



Ultralearning With Scott Young



Ultralearning author Scott Young discusses how you can learn quicker and retain information longer using nine important principles.



Scott Young

James: James Schramko here. Welcome back to SuperFastBusiness.com. This is Episode 689. And we'll be talking about learning, with Scott Young. Welcome, Scott.

Scott: Oh, it's great to be here.

James: Scott, you strike me as a really smart person.

Scott: Oh, thank you.

James: Because of the title of your book. We got introduced by [Nir Eyal](#), who was a recent guest on our show, a very popular episode. And he said, You got to talk to this guy, Scott, he can help you learn really well. He's got a book called *Ultralearning*. And it's sold really well; it's getting great reviews. And it helps you learn much faster. And there was a story there around your own learning experience when it came to compressing a four-year course and completing it in just one year. Could you share how that happened?

An MIT education in 12 months

Scott: Sure. So the book is about what I call *ultralearning*, or people who take on aggressive, intense projects to learn skills on their own, as opposed to the kind of stereotype we have of learning where you spend a long time in school, and you're studying really hard. I wanted to talk about people who got really good at things, but often not by going to school, or often by doing things in an unconventional way that in some cases, as we can talk about later, is often faster and more effective than schools.

And so this project I did, I did back in 2011, 2012. And basically, the project was to try to learn MIT's four-year computer science curriculum by passing the final exams and doing the programming projects. But instead of going to MIT and getting a degree and moving to Massachusetts, what I decided to do instead was use the free resources that they put online. And so they put on their platform the MIT open course, where hundreds of classes, these are some of the best classes in the world on computer programming, mathematics, physics, economics, etc. And I just built this sort of facsimile or kind of replica curriculum of what they would be doing and worked through the class. And because I was doing it on my own, and because I was, you know, I didn't have the same restrictions as an MIT student did, there were a few things I could do to speed it up a little bit, as well. And so I ended up doing it over 12 months, as opposed to over four years, which is probably the more typical path for learning a degree.

James: How did you get someone to market or score it?

Scott: So the nice thing is, is with a subject like computer science, the exams, they come with solution keys, and they're the kind of exams where you either got the right answer, or you didn't. So it's a little bit easier to grade yourself, as opposed to, let's say, you're doing a history class or something. You have to write an essay; well, then maybe it's a little bit harder. So in this case, I was lucky that they just upload not only the exams, but also the grades for the exams or for the programming projects, often it would come with a testing suite. So you just plug in your program into the testing suite, and it gives you, yep, it works the way it's supposed to, or nope, you did something wrong; it's got some bugs. So there was a layer of subjectivity to that, and I talk about that a little bit in my book. And on my website, I talked about some of the decisions I had to make to make those differences. But I feel like overall, they were fairly minor compared to the bulk of the material that I covered.

Chasing that piece of paper

James: It's certainly a good story. So that means you've got the MIT education, but you don't get a degree.

Scott: No, no. And I think that is something that people sometimes bring up because they feel insecure about, well, what's the point in learning something if you don't necessarily get a credential for it, or a certificate? But the way I feel about it is that very often, what we're looking for, both in our businesses and in our careers, is to be good at things, to understand how the world works, and to be able to use that knowledge to deliver value to our customers, our employers, the people that we work with. And so having some credentials is often a good foot in the door. But I think most people would admit right now, having a college degree doesn't guarantee that you're going to be successful in life.

And so in the same way, I think that it often makes sense to learn skills, you know, even if you're not necessarily going to get the same credit, just because it's going to improve the quality of the work you do. So in my case, I already had an undergrad. When I decided to take on this project, I had an undergrad in business. So getting a second undergraduate degree was sort of like, questionable value, but being able to program and understand computers and technology, well, that is certainly valuable if you're going into a business that happens to be online.

James: That's such an interesting point. I mean, one thing that most people are guaranteed when they get a degree is they'll have a large student debt.

Scott: Yes, yes. That is true.

James: And they're also getting out into the marketplace with a whole bunch of other people, at the same time, with the exact same certification, trying to get a job to go and work for one person who, you know, makes them single-source dependent for their income. The whole racket is a joke. I mean, Peter Drucker was talking about this in the late 60s about the knowledge worker of the future and how education platforms will crumble. And here we are in 2019 – it's possible to have a great income without having that piece of paper. I get really worried when people are chasing that piece of paper instead of the actual education that you would have had to achieve to get the piece of paper. So I think you've got it the right way around.

Can anyone learn from Ultralearning?

But it does lead me to ask, you know, were you super smart before you did the project? Like, is this just something that only you can do? Or could someone like me, who failed my school certificate, still learn from ultralearning?

Scott: So I talk about a lot of stories in the book, not just my own, and some of them are pretty extreme. I've got people like Nigel Richards, who won the French world Scrabble championship, even though he can't speak French, where people like Tristan de Montebello, who in seven months went from having near zero experience public speaking to being a finalist for the World Championship. And so there's people who have these extreme stories.

I think it's a reasonable question to say, well, could I do that? And the truth is, I don't know whether you could do that. And I don't know what you're capable of. But the message that I'm trying to give, I think, through the book, is that you also don't know what you're capable of. And so I think sometimes extreme examples can be useful, because if you can distill the principles by which they work, it doesn't mean that you can necessarily accomplish the same thing, just in the same way that studying Steve Jobs doesn't mean you can found Apple or create Pixar or something like that. But in the same sense, you can use the strategy Steve Jobs used in your own business or use the understanding that he had towards running and building companies. And so I wanted to try to do the same kind of approach with learning.

So in my own personal case, there have definitely been things that I've been quite good at when I started learning them. And I feel like I've been a bit more of a math and science person. So perhaps, for this MIT challenge project, that was a little bit given a bit of an advantage compared to some people. But on the other hand, there's also been things that I've really struggled with. And then I was eventually able to get good at them, because I found the right method.

So one of the kind of stories that I talk about, in the beginning part of the book, which is sort of my introduction to this world of ultra learners, or the people that are doing these incredible things, was in meeting this guy named Benny Lewis. Now, Benny Lewis, for those of you who don't know, has a website called [fluentin3months](http://fluentin3months.com), very modestly titled. And it's about his challenge, or his challenge at the time, he started it to try to learn a language as close to fluency as possible in as little as three months. And the way I was introduced to him was when I was really struggling with learning a language, in this case, French. I was in my business school, undergrad, and I was studying abroad for a year and I was really trying to learn French and I sucked at it. I was really working hard, but I didn't feel like I was ever feeling very comfortable. And so to hear about a guy who is learning a language in three months, and trying to approach fluency, just seemed kind of ridiculous to me, I had the feeling like, there's no way I could do that. There's no way that I could do anything like that. And it was meeting him and seeing his overall philosophy to learning, not just the specific tactics he was using, but his whole approach to optimizing the active learning languages, that that was sort of part of the big inspiration for me doing this MIT challenge project. And as I talk about in the book, I later did a project that was kind of similar to his about learning languages, where I went with a friend and we learned four languages in one year – Spanish, Portuguese, Mandarin, Chinese, and Korean. And in that case, we used a lot of the techniques and advice that he had given me for learning French all those years before.

