit your situation and that seems to be what's happening. So an event like this is really nice because you can see all the different ways it's going.

**Jamie:** [00:03:50] Yeah. So it's interesting you say, you know, we might start really structured and as we learn and build some of those habits, some of that structure might might go away. But the structure at the beginning is pretty important.

**Mike:** [00:04:02] I think it is for a lot of things. And the funny thing is, when you're talking about sports and music, for example, it's just natural that you start with structured practice at the beginning, play your scales or practice a particular kick or swing or something like that, and nobody thinks you're going to do that forever.

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You might go back to it periodically to brush up, you know, but somehow in the business world, there's a greater reluctance to start with structured practice and actually two errors that we make.

One of them is not being willing to start with a little bit of structured practice to want to be the expert right away. We know that doesn't work and the other area is to stick with structured practice forever, to see it like a tool or a method with kata or starter kata as we like to call them. What's important is not the starter cadre themselves. The practice routines you might begin with, but the patterns of thinking and acting that practicing those routines leaves behind.

**Jamie:** [00:04:57] Yeah, you know, the structure is what I think I had the most resistance to. Sure. Right. It's not alone. Especially I. My experience has been through the Kata girl geeks and Kata girl geeks has expectations that you follow the starter Kata exactly that you have daily coaching cycles you know five days a week at the beginning.

Yeah. Yeah. It was your, you know, kind of practicing and learning. So I want to be a learner. I was like, Oh my gosh, I can't commit to five a week. Are you every single day? Are you kidding me? Right. And I had to get myself over that just to be able to say, okay, yes, I'm committing to it now, of course, eight weeks later and then a second, eight weeks later, like, oh yeah, I really needed that daily coaching cycle. I really needed the daily next step, right.

**Mike:** [00:05:39] Yeah, I'd like to say, I mean, if you're only practicing the new skill once or twice a week and the rest of the week are practicing the old skill, you're practicing the old skill. That's right. So changing habits is hard, you know, and your talk today was about emotions, which I thought was a really good talk. And emotions play a role.

They neuroscientists think that emotions help the brain decide what to keep and what to throw out, what to imprint. Right. And at the beginning, anything new you practice feels awkward. It just does because your brain is aligned to the existing habit, not the new habit. Right? It's actually a physical thing.

So your coach is kind of there to help you get through that early phase where it doesn't feel right. Just let me go back to the way I did it before. This feels awkward, right? But for those who make it through and I

don't think everybody does and I don't think everybody needs to, but for those who make it through to the new skill, they can't imagine going back. Right. Or they're they're very happy with what they've achieved. They've developed a new skill. But you do have to get through that early phase.

**Jamie:** [00:06:43] Yes, it can be painful a little bit at first. But I will tell you, I didn't I only had 20 minutes, so I didn't get to tell my whole story. But it definitely got much easier the more I practice and the more, you know, repetition and opportunities I had to go through the routines.

**Mike:** [00:06:58] So the role of the coach in that initial practice is pretty important because we tend to practice our existing habits, not the new ones, and we don't even realize we're doing it right. It's just much easier, much more natural for us to practice the way we're accustomed to that old habit. So the coach does some correcting at the beginning, and I think that was hard for me. So you've basically got you're trying to learn something new. It feels awkward, you feel stupid. You really just want to be really good at this. Look, that guy can jump his BMX bike really? Well, I want to. I want to do that today. Yeah. And then your coach is giving you feedback while you're frustrated, telling you what you're doing wrong. You know, it's it's a tough time.

**Jamie:** [00:07:39] Yes.

**Mike:** [00:07:39] So you need a good coach.

**Jamie:** [00:07:40] Who.

**Mike:** [00:07:41] Who somehow delivers the feedback in a you know, and another thing we did in the early days and I think this is an issue with consulting in that you would only visit the client every month or so. Right. And you give a lot of feedback.

**Jamie:** [00:07:57] Mm hmm.

**Mike:** [00:07:58] But in practicing new skills, just a tiny bit of feedback. It's more like, okay, I see five things that this person needs to work on, but don't tell them all that. Yes. What's the one thing I want you

to practice next? And then tomorrow we'll see further. So we found consultants using some tricks to be able to do that. For example, they would go around and coach three or four or five times a day and people would run their experiments in between visits. So they would get the benefit of three or four or five coaching cycles in a day. And each time you just give a little bit of feedback, a little correction, practice that until I see you next.

