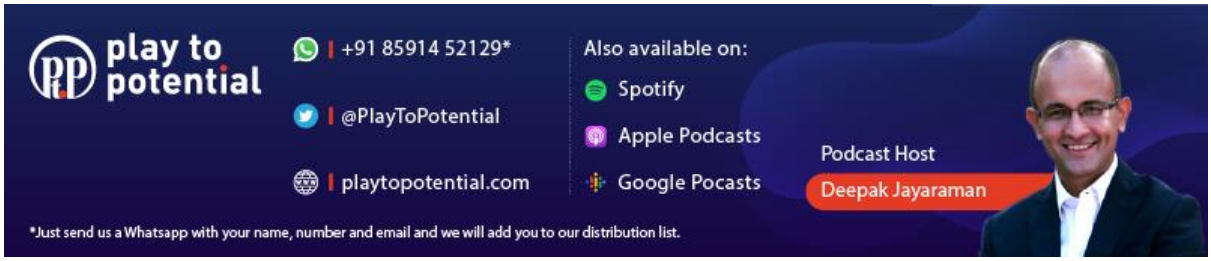

Context to the nugget conversation

Tom speaks about how learning works and speaks about the distinction between conscious and sub-conscious learning. He also makes the distinction between the different parts of the brain and intelligence that get developed when we learn. He speaks about fluid intelligence which is often the raw horse-power that gives you the ability to process a situation. He contrasts that to crystallized intelligence which is often the wisdom based on the cumulative experiences we have had in life. Chess Legend Vishy Anand had spoken about this distinction when he was on the podcast.

Transcription

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Deepak Jayaraman (DJ): And at the outset, Tom you say it is a why to do book and less of a how to do book and you also… I like the distinction you make between two types of knowledge, right, a declarative knowledge and procedural knowledge. Do you want to shine the light on the distinction here?

Tom Vanderbilt (Tom): Sure. Yeah, I mean, I said why to do rather than how to do because reading this book will not necessarily make you a better singer, surfer, drawer, juggler or maker of things but what I really wanted to do is to get people past the initial hurdle that many of us feel as adults in simply trying something new because of this internal self-talk that it is not important to our job, we are too old, I might be bad at that thing in front of other people, why would I want to invite that into my life. So, that was sort of the motivation there and you mentioned procedural and declarative knowledge and these are interesting things because they sort of speak to the role of skills in our lives and skill learning and that procedural learning is knowing how to do something and declarative is knowing about something, knowing that the knowledge that how to do something. There's a famous case here which is very interesting of the amnesiac patient in United States named HM who was written about by many psychologists and he was undergoing some interesting experiments where he was being taught this sort of a motor skills exercise in a lab setting and he was an amnesiac. So, every day he would actually forget the next day that he was learning this thing, but he actually was making improvement in the thing itself. So, it just sort of showed that skills operate in this different part of the brain than the knowledge we have about things. He might have forgotten that he knew how to ride a bike, but he actually could still ride a bike, which was sort of a very odd thing I think and just speaks to a, you know, skills have a sort of automatic presence in our lives that many of us don't think much about these things because once you know how to do something well you stop thinking about it. We don't… if you go for a walk this afternoon, you are not going to look down at your feet and wonder if you are walking correctly or could I walk better or, you know, it is just you have made that a fully automatic behavior and if you actually did try to think about it, you'll make it worse. So yes, right that…

DJ: This reminds me of the book, The Inner Game of Tennis which read some time back which talks a little bit about, you know, not letting your thinking coming in the way you are playing.

Tom: Yeah, which is a hard lesson because we are very analytical as adults and we tend to overthink things and this is one element where being an adult beginner is a little bit more of a challenge because children will sort of plunge into trying to learn an activity simply by sort of inviting it and not really knowing what the rules are, often not having a lot of experience with other things like that. For example, learning a language, kids just are they do things like babel or they mimic and they constantly go back and forth with their parents, they are not thinking about grammatical structures. If I tried to learn a language today, I have this entire history of five decades of speaking English. So, English and my brain is very well tuned for English; if I try to put another grammar form on top of that it is going to be very difficult. There's this process of interference that psychologists call it so, you know, and then sort of a vicious cycle that happens here, once I start struggling with that language, I'll be aware that I am struggling with it; that will cause embarrassment, tension, I will really start thinking about how I am speaking and then that just makes the whole thing go worse. Yeah, so Gallwey was right in that. Sometimes the key to effective skill learning is to stop thinking and often just try to put your body into this pure sort of autopilot mode, and I had a jogger instructor who used the instructions to be the robot and the robot was just my hands moving in this robotic fashion and not trying to think that how they were moving but just to simply move them. So, it sounds I don't know sort of counterintuitive I guess or something but just to bring the point back home it shows how these processes live, exist in different parts of our brain and that even if you forget, even if you forgot that you knew how to do something you could still actually do speak to the old cliche about riding a bicycle is that you never forget how and we really don't.