James: Right. So I guess you've covered why it matters. So the everyday person, someone listening to this podcast, might apply the, I think there's nine principles, right?

Scott: Yes.

James: They might apply that to whatever project is relevant to them in their life. So for me, I could apply ultralearning to my surfing. I can use the nine principles. And as I was reading the book, I realized I'm actually, I have been doing a lot of these things. Because I started surfing six years ago, which is, you know, in my early 40s, and it's way too late to start surfing. You should start when you're like seven.

Scott: Yeah.

James: The kids around here – I live near a beach and the kids here, by the time they're 12, they're already doing aerial, you know, somersaults and stuff. Like, they're crazy good. So this old man taking up surfing, I shouldn't be able to surf at this age. And, you know, even with the challenges that come at that stage in life, where you get a bit tired of it faster, etc. But, you know, I applied a lot of the principles, and I'd love to go through some of them.

Scott: Perfect, yeah.

James: But if you want to learn a language, if you want to learn to cook, if you want to learn programming, and more importantly, for this audience, if you want to go from having a small agency, or you're some kind of business coach, and you want to be a world master at it, without the piece of paper, which is probably not that important, you really could apply these principles and become much better at what you do.

And so let's talk about what some of the steps are. And I guess it kicks off at the meta learning phase.

Learning about learning

Scott: Right. So meta learning is this idea of learning about learning. So that's what the "meta" means. And that idea, I think, is something that's so important when you're pursuing a project that involves a significant amount of learning on your own. Because the way that we are often taught to learn is that you go to a class, you enroll, and then you're just told what to do; you just follow instructions. And while that can work for some situations, there's a lot of drawbacks. How many of us, you know, have taken a language class for a year or two, and then don't feel like we can have a conversation? Or you studied something in school, and then don't find that it actually helps you in the actual job that you're doing.

And so if you're designing a program for yourself, then this meta learning phase is so important, because you don't actually know what the skill is. And so the first step in order to learn is just to actually figure out, what is the map? What is the territory that I'm actually going to have to explore in learning this skill? And so some of that is just breaking down, what are the resources you can use for learning it? So if we're going to be talking about surfing, it would be, what are the teachers, what are the mentors, what are the peers that I can use for learning? It would be looking at, you know, books, guides, courses, especially for skills like programming, for instance. If you want to learn to become a programmer, you probably need to get some resources, just to give you the basic instruction. Same thing with language learning. But at the same time, there's also going to be a process of figuring out, well, what is the thing that I'm going to have to do to get really good at this?

Interview an expert

And so one of the techniques I talk about in the book is called the expert interview method. And this is basically where you find someone who's already learned the skill that you want to learn, and you ask them how they learned it, and what they would focus on to get to where they are. And it sounds kind of obvious when you say it, but it's amazing how rarely people or how seldom people apply this. And so you'll have situations, for instance, with language learning, that I'm friends with a number of people who are polyglot and speak multiple languages, and not a single one of them likes Duolingo. And yet, it's the most popular app for learning languages out there. And so there's a real disconnect often between the approaches that people take, without doing their homework, without doing the meta learning research, and the approaches that people who really understand how it works, how they are using it to learn. And so having that ability to go and do that prior preparation is often really valuable, because that's where you find those 10X or 5X improvements in the sort of status quo approach.

James: It's such a good point. You know, when I speak to someone, they say, oh, they're going to start a business doing an agency. I say, Great, how many agencies have you had a chat with? They'll be, None. It's like, if every Subway owner or franchise would go and speak to three or four Subway stores before they pay the money to the franchise company, they may very well not take on the franchise.

Scott: Yeah.

James: Because everything you're talking about here keeps bringing up the concept of 80/20 for me or even 64/4. You can extract the kernel of the whole thing, like unpack it all in just a few conversations. In fact, one of the conversations I'm having next after our discussion is someone has contacted me and they want to pay me to educate them in how to put together [revenue share deals](#). It's something I've become specialized at, and I've done all the work, I've built up the contracts, I've got several of these deals in play. I've been doing it for years, and I interviewed about 12 people when I was learning about this. I went and found every resource I could, and I asked them about how they work, what went wrong, what went well, what documents do they have. And that was my capturing of all the things that were important. And then I used some of the next principles to go deeper in it.

But this person who I'm going to be chatting with, he's going to get all of that information in a really short burst. So it's very smart to do. People at our level, one of the best things they can do is to pay one of the experts in their field to just give them the gold. And I guess that's what I do with coaching as well. And I'm sure you do this in your, you know, with the book. It's a great way for someone to unpack these nine principles in just a quick read. You've packaged it together. So that's a great technique.

I know for meta learning with surfing, I consumed a lot of magazines; I watched a lot of YouTube videos; I hung out with people in the surf; I observed other surfers, and then I spoke with a surf coach. And I was able to put together a pretty good picture of what was involved. But one of the obvious things that came up is I needed to improve my fitness. Because without being able to paddle around for more than 15 minutes, you're not going to get very far down the track of actually using the techniques I was going to learn. So it gave me a map of what I needed to understand to be able to get good at it.

How focused are you?

So should we talk about principle number two?

Scott: Sure. So the second principle that I have in the book is called focus. And this is again, not super surprising, but it's kind of amazing how many people when they are trying to do something where they are learning something new that they really want to apply and be good at, that they've got the television on in the background, that they're answering text messages, that they don't actually set aside time in their calendar to actually get good at it. I think one of the key success criteria for mastering a new skill is actually creating a project, actually sort of saying, Okay, I'm going to work on this for 30 days, 60 days, 90 days a year, and I'm going to work this amount of time. It doesn't matter whether you're working 80 hours a week, or eight minutes a day. What matters is that you actually set aside the time to do it. And so many people they get in their head, well, I'd like to do this, but then it never touches their calendar. And because it never touches their calendar, it never gets done. And so focus in this sense is sort of the combination of not only setting aside time, so how do you prevent procrastination? How do you prevent getting distracted? How do you sustain your concentration? But then also, how do you use your mental resources to really focus on learning? Because learning is, you know, kind of almost definitionally, the hardest thing that we have to do. It is the things that we don't know how to do that we're trying to do and we're learning. And that requires all of our brainpower to do it well. And so the fact that a lot of us resist that, that we resist actually really putting in the not only the space we have in a little bit of time in our calendar, but just our full attention when we're doing it, that can really itself dramatically change your performance.