**Jamie:** [00:08:36] Yes, I know. Looking back, I know that my coaches were doing that because, you know, looking back and be like, oh, yeah, all of these mistakes I was making. But they were just kind of doing that one thing. What's the one thing right now? And so I think the skill of the coach, which partly is, you know, why I think it's so important that you are a learner like we don't know. Sometimes we think we, you know, we go to a court in the classroom workshop. We're like, all right, I'm going to be the coach and I'm going to be the second coach. But being a learner first.

**Mike:** [00:09:01] Yeah, and a good coach is also pay attention to you having a little success early on. You know, I think learners, any new skill, whether it's golf or a musical instrument or a scientific thinking, tend to bite off more than they can chew at the beginning. Right. And it's really up to the coach to slow them down, to make sure that after a few days of practice, the learner goes, wow, I'm starting to get this.

**Jamie:** [00:09:26] Yeah.

**Mike:** [00:09:27] So and that takes us back to emotions and the brain using emotions to tell it what to imprint. Now you have a positive emotion associated with it. I think it's the first two weeks that are the toughest for me.

**Jamie:** [00:09:38] It was getting through that current condition.

**Mike:** [00:09:40] Yeah, okay. I remember you talking about that.

**Jamie:** [00:09:42] Can we get through this current condition? Right. Which was about two weeks.

**Mike:** [00:09:46] Wow, that's a long one. Yeah.

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**Jamie:** [00:09:47] Yeah. All right. So here's the other thing I wanted to ask you about. So I come from a family of teachers. My mom's a teacher. My brother's a teacher. My sister in law is a teacher. My grandmother and grandfather were both teachers. And you also have really done some work with Kata in the classroom. But but some stuff that you shared today about activities that teachers are doing that are missing a component and how you've helped to fill in that gap. Can you tell us about that?

**Mike:** [00:10:11] Well, we're trying. But number one, I don't want to be critical of teachers. I think they're doing amazing work. So there are there's an emphasis on STEM skills. Right. And so there are a lot of classroom exercises or activities that are being done. They're like little projects to build something and so forth. The danger is when those projects are we're going to build a pasta tower and see who makes the tallest one, right?

The danger is if you don't iterate, if you just have one or two rounds and that's it, the message the students end up getting is, well, that team was smarter. They built the tallest tower, they win, right? And if you iterate, it becomes more of a learning process and each team ends up competing against themselves, you know?

Well, we started out we could only make a ten inch tower, but by the time we got done, we got it three feet high or something like that. So. One thing that may be lacking from these activities that are done in the classroom is a reflection and an iteration of reflection and adjustment after each round. So you'd have to get like at least three rounds in per class period. So the rounds should be short. Mm hmm. Yeah.

**Mike:** [00:11:25] Quite naturally, the students tend to focus on the activity they're involved in. So if you're trying to pick up cups, two people are holding strings. You may have seen that. Yeah, it's kind of cool picking up solo cups as a pair, using only strings or building a pasta tower or whatever it is you're doing. If you were to ask the student at the end of the day, So what'd you do in class today? Oh, we picked up cups with strings or we built a pasta tower. But those are not skills that are going to help them in their life. Right. The skill is if you approach these projects scientifically and practice a scientific pattern, a simple one, and do that again and again, that's a meta skill that the students can take into their lives and apply anywhere.

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So what we came up with was a simplified version of Toyota Kata that a teacher can simply overlay onto any exercise, any activity that they're already doing. So let's say they do ten activities in a year. Each one has three iterations. But within those activities are practicing this simple scientific pattern they're getting the students are getting 30 reps in a scientific pattern. They'll start to see that that's what they're practicing.

**Jamie:** [00:12:34] Yes.

**Mike:** [00:12:35] And, you know, my dream is that the students are a little bit older and they're facing something and they go, oh, why don't we approach this problem the way we did in Mrs. Wilson's class? And that's that's the win when they apply the scientific thinking pattern to new problems and goals.

**Jamie:** [00:12:54] Yeah. What I love about that, too, is that you're not saying it's not like new activities that teachers need to go learn. It's hey, do the activities that you already know and work really well. And here's this this overlay to make it easier and more accessible.

**Mike:** [00:13:06] Thanks for mentioning that. That's a very good point. So it makes it much easier for the teacher. No new activity is needed. This is just a little bit of something you could add to your existing activities. We call it a quickstart and it is at that website. Maybe you'll link to it in the podcast notes.

**Jamie:** [00:13:20] Yes, we will. So speaking of that, as we wrap up, where should people go to learn more?

**Mike:** [00:13:25] Well, we have two websites. There's one, the Toyota Kata website. It's got a funny URL because it's at the University of Michigan. That's the way our servers work. So if you're in a business world, go to the Toyota Kata website, just Google that. And if you're in the education world, go to Katatogrow.com Or just Google Kata in the classroom and you'll find it there. And both of those sites will take you into many places. And I should add, I'm a researcher, so there's nothing for sale on either one of those sites. They just lead to resources that people can use as they like.