James: Yeah. For this one, I think what you said about touching the calendar, that is absolutely critical. Putting it in your calendar is the most powerful to-do list. In fact, that's the only system I use. I don't have a to-do list anymore. I scrapped it a few years ago. But I do block things in my scheduler, and then they have to happen. So for example, I've surfed pretty much every day for the last six years.

Scott: Oh, wow.

James: You know, like, it's a daily thing. And I think somewhere in your book, you mentioned this, that it really helps if you actually want to do the thing, if you can make it something you want to do. And you were talking about a family of chess players who, you know, the parents decided to raise geniuses. And one thing they worked really hard on was making the activities fun for the kids to learn, so they actually looked forward to it and they wanted to do the activity.

And that's exactly how I was with business. When I came home from my day job, which used to be running Mercedes-Benz dealerships as a general manager, I couldn't wait to just put on my hoodie, and get stuck into my online empire and build out my websites. And it was so exciting. And I did it every single night from about 9:30 at night, till two or three in the morning, for two and a half years until I could [quit my job](#). And finally, I was able to maintain my online business. And then I just didn't have to go to work every day, which was awesome. It's like I got 70 hours back a week. And I just started sleeping in every morning. And these days, of course, I go to bed dreaming about surfing. I wake up looking at the weather report. I know what board I'm going to ride, where I'm going to ride it, and it's a driver. So that focus comes really easily if you really want to do it, right?

Scott: Yeah. Focus on the motivational angle. So one of the things that's kind of interesting is that the process of shaping the project, or the thing that you want to get excited about, I think is a very big important part of being successful with learning. Because if you're going to do what I'm describing here, whether it's a huge fulltime ultra learning project, or even just something you're going to sustain over a long period of time, then you have to be motivated, you have to have that excitement. And I think the problem is that a lot of people see that as either they got it or they don't. Whereas I really see it as something that you design into your project. And so it starts with these kinds of little sparks of like, wouldn't it be cool if I could do X? Or, wouldn't it be amazing if I were really good at this thing that I struggle with right now? But then you also start shaping it by being like, Okay, well, what if I tried to do this for maybe a month or two? And then you start to imagine and visualize it. And so this kind of nurturing process, I think, is often very important for really getting that motivation to do it. Whereas I think for a lot of people, they mostly focus on the frustration; they mostly focus on the thing that they don't like, instead of the reasons that they're excited about it, and they don't really foster that.

The role of visualization

James: You mentioned visualization. I remember listening to audio cassettes of Dr. Maxwell Maltz. And he was talking about that. He was saying humans are goal-seeking devices. And he mentioned the concept of visualization. And they were doing experiments where they had sports people visualize the result. And then that group of people who visualized result could achieve better results than the group who didn't. Is that a big part of your preparation phase?



Scott: Yeah, so visualization is important. I think it's more important even perhaps than visualizing the goal is, to visualize the process, to really connect with what you're planning on doing. And I think that's also where you start to feel whether you have an emotional resonance for this thing that you want to do, because if you view it as drudgery, then it is going to be really hard to sustain your motivation. But if you view it as an exciting challenge, or something like, I don't know whether I'm capable of this, but who knows? That's where I think you really go far. So where you were describing building your online business, that is exactly the kind of feeling you want to have, that you're like, what would it be like, if I were really doing it this way?

So for me, doing the language learning project, for instance, there was about like nine months beforehand where I was really imagining, okay, what is it going to be like to go to these places? And in this particular project, the way we were doing it was we weren't going to speak in English while we were traveling. And so this idea of this kind of like, you know, light bulb moment where you just switch from one language to another, and it's just completely different, that was kind of a little bit scary, and a little bit like, Okay, this is maybe going to be frustrating, but also, this is going to be an adventure, this is going to be exciting.

And similarly, with doing the MIT classes, just, you know, the thing that was going through my head at the time when I was thinking about it, is that I didn't know of anyone who'd ever tried to do this before. So it was very exciting for me to think about, well, you know, what would it be like to be the first person to try to do something? And so I think you can find your own motivation in many places. It could be from the result that you anticipate getting from the goal, it could be because of the direct rewards it brings. Or it could even just be because this is something you've always really wanted to tackle, but you've been kind of afraid of doing it before. And so turning it into this challenge that you are going to think about, and it's going to kind of obsess you a little bit, can often be pretty exciting.

James: Yeah, I noticed in the forward of your book, James Clear was saying that he had to wait until you got back from your trip to catch up.

Scott: Yeah.

James: So I don't know how long you've been friends with Nir, but [he was talking about how to stay focused in his book Indistractable](#). And he was Episode 682. If you're listening to this, and you want to listen to that, I highly recommend it. The blow away moment for me on that was like, well, in the word, traction, you know, is action. Or in distraction is traction and in the word traction is action. And, you know, that's why the calendar is so important. So I think we've nailed focus there. By the way, there are people in our industry, in the entrepreneurial industry, whose whole pitch is about focus.

Scott: Yeah.

James: You know, they have great diagrams on whiteboards and movies about it. That's like, the number one success factor, according to some of the entrepreneurs, But I think it applies even more to entrepreneurs, the need to be motivated by a thing. Because I've seen very driven people who I've coached, like, they'll just overcome any kind of normal resistance to get the goal they want. They're just so driven. But they will also not do anything they don't want to do, often to their detriment. They won't even do the basics. And they really need team around them to mop up while this visionary's on their pathway of focus.

From learning to application

Let's talk about the next principle, which is directness.

Scott: So directness is an idea that I think is one that would perhaps surprise people, because I think entrepreneurs are the, you know, they are the classic doers. They're the people who are learning by doing. But I think it would surprise a lot of people, because the assumption that we often have is that the way that we learn in school is at least, you know, it's supposed to be that way. Like that's how we're supposed to learn things. And so it's very funny that there has been research spanning decades showing that human beings are actually fairly bad at something called transfer. So transfer's when you learn something in one context, let's say, in a classroom, or from reading a business book or from attending a seminar. And then you have to transfer it to a real situation.

And there's just study after study showing that you can spend time teaching someone something, and there's like this obvious application that they really should be able to use it in this particular situation. And then they just don't. They don't use the knowledge; like they didn't learn anything, even though you can get them to maybe pass a test.

And so some examples of that are, there was one study that showed that economics majors in this study did not do better on questions of economic reasoning than non-economics majors who had the same grades in their university class, which raises an important question: what was the point in studying economics if it doesn't allow you to reason about economic problems?

Or there was another study that showed that taking a high school psychology class did not improve the scores on going to college-level psychology, which is kind of also surprising. You'd expect taking a class, an earlier class, would help you in a later class. Turns out it didn't.

And then there was finally another study that showed that honors-level physics students often could not do problems that were even just superficially different from the ones that they had done in school. So they really learned all these principles of physics, they were at the top of their class, and yet you change the problem just slightly, and they completely fail at doing them.

And so this is very worrisome and troubling, because the whole idea of education is that we're going to go there and teach you some general ideas, general principles, and you're going to go out in the world and apply it. And the fact that people don't seem to do that is kind of worrying. And so the thing that I found that ultra learners do to compensate for this or to avoid this problem, is when they start learning something – so it's a particular skill that they want to learn or even a particular set of knowledge or ideas – they start by asking themselves, in what situations do I want to use this? Where do I actually want to be good at this and apply it? And then they make sure they do some practice early on, that is either in that actual situation, or in a situation that is very similar to it, so that there isn't as much need for this, what is called far transfer, where you have to transfer something from one activity to a completely different activity.



And so the applications of this are things like, if you're learning a language, and your goal is to be able to speak to people, then you better be having some speaking communication interactions fairly early on, instead of playing on apps for six months, or doing grammar exercises in your book exclusively. Or if you're trying to learn programming to build a website, then you should try to build a website pretty early on; you shouldn't just try to study computer science theories and work through problems in the book, being told what to do rather than working on your own projects.

So I think many entrepreneurs are intimately familiar with this until, you know, you buy an online course or you buy a business book, and then you flip through it, and you don't actually make those connections to practice. And so the knowledge just kind of becomes inert, it doesn't actually change your behavior.

James: That's a huge point. And somewhat of a relief. As someone who was not self-classifying as an academic, I didn't get great grades at school. It was a relief to get out in the real world and find that my pragmatic approach was an advantage. When I was going through sales, and then sales management, and then general management in my career, I was constantly buying books. And I'd read the book, and then I'd implement straightaway. Like, I'd read the book, and then that day, I would start the technique.

And here's the big tip: if you're listening to this, and you're learning about online business, or trying to grow your business, it would really help if you actually have a business. So [just start](#).

Because, you know, I've seen people do the theoretical learning phase. They get stuck in the learning loop, and they're just consuming and consuming and consuming. But there's no outlet for it. They make a lot of notes, they do a lot of plans. I've seen first-time students come in and they share with me their plans and their maps. And I kind of chuckled (quietly to myself, not to embarrass them).

But that was me at the very beginning of my journey. I filled out these A3 pads, these, you know, sketch artist books of flow diagrams and mind maps. Like, I think some of my original notes could be mistaken for the wiring diagram of a space shuttle. Like, they were very complicated. But then when I started doing what I'd always done in my career, and just applying one book at a time, it worked really well.

That's why I like our field – you can be up and running instantly. And you can apply. Like, every single podcast I do, I start applying the principles as quickly as possible. I can guarantee you, in the next day, I will have a conversation with someone about the Ultralearning principles. I was mostly taking them on board. But this one is just thrilling. Like, I'm the kind of person, if you buy some furniture, I'll just start assembling it. And then I might read the instruction manual if I get stuck, which is rare. I'm very pragmatic and hands on. I think this directness thing is talking my language. And certainly for surfing. The best way that I've developed my surfing is to just keep surfing. And it's hard to mindsurf or theoretically surf, because it's such a physical sport.

Scott: Absolutely, absolutely.

Attack your weakest point

James: So then we go into drilling, which is nice. This is principle four. You talk about attacking your weakest point. It sounds a lot like Eli Goldratt's Theory of Constraints, which is a fantastic technique I use all the time to help a failing business, is we look for the big lever that will change everything, the part where if you just change that, it makes a huge difference. Tell me if there's any similarities.

Scott: Oh, yeah, definitely. And I think what we can talk about when we're talking about drill is the right way to think about it, is that all the things that you want to be good in life, or most of the things you want to be good in life are not simple things. You know, if it's a simple thing, you don't even really think about getting good at it. You just, you know, okay, well, how do I rent a car from this place? Well, I'll just pick up the phone and ask them, right? Like, it's only when these things become bigger, like speaking another language or being a programmer or being really good at marketing or, you know, leading a team, then it's sort of like, Well, what does it mean to be good at that?

James: So maybe I'm the only one with SOPs for simple things. You know, like I have a packing SOP. Because if you're going to travel a fair bit, you can really get good at it, and save an enormous amount of energy and time, if you have a simple checklist that you can pull up on your phone. And that allows you to pack with the minimum amount of time and to never find yourself in a destination without the things you needed.



Scott: Also, maybe you've already internalized a lot of this principle. But the idea, basically, is that the big things that we want to get good at are really decomposable into a lot of little small things that are the kind of thing like your packing list that you can break down and really chunk off. And so the idea here is that if you wanted to get good at, I want to get good at public speaking, well, you can do a lot of public speaking, and that's going to help. But at the same time, realizing that public speaking is not one skill, but many, many, many different skills, allows you to make progress on that.

So maybe the thing that you want to get good at is being better at telling jokes. And now the problem of being a great speaker reduces to, Okay, how do I make this particular speech a bit funnier? And then, how do I make this particular joke a bit funnier? Or how do I make the tone shift of being serious to being light? And how do I manage that transition? And so you can see a big skill decompose into a bunch of small parts.

And so the idea here of drilling on your weakest points is very often for a complicated skill, if you can fix that one part of the system where it's leaking all the value, or you can fix that one bottleneck, you can create a lot more value. So if your business, if you think of it as a machine, has a lot of different working parts, and there's one part which is always causing you problems, then that's going to be the one that if you fix it, you're probably going to have better results.

So you know, if your website's constantly crashing, then Okay, let's get a better server here. Or if you have a sales page, and your product is really good, but it has a very bad title, then that's also going to cause a problem. So similarly, in improving a business is also the same way in improving your own skills. So if your skill is copywriting, then, you know, deconstructing your copywriting skill and realizing, you know what, actually a problem I have is that I'm not very good at using words to create a picture; I talk in very abstract language. And so my people reading this, they don't feel inspired, they don't feel motivated, because they can't see what I'm talking about. Okay, so I'm going to work on the next few pieces of copy that I write that I'm going to really work on that skill. So these are just little examples, but I think the idea of drilling is one that is robust and applies to learning most things that you want to get good at.

Spotting the clay feet

James: That's such a great life principle. It's like that story of the statue with the head of gold and the feet of clay, you know, and the sun comes out and melts the feet and it topples.

Scott: Yeah.

James: I'm always looking for that. Like, the speaking thing, as soon as you said that, I'm thinking, Okay, how do I go from a 500 auditorium to a 5000-person auditorium? Getting better gigs would be a great thing to drill on. How do you present better? [How to improve your slides](#)? So yes, it's a fascinating principle, that one. I'm a huge fan of that. It's one of my absolute favorite techniques, because I do a diagnostic when I bring on a student and I look for their feet of clay. And I'm looking for the quick wins. Like, often we just change one thing.