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**Jamie:** [00:14:00] Fantastic. And we will link to both of those at our show notes process plus results dot com forward slash podcast. Mike, thanks for joining.

**Mike:** [00:14:07] Thanks, Jamie. It's nice to see you here in Sunny Jekyll Island.

**Jamie:** [00:14:13] So good to hear directly from Mike. You heard him talk about deliberate practice and about scientific thinking. Remember from last week? That's what I said, I think are really those two foundational pieces of Toyota. Really. That's that's what it's all about, deliberate practice and scientific thinking. And I have to tell you, since I come from a family of teachers, I love how Mike creates resources for teachers.

You know, first we cut in the classroom and now with these additional reflection resources that teachers can overlay onto the STEM activities and other activities they're already doing to give students more practice rounds of the scientific thinking, particularly because sometimes I think we think about scientific thinking as needing to be a science experiment. And that's not what we're talking about, right?

We're just talking about the the thinking behind that. And that's every day scientific thinking. Now, Mike and I also talked about the structure and I shared how I had to do a little bit of my own work to really be ready to learn Kata. Like I wasn't up for it at first. Daily Cycles. Are you kidding me? Now, it has been a fantastic experience. I'm so glad that I did it. But this whole starter Kata and the structure is really interesting because when you think about it, this rigid structure, the specific routines of Toyota Kata, it's for us, right? It's for us who are learning it.

**Jamie:** [00:15:43] I know at Kata Con, when Katie Anderson was talking and she was talking, she was doing her her keynote and she was like, you know, is that how Yoshino would not know what you were talking about if you asked him about Toyota Kata or if you asked him about a storyboard? Like he wouldn't know what the five questions were because Toyota Kata is not like, hey, these are the like specific things that are being done there that's already ingrained in their culture and the routines that they're doing right. Learning is that differentiator.

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What this is, these routines are for us. For those of us who don't yet have individual or organizational scientific thinking built in, how do we what are the routines, the deliberate practice that we need to do to learn and build that habit and that capability.

So so I thought it was really interesting to hear from him how he thinks about the structure and the specific routines of the starter kata and you know how important they are as we're learning, but recognizing also that there's an there is a point at which you start to shift that.

I bring this up because I will like my own perspective when I first learned it's like this is over the top, right? This is over the top, rigid. I remember when I went to the first my first workshop, like, I loved it.

**Jamie:** [00:17:03] It was so great. But turning that into actually making something happen at an organizational level was really hard and it felt like there were a lot of rules to it. And I know when I was doing the starter Kata with a girl geeks, I'm like, There's a lot of rules to this, right? And because of that, I know that there are organizations out there, there are operations executives out there right now who maybe are not ready to maybe they don't want to, or maybe they just shouldn't go down the formal Kata approach organizationally right now. But that doesn't mean that there isn't value here.

You know, when I work with clients, I incorporate some of the foundational elements they talked about last week into the work I do with them. Even if we never use the word Kata and we never have a storyboard at all. And so the first way is, if you remember from last week, the last episode I talked about that image about, you know, hey, on the left hand, it's here's where we are on the right hand, here's where we want to be. You have this oval in the middle and there's all the dots that are the obstacles standing in the way and how that really shifts when we like the this Kata idea is we recognize that we're revealing the path as we go.

**Jamie:** [00:18:23] We don't try and chart the whole path at once. And so that is one of the mindset shifts that I really helped to work on with my clients is to help them think instead of thinking, what can we improve? We think, what should we improve? What do we need to improve? Instead of thinking, what problem can we solve? We think, What problem should we solve? What problem do we need to solve?

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What problem must we solve to achieve this? Instead of thinking, what obstacle can we address? What obstacle can we remove? We think What obstacle should we address? What obstacle must we remove?

So this is one of the ways that I take the, the thinking behind at least. And again, this is my perspective, right? I'm just sharing my own opinions and perspectives. But what I think was just one of the biggest learning takeaways for me with Kata and start to help get that benefit for clients even if we don't practice formal Kata. Right.

So that's the first thing is I'm helping clients to get more targeted in how they integrate improvement thinking into their work. Without a storyboard, right? We're just shifting our mindset here. We're shifting our approach. We're shifting the lens at which we see things. The second thing that I do is I focus on integrating PDCA cycles into the routines that already exist so that we can get better planned experiments or better planned actions and reflection so that we can get greater iteration.