Like there's one student I had. He was a classic. He was making 30 grand a month. And we looked at what he was doing, and I discovered that he had this amazing skill that was right under his nose, that he didn't realize. He was so good at this one thing, he was probably the best in the world at it. And he wasn't even aware of it. And when I pointed that out to him, he went from \$30,000 a month to \$300,000 a month by just selling that skill as a service. And it's like, right there under his nose. By that one change. I'm seeing the power of changing one thing. It also reminds me of that saying, small hinges swing big doors. If you can find it, you can get massive growth, radical innovation.

The key to effective retrieval

So next up is principle five, retrieval. Test to learn.

Scott: Right. So this one here was one that when I was preparing the research for this book, I didn't originally think that retrieval was going to be a whole chapter. I was thinking, well, I'll throw it in, and you know, I'll mentioned some of this stuff in the bottom of another chapter on feedback, maybe, or on directness. And the studies and the research that was done was so interesting that I was like, Okay, I know I have to talk about this, because this is one that I think the majority of people – certainly the majority of students, or the people who are studying in, like, a formal classroom environment – have not heard of, to their own detriment.

So I'll give you one of the studies that was in this set of research, although there's many more than this just one study. And I think it's really interesting. So in this study that was done by Jeffrey Karpicke and Janelle Blunt, they divided students into multiple groups. One of the groups, they asked to do repeated reviews. So basically, they gave them a studying method, and then asked them to do this. So they give them a text on something that they have to learn. And the repeated review students just read it over and over and over again. And then another group of students, they asked to do free recall, which means that they read the thing once, and then they close the book, and they try to recall as much as they can remember of what was in the text. And the interesting thing is that after they were done studying, they followed up with the students and asked them, how well did they think they learned the material? And the people who did repeated review gave themselves really high marks; they thought that they had learned super well; they thought they knew it really well. Whereas the people who had done free recall, they were like, oh, wow, this is really difficult. I actually don't know it very well. And they give themselves poor marks. However, when you actually give them a test, it reverses. The people who did free recall remembered way more of the information than those who did repeated review. And so this obviously applies to studying if you have to pass any test. Don't do review, do recall. So close the book; actually try to remember it from within, rather than just looking at it over and over again.

But it has a lot of implications to people who aren't students. So we were just talking about public speaking. How many people, when they're preparing for a speech, have their cue cards in front of them, and they're looking right at their cue cards as they go, cue card, cue card, cue card, cue card, and then they sort of mutter the speech to themselves again and again and again. This doesn't work very well. You need to put the cue cards face down, try to recite your speech, and then only when you can't remember it, then look at the cue cards. That will actually allow you to memorize it so you don't have to look at your cards in order to do it better.

Or even thinking about reading a business book. You know, let's say you've read this great business book that has these really important ideas for you to use. Well, some of it, you're going to just be able to write down; some of it, you're going to be able to like, store off in a system of notes or something for later. But there's probably a lot of ideas that are deep principles that you want to just be able to remember them when situations call for them. And so for a lot of us, if we've read a really important book, maybe we'll read it once. And then we'll read it a second time and then a third time and a fourth time. And what this research shows is that you're actually going to be a lot better off in terms of your ability to actually use the information with the book, to actually remember it, if you close the book when you're done with a reading session and say, Well, what the heck did I just read? What was actually in the content? And that act of trying to remember it is going to make you a lot better in actually improving your memory and using the information later.

James: I love this so much. Again, I use that visualization. I'm actually going through my slides for an upcoming presentation in my head and learning the sequence. And then I'll go back and check if I got it right. And also, when someone mentions something in a conversation and I want to recall something, I won't immediately look it up, I'll just have faith that my brain can go and dig it out. Because I remember reading some research that suggested that we have no trouble storing everything. It's just the retrieval that's hard. I wonder if having a belief that you can retrieve things helps. I wonder if it biases you to being able to find stuff, rather than surrendering to looking it up.

Scott: I think, yeah, I think you can. I think you probably can. I think that what you're saying is absolutely right, though, about the role of retrieval, is that a lot of people view the human brain a little bit like a computer, where the important thing is that you hit Save, you hit the Control-S or Command-S on your prompt and save that document, because if you didn't save it, there's nothing there. And that's not really how the mind works, though, because the problem is that we're kind of saving all of our experiences, at least a little bit, all the time. The problem is that actually bringing that file up again, and bringing that memory up again, in the situation that you need it, that's actually really hard to do. And so if you can think about it, and this goes back to this directness idea again, as well, if you can think about the situations where you want to be able to remember information, that will also probably help you retrieve it. If you think about, Okay, I'm going to want to remember this when I'm doing X or Y – now, obviously, you can make yourself a little note or reminder or some physical thing, but even just the intention of setting it and saying, Okay, well, when I'm giving my next speech, I want to remember that I should use this process, that itself can be helpful. So I think that thinking about when you're going to want to retrieve information, I think also helps in coding the information in a way that you can retrieve it more accurately than if you just looked and you're like, Hmm, that's interesting. Next, right?

James: Well, most years when I go on my [Maldives](#) trip with a few business friends, we do this exercise where we hold our breath, and we go on the back of the boat and hang on to a rope and we relax. And we've got someone there timing us and supervising us. Most people can hold their breath for about 20 seconds, 30 seconds on the first time. And we do it four times. And by the end, a lot of people can hold their breath for one and a half minutes up to three and a half minutes. So for me, when I'm doing that, we got taught a meditation, we go into our happy place. But in my happy place, I'm just there, I'm actually buying a coffee and then I'm picking a surfboard off the rack at my favorite rental store in Waikiki. And then I walk across the road and I paddle out and catch a wave. By then, like, three minutes is up. With every detail, I can look at each surfboard and remember the color and the fins and where they are in the racks; like, I lock it in. So every time I am actually at Waikiki, I just pause and I just take it all in. Because I do feel we're doing the auto save. I think our brain has to filter stuff out or we'd just go absolutely crazy. Like, we couldn't just purge everything that we've stored and deal with what's happening right now. So it's an exercise worth building strong.

Getting feedback – good or bad?

Let's talk about the next one. This one's really interesting, because principle six kind of leans on things that we might have learned from lean startup methodology, minimum viable products, etc. And that is the feedback. Let's talk about feedback.

Scott: Yeah. So feedback is a really interesting example. Because this was again, like before I did the research for this book, I was a big fan of Anders Ericsson's deliberate practice theory. And so deliberate practice, the idea is that immediate feedback is an essential component to expertise. So I kind of imagine that when I went in and looked at the literature on feedback, that it would largely support that it would be a lot of studies saying, yep, feedback's good. And the interesting thing is, is not that feedback is bad, because most studies do show that feedback is beneficial for learning. However, not all of them do. So in the meta analysis, they aggregate a bunch of studies together to get a more reliable result.

And so in this meta analysis done by Avraham Kluger and Angelo DeNisi, they looked at a bunch of studies involving feedback and its impact on learning or getting better at skills. And what they found was that in nearly 40 percent of the cases, feedback actually had a negative impact, so that giving people feedback actually made them perform worse.

And so I thought this was really interesting, because, you know, obviously, we need feedback, we need to go out there and get feedback. But the research doesn't show that it always works super well. So what is the reason? Why does it not always work? And it turns out, there's a couple of reasons. But one of the major ones is that not all feedback is useful information. So sometimes you can get feedback, and for instance, you know, if you think about when you were in, like, your high school English class, and maybe you wrote an essay, and your English teacher looked at it, and you're like, oh, wow, you know, you're terrible at this. Well, this is also feedback, but maybe it didn't motivate you to work really hard on the next essay you submitted.

And so similarly, when we are soliciting feedback, whether it's about something that we're learning, or from our business or for something else, it's very important that you in the role of the learner, the person who's trying to acquire a skill, have to process the feedback. So you have to focus on what actually matters, so what is actually going to cause you to change your behavior to make adjustments, and really ignore a lot of stuff that is not really about the task, or not really about the thing that you want to improve on.

And then the other thing that's important is to recognize what kind of feedback you're actually getting. So a big mistake, I think, that often happens in business context is that you don't have a lot of customers or clients yet. So you ask them for feedback; you show them sort of a prototype and you say, Well, what do you think? And maybe they say, yeah, well, that's okay. Maybe that's what they say. And then you say, Well, why do you feel that way? And then they give you a bunch of reasons. Now, the problem is that sometimes they can give you useful advice; they can say, well, maybe you should change this, or you maybe should change that. But often what's happening is that they're judging what you've done, and what you've shown to them, as a complete whole, as a holistic kind of judgment. And because it's a holistic kind of judgment, they're not actually able to splice it apart and point to things that you should fix. And even if they can point to things that you can fix, maybe they don't know how to fix it. You know, maybe this was boring or uninspiring or unenticing, but they don't know how to make it enticing. And so sometimes what can happen if you're a business owner, if you're someone who's trying to improve skills in this way, is that you can overreact to that feedback. So if someone says, Well, I don't like the color, make it red, then you make it red. And then someone says, Well, you know, I think blue would have been better, and you make it blue. And you go back and forth, and back and forth, and instead of improving. And so one of the skills that was present in all of the ultra learners was having a finely tuned sense of not only how you get lots of feedback, but how do you filter it so that you get the information you need, and you also learn to ignore some of the spurious results, or some of the noise, or some of the information that just really has nothing to do with helping you improve.

James: I love this so much. In our world, it's often family, like Mom or Dad, or brother or sister or a mate from the pub, giving you feedback on your online business model. You'd have to say, maybe, contextually, it's not relevant. I'm a classic at ignoring feedback. I'll be able to dismiss feedback if I feel it's not relevant to me or my situation. Because people don't know all the details. They don't know you, they don't know your mission, or what you're trying to do. They don't know everything else going on, and all the other moving pieces. So I'm able to [filter and isolate it without getting too invested](#).

I also think what you're talking about explains why a lot of those study groups failed for some companies, because they're not getting the right feedback. And the sort of feedback I love to get from people, you know, when we're putting out offers, is that they actually buy something. That's even better than someone saying they would buy it, because you get that preference versus performance error.

I took to wearing a GPS watch for the last year or two, when I surf, because it gives me data. And I can come back and I can check the top speed and the longest wave, the distance that I paddled. And I log it, I log the longest waves and the fastest speeds in a spreadsheet. And I was able to take all the data from my different surfboards and my surfing, and then from that, build the perfect surfboard for me, with a friend of mine, on like a CAD modeling software, with water flow diagrams and everything. And we built this thing and we made it out of Kevlar and carbon fiber. And then I think we've done three now. The third one, I just took away with me. And I rode it the majority of the time and I got the fastest waves, the longest rides. It was from getting all that feedback. But really relevant. Like, you can't argue with the GPS tracking feedback. It's like, it literally follows you. So that was contextually relevant. It was highly useful. And I was able to do something with it. So it made it into my filter, versus a friend saying, yeah, I like the look of this one. In our industry, too, in the surf industry, surfboard shapers are notoriously unscientific. They don't really have any hard data compared to most other industries. So that was really fascinating.

How to patch a leaky bucket

I want to talk about the next principle, which is retention, principle seven, don't fill a leaky bucket.

Scott: Right, right. So one of the things that is true of learning pretty much anything is that once you learn something, you immediately start forgetting it. So this is one of the first psychological experiments that was ever really done by Hermann Ebbinghaus over 100 years ago, where he basically meticulously tracked his ability to memorize nonsense syllables, and also the rate in which he forgot it. And this was one of these early experiments that has since been verified with more robust studies. But the basic idea still holds that when we learn things, we're kind of always forgetting them a little bit.

And there's different reasons we forget. Some of it is just time that goes in between. You know, the brain is made of meat, essentially, and so it starts to shift and move and things that were strengthened get disrupted over time. But then also, some of the issues that we have with memory have to do with one memory partially overwrites another one. So if you learn French, and then you try to learn Spanish, then you might start to forget some of your French or you might start to forget some of your Spanish because your French is mixing it up. And similarly, when you learn lots of skills and learn new ideas, it can become a bit jumbled and distorted.

And so the ideas of retention are how do we deal with the fact that our brain is like this? How do we deal with the fact that memories are really falling out of a leaky bucket? How do we patch that bucket, so to speak, so that we can get the longest-term memories for the least amount of effort? And there's a few things that we've already talked about that helped tremendously with that. So retrieval practice is one of the best things you can do. So like we said, with those studies, if you just read a book over and over and over again, you're not going to get the same benefit, as if you read it once, shut it, try to remember everything in it and then go check to see what you remember and what you didn't.

And so another really prominent thing that comes up a lot is spacing. So spacing is the idea that if you had, let's say, 10 hours to learn something, that you will actually remember more if you spread those 10 hours over 10 different days than if you do it all in one day. And the impact of this is that seeing the same information on multiple different occasions, spread out in time, has the benefit of really stretching out how much longer you will remember that. And so I think about this in terms of not only the books we read, the podcasts we listen to, all the information that we're consuming that we want to remember that we want to have an impact on our businesses and our lives. How can we make sure that we're getting some of those extra exposures so that that really great idea you heard about six months ago doesn't just kind of collect dust in that empty attic of your mind, instead of actually being at the forefront where it could be useful?

James: Right. So basically, if you want to retain something, you should just schedule to revisit it. For you, it might be continuing to travel in the future, to reconnect, right?