**Jamie:** [00:20:01] So when you think about a PDCA record, I will put a file on our show notes process plus results dot com slash podcasts that you can download for PDCA record. You know, up at the top there's the focus process, or you might put a problem statement or the obstacle or the root cause you're working on, or what am I trying to learn? So there's a specific way you do this in the starter Kata, but for clients it might not be a focus process.

They might put the root cause that they're working on addressing, or they might put the question of What am I trying to learn? And then you have your PDCA record, which is What is your next step? What do you expect to happen from taking that step? In the middle. When can we go and see what happened? This is your accountability. I'm putting a date and a time in putting my date in. Here's when I will have this done by what actually happened compared to what you expected. What did you learn? That's all across the one line. And then we go, Based on what you learned, we go the next step or the next line. What is your next step? And this is that many kind of like mini or micro PDCA cycle.

**Jamie:** [00:21:10] So often the clients I work with, they think about PDCA on a big scale, like, like a phase, like plan. Do, check, act. Like almost like a three or eight step, right? Like it's all these steps. And what we're doing is we're taking these into these little micro cycles. And so this is the foundation of the

scientific thinking. You can take nothing else from Kata and just take the idea of using PDCA cycles and a PDCA record and change your organization. That's it.

If you just do that now, yes, you can you can have a bigger impact by doing the whole thing. But for organizations who maybe are not ready to go tackle the whole thing, just pulling this in. So think about whatever maybe you're using eight step problem solving. Well, when you're at this countermeasure phases, think about using a PDCA record to experiment toward countermeasures, not just making an action plan of all the things that need to get done, all the things that need to be implemented. Air quotes.

When you're trying to do standardization, use the PDCA records to sustain and share and help you manage through change management. When you're writing your problem statement, when you're investigating your current state, I have a client with their six six, phase Structured Problem Solving Phase two is point A or Phase Four's root cause analysis.

**Jamie:** [00:22:34] In both of those phases, they can use these PDCA cycles to have better, better iterative learning and flex their scientific thinking muscle. Because when you do a PDCA cycle, you are predicting what you expect to happen, right? You're picking a next step and you're making a prediction, you're having a hypothesis. You are planning not just what you're going to do, but why you're going to do it. What you think the cause and effect relationship will be between I take this step because I take this step. Therefore this effect is expected to happen. And then the reflection side that Mike just talked about, how important reflection is, why it's important that that's missing in some of the STEM activities for kids.

And so we need to overlay reflection onto it. And so now you get practice at both, not just going out and taking action, not just going out and trying a bunch of things, but getting these practice. And it doesn't just have to be in structured problem solving.

This can be put into Gemba walks, this can be put into your daily startup meetings, this can be put into a leader standard work daily reflection process. This can be put really anywhere, any of the routines that already exist. If you have followed me for any length of time, you know that I talk about integrating lean thinking and improvement thinking into your everyday work, right? That's we don't implement lean.

**Jamie:** [00:24:03] It's not another thing. We tack on to it. We integrate the thinking behind it into what we're already doing so that we get better. And so this is how I will often take some of these foundational elements and then work work them into the routines and the activities that already exist. So for the organizations, you don't have to do something else. You don't have to learn a whole new methodology. You can get better by pulling in these pieces, just like the teacher example that Mike gave earlier. Teachers don't have to learn whole new activities to do. They can take the STEM activities they're already doing and layer in the reflection activity into it. And take it up to the next level.

That's the exact way that you can take this approach without having to start by going and learning all of the things and getting all the practice on the starting starter card. Now to do that, though, it is helpful if somebody has a deeper understanding so that whether that's you're bringing somebody in from outside or you have some individuals internally that are going through it and learning it in greater detail, because what I will say is that I would not have been able to as effectively integrate this thinking into clients work if I had not also done this work myself, if I had not gotten into the details, if I had not done the starter card, if I had not gotten all this coaching.

**Jamie:** [00:25:30] And so I'm saying all of this not to discourage you from exploring Starter Kata and really learning it as an individual, I would definitely encourage you to explore it if it's something that interests you to explore it through Kata schools, through Lean Frontiers, through Mike Rother's materials. If you identify as a woman, through Kata girl geeks right. There, there are resources out there and groups out there that can help you.

If you are leading an organization and you're like, Hey, I can't. I'm not ready to go put a whole new thing in my organization. I'm not ready to change from a three to Cada, right? I don't want to change, but I do want better results. I do want better problem solvers, I do want more scientific thinking. I do want integration of improvement thinking into our everyday work. Then you might want to kind of take the type of approach that I talked about today. All right. Great conversation today. So great to meet Mike and be able to talk with him face to face and tune in in the next episode as we talk Courage, Coaching and Kata with Susan Clancy. Until then.

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