Scott: Absolutely, like any skill that you have. So there's different ways that you can set this up. You can make a very deliberate schedule in your calendar to just say, okay, after I finish this book, I just make a little ping after, like, three months or six months to, you know, do a little bit of free recall, look at some of my notes that I had from the book, if I thought it was really good. So you can be very deliberate about this. Or you can just try to organize your life or your environment to create these opportunities for reminders. One of the things that I often do is I have multiple books on the go so that I get a bit more benefit of the spacing. Instead of just trying to read the same book over two days, I usually have a couple of books that I'm going so that I actually do have spaced exposure to the same book. So there's different ways you can approach this, and I discuss a lot of the different styles that people use for different subjects in the book. But I think understanding the overall principle, I think, is very useful, because very often we cram things into a short period, and then unfortunately it leaks out pretty fast.

James: So what I'm going to do is I'm going to relisten to this podcast when it gets published.

Scott: Yes, that'd be great.

James: I mean, this is one of the most valuable podcasts I've ever recorded. And I can tell you, I've probably recorded over 1000 podcasts, if you add up my other shows.

Scott: Oh, thank you.

James: It's hard to explain. But if you ever had a situation where you finally get revealed some of the science behind that sort of explained what you have intuitively known to be the truth, but it's sort of verifying, validating that. You know, as I read your book, and I'm talking to you now, a lot of things you're saying, I'm just thinking, well, that's, that's why that happened. And I've just stumbled across this. So really, I wish you had written your book 20 years ago – it would have been more helpful.

Scott: Well, you know what? It's funny you say that, because even a lot of people I spoke to who even read early advance copies, such as James Clear, was saying, "You know, it's funny, because you put this idea of ultralearning, and it sounds maybe somewhat distant and unapproachable. But then when I look at the principles, and I look at the actual projects, I think, Oh, this is what I was doing when I was really successful at that thing." And so what I really wanted to do is not to show people something that's so weird and bizarre that's totally outside of anything that they've ever considered before, but also to help illustrate, when you have been successful at getting good at something in the past, you were invariably using these principles. And when you've struggled, it's often because you weren't. And so if you can notice that distinction, you can often make adjustments to how you approach new things in the future, to prevent some of the difficulties you might have had, but also to highlight your strengths and also to double down on the things that you were doing right, and maybe you weren't sure exactly why it worked.

James: Absolutely. It's like retro codifying something you already were doing. You can repeat it in the future, and you can remove any of the gaps. And that's what's so powerful about it. And by the way, I get pitched a lot of people wanting to be on this show. Like, every single day, our support center is fielding off inquiries from people who want to be on the show, but not much makes it through. But the topic itself is just so useful. If you can learn better, I think that's such an advantage in business and in life. You're explaining, I think, to me, why school wasn't a good fit for the way that I learned, for whatever reason, but I'm not stupid. And I was able to adapt different ways. And I think your methodology, why aren't they teaching this in school? You know, why aren't they teaching financial education in school? These days, they're just trying to stick a pistol into students' hands. Like, the school system's gone a little bit crazy. Not in Australia, of course.

Doing miracles with your mind

Now let's talk about principle eight, intuition. You've got to dig deep before building up.

Scott: Right. So the idea of intuition in particular, I wanted to highlight two different things in this chapter. So one, I wanted to look at how people who seem to be brilliant geniuses, who can just kind of like pull answers out of thin air, to really dig deep to understand kind of how are they able to perform these feats of intuition.

And in particular, I look at the great Nobel Prize winning physicist Richard Feynman, who's really been my intellectual hero. I see him as the central example here of someone who just do things with his mind that seem almost miraculous. And it looks like, if you go through the cognitive science of how this works, that it has a lot to do with what is known as chunking. So chunking is the idea that we actually have a fairly limited ability to hold multiple ideas in our head simultaneously. And so this kind of goes to this famous rule of seven plus or minus two, I think, is the original formulation. But now psychologists think that it's probably more like four, so it was probably overestimated how many things we can hold in our mind at a time. And it basically means that if I give you a lot of information at once, you're going to quickly not be able to keep track of it all. So one of my examples is, if I did FMCBBI, and then IAA, and then asked you to repeat it to me, you might struggle because those are, you know, nine letters. But if I said FBI, MBA, CIA, you would have no problem remembering it, because even though they have the same nine letters, they are in three chunks that you've previously memorized, so you can use and manipulate them fairly easily. And so this works with letter combinations, but it also works with more abstract skills. So when you see someone who can do things that seem like they're a bunch of brilliance, like a chess grandmaster, or a physicist or great painter, artist or manager, often what they're doing is they have tons of stored patterns from experience dealing with it that allow them to build up and make these intuitive leaps.

So this is less of a prescriptive idea and more of a descriptive idea. It's more something to explain how intuition works. But then in the later part of the chapter, I talk a little bit about how you can overcome your deficits of intuition. So how do you deal with things that you don't understand or things that seem confusing to you? And in there, I talk about a technique that I kind of developed and named after Richard Feynman, called the Feynman technique. And the basic idea of this is that you get a blank piece of paper, you pick some concept or idea or method or process that you don't really understand – so it could be something from math or physics, it could be an accounting idea, it could be how some computer program works that you need to understand for your job. And then you write at the top, understanding whatever it is, and then you write an explanation as if you were teaching it to someone else, but you write it down for yourself.

And this does two things. So the first thing it does is simply by writing it down, simply by writing down your ideas, the thing that you don't understand, very often, that overcomes some of this limitation of the amount of ideas you can hold in your head simultaneously, because you're able to put them down and you don't forget them in between. And so this already solves some of your problem. It's kind of like writing literally makes you somewhat more intelligent momentarily, because you're able to keep track of more things at once.

And then the second thing that it does, is by writing down the explanation, you will notice where you start to get stuck, where you start to get confused, where you start to be unsure of what you should do next, or what you should explain to describe this feature, the problem. And those are the things that give you the perfect question to ask a colleague, to ask a peer, to ask a fellow entrepreneur, to ask a teacher, to even Google or look up in a textbook. And if you get those specific questions, you're going to get much more specific and useful answers.

So I'm sure you know this from coaching a lot of people, that sometimes people will just be like, Well, how do you be successful? And it's sort of like, well, how the heck am I going to answer that question in a way that's going to help you with your problem? But if someone said something like, you know, I have a website that has about 10,000 page views a month, and I've done this and this and this, and what one strategy would you invest with to get better at it? Like now all of a sudden, we're getting much more specific answers, and you can maybe actually suggest a useful tactic. And so if you're listening to this right now, you can apply this to yourself so that you will be able to be that good, coachable mentee or student so that you can go out and when you're seeking information from the world, you'll have those crisp, succinct questions to ask that will give you the answers that you're looking for.

James: That's so true. [If you ask a better question, you get a better answer](#). I do spend a lot of my time helping people ask a better question. Often they'll actually just give me a statement. They'll just do like this big long diary journal, and then they pause at the end. And then they might say, what are your thoughts? I'm like, I'm waiting for the question. What's the question?

Scott: I've gotten a lot of those. I've gotten those stream of consciousness rants that go on for about 3000 words. And then they just say, so what do you think?

James: Yeah, so there's not even a question. Like, literally, they're not asking questions. So I get them working on the question, because the good question gets the good answer. And your hero, Feynman, that's hilarious you said that, because when Nir suggested that I speak to you on a podcast, I at the time was just finishing watching the entire Big Bang series. And it's about these super smart scientists who are MIT-educated, and Feynman is one of the heroes of the characters. So I'm thinking, yeah, I have to have to speak to this guy about how you'd compress a four-year MIT course into one year. It was topical.

Scott: Richard Feynman, I think anyone who's listening to this, obviously I would really appreciate if you read my book or if you got my book. But a much better book, if I can be so honest to say, is Richard Feynman's autobiography. Surely *You're Joking, Mr. Feynman!* is truly one of the great autobiographies. Not just because the guy is clearly a genius and has made not only enormous contributions to physics, but to thinking in the world, but he's also just the kind of person that you read about him and you want to live your life like him. He did a lot of his physics work in strip clubs, he played the bongo drums, he traveled around, picked locks at the Manhattan Project. He was really a kind of fearless individual who just really took on any project he wanted and lived by his own rules and was nonetheless very successful for it.

James: My friend, [Dan Dobos](#), who's been on this podcast several times, is, he holds a memory record in Australia for being able to remember the most things. And he's a real thinker, but he put me on to that book some years back. It was excellent. But rest assured, everyone listening to this podcast will go out and buy *Ultralearning*. We like to read, and Audible, a Kindle, paperback, whatever suits, there will be a flurry of sales, because the book just goes deeper on these topics. We've only got one more principle left, I think we should roll it out. What do you reckon?

The thrill of exploration

Scott: Sure. Sure. Yeah. Let's not save that. So the last principle that I put in the book was called experimentation. And experimentation is something I think that entrepreneurs, people who run businesses, know intrinsically, because everything that you do is an experiment, that you are not sure what's going to work and you try stuff, and you learn from your experience. But I think it's very important to underline this principle and not to miss it. Because when I was writing the book, I think one of the fears I got, and to be honest, I still get it from people, is that everyone wants the recipe; they want a step-by-step formula; they want step one, do this, step two do this, step three, do this. And it's not that formulas and recipes are bad. I mean, if you want to cook a cake, I would also, you know, get a recipe first. I wouldn't just throw things together. But if you truly want to be successful in your business and in your life, you need to actually work with the principles. You need to work with the deeper ideas of things. And this involves trying stuff out.

And so all of the ideas that we've been suggesting right now, they should be starting points to think of your own experiments. So don't think of them as the endpoint, that this is a recipe, that you're going to bake a cake or something like that. But that they should be the starting points. So if you can think about each of the eight things that we've talked about before, you think about meta learning, focus, directness, drill, retrieval, feedback, retention, intuition, you think about these ideas, and then you can start thinking about, what are the processes that you're trying to get good in your life? What are the things that you're trying to master? How can you make adjustments to what you're doing and try different things out?



And the truth is, sometimes you're going to fail. Even now, to this day, after writing this book, and spending a lot of time learning, I still try projects where I try something that I think is going to work, and it turns out, for reasons I didn't totally anticipate, that that's not the right way to learn something, and I should do something else. And so there really is no formula that will work for all people in all situations. And I think this is one of the reasons why the school system has failed so many of us, is because it is the ultimate formula. It's the ultimate recipe that takes all of us and tries to grind us through the same meat grinder. And so I think if you can approach things with the spirit of experimentation, you really will be free to apply and use these ideas the way they were intended. Whereas if you just want it to be a mechanical system, that you do exactly the same for exactly the same projects, you're going to get stuck a lot more often. And so experimentation to me is really, you know, this thrill of exploring and trying things out and not being sure whether it's going to work, but having good reasons to try what you're trying to do.

James: Yeah, I like that. You know, a lot of people come looking for the [holy grail](#), that step-by-step formula for making money online. And there's a lot of people selling products that promise that I know from the reality, it's just not that easy. You know, in that previous topic in intuition, I like Munger's mental models. You know, it is the set of models that he can apply to make good decisions. You need to have the principles. Even in your cake one, like, you can follow the recipes and get exactly what's on the card. However, you get exactly what's on the card or worse, right? But not better. So if you do know the principles, you can start creating amazing masterpieces, you know, with some adaptation and experimentation.

Scott: Absolutely.

In quick summary

James: What a feast of information. Scott, you are incredible. So, a little recap. Principle one was meta learning, and that's just mapping out and understanding how to design your best learning system for you and what are all the bits involved. So that's like doing your research, and asking a few people can fast track that.

Principle two, focus. That's about committing to the schedule, making it touch the calendar, and leaning right into that.

Directness is principal three, and that's about, I guess, it's about doing the thing, and not hypothetically or theoretically doing it and losing everything on the transfer.

Principle four is to drill. Just go for that weakest part and get radical improvements.

Five is retrieval. So, visualize. Test your thing; don't just review, review, review.

Scott: Essentially what you're doing right now. Reviewing the concept.

James: Exactly what I'm doing right now. It's funny, that.

Six is feedback. So remember to use your filters – not all feedback is equal. So it's an 80/20 on feedback there. You got to get a sensitivity as which feedback to accept and which feedback is not important.

Number seven is retention. So we should incorporate a routine around the things we want to retain so that they stay fresh, and we're not overwriting them.

Eight is intuition. That was more descriptive. We're using chunking. One of the fun experiments actually I do for hiring a candidate is, we ask them to write a tutorial on how to tie a shoe lace. It's actually really hard to do. It's really hard to write that. And the interpretations we've had back are incredible. The best ones I got back are where they just ignored the written and they made videos. And I actually learned three new ways to tie shoelaces, incidentally.

Scott: Oh, interesting.

James: So like, when you think you know something, and you've been doing it for decades, and then you'd learn a new way to do it, that's why it's really good to be open-minded.

And then the last one, nine, is experimentation. Just try stuff. You know, don't wait until all the ducks are in alignment. I think this is good for perfectionists to hear, right? Just get out there, get in the market. Like I was saying before, if you're going to study online business and you want to be an entrepreneur, go and get a business. Start! Even if you're coaching a friend or helping them out. One thing you said earlier was to learn something as if you're going to teach someone else. I think that's truly a great way to learn. Like, I get spoiled because I coach so many people – I think I learn the most doing these podcasts, answering like 10,000 questions a year. I learn so much, because it forces me to to build that muscle to be able to answer it.

And Scott, just a bonus for you. FMC BB IIIA.

Scott: Very good, very good.

James: All right. So check out Ultralearning. Go and buy the book, the Kindle, the Audible. Scott Young has a website at scotthyoung.com. Check it out. Obviously, an amazing, incredible talent and a great contributor to the world of life and business. Thank you so much, Scott. This has been incredible.

Scott: Thank you so much for having me. It was great.



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