DJ: And you speak about the roles of fluid and crystallized intelligence in the way children and adults learn Tom. Could you talk a little bit about what these two types of intelligences are and therefore what does it mean in terms of how we think about learning as adults?

Tom: Sure, I mean fluid intelligence is the sort of rapid-fire, quick, puzzle solving intelligence, solving problems very quickly, spotting things. To use the game of chess as an example, my daughter was very good at spotting potential checkmates, playing very well in blitz games which are five minutes per player because her brain was just operating very quickly. And crystallized intelligence refers more to these things that are built up over time like wisdom and metacognition and the way it sort of looks in the human brain is that the adult brain draws on sort of a wider area of the brain in cognition than the young brain does and this comes at a certain cost, we have sort of have to work harder to achieve the same result but it also gives us a certain larger sense of bandwidth. In everyday life this exhibits itself in things like wisdom or… so, in the game of chess she would be good at those other things I mentioned, quick puzzle solving and things like that, but I would have an edge in let's say the slower, to think of Daniel, the psychologist Daniel Kahneman's book Thinking Fast and Slow, so fluid is the thinking fast, crystallize is to thinking slow and there are many moments in the game of chess when you want to think slow, you might want to think about your strategy, you might want to think about does this game remind you of another game you saw, having the patience to… another thing is my daughter was always guilty of not doing in the beginning was she would play her game as if she were playing by herself, basically never thinking what the opponent why the opponent was doing what they were doing. And this is something that as adults I think we have more of a sixth sense here of sort of looking out for things like that; okay, he just moved his queen there, why did he do that and then… so, that is sort of the…

DJ: I understood.

Tom: And it sort of breaks down that adults are sort of more oriented towards the crystallized wisdom and children the fluid although we of course both sets of people have both of those capacities but yeah.

Reflections from Deepak Jayaraman

DJ: This reminds me of the podcast conversation I had with the Chess Legend Vishy Anand (VA). We spoke about how he unlocks the power of the left brain and the right brain when he trains and he gave us a masterclass. He touches upon some of the themes that Tom speaks about.

"DJ: How much of the meticulous planning gets coupled with sort of the pattern and the big picture thinking which might be beyond the left-brain capability?

VA: Let me follow this rough terminology, my left brain is trying to have some sort of control on the chess board and my right brain let's say what deal with when you lose control, I will describe it in those terms, I don't consciously break it down that way but mostly chess players prefer to win an easy game than a hard game would prefer to win without effort than effort or rather preferred to the effort was at home or at the training camp rather than at the board where the uncertainty involved so everything which will fall under control you will think off with the left, by that I mean things which are already well known to everyone, I mean there is this whole massive knowledge already exist about the chess, you want to be able to work on that and then recall at the moment when you need it, there are so many examples of people losing a game because they know the evaluation correctly they may even know the idea, but they don't know what exactly and if you don't know it exactly you might sleep up in the execution, so that broadly speak on control so when you play against someone you would like to develop the game along the lines of what you prepare this morning and so that is the systematic work, that's the work you work on when you are getting to a training camp you tried to get the work out of the way you think as much as things meticulously and so on, but you should always be ready because you are basically playing against someone who is trying to get you out there at the open he is trying to get you out of your comfort zone and he is trying to make life difficult for you, and he has the same knowledge that you have so it's very easy for your opponent to think this is what Anand would have prepared, how do I get him out and so he is looking unusual ways to surprise you and so if he does that you should be ready for surprises, now that means when you learn a subject even any part of chess that you plan to do use for the next round or the next week or whatever, it's not just enough to remember the or get a grip on the existing knowledge because everyone has that and that doesn't differentiate you chances are you will be dropped very soon into something that you hadn't looked for, how do you deal with those problems, so the thing is when you work you can't only work on prunes that lend themselves to solutions, you have to think more broadly and think how do I train my skills in such a way that I develop a feeling for this class or positions so that whatever turns up I will be able to find the best moves so you have to do a bit of both. For a right brain what will you do? You play a lot of 5 minutes games, blitz games you do problem solving problem solving is they are trying to find out very unusual patterns and the more unusual patterns you find you are training to your brain to think in an unusual way, so again when you look at the position how many candidates move you think of? If you normally think of three but after some problem solving training you are able to think of 5 that's very healthy, because you pick up more unusual moves, so you would have to balance your work, in such a way that not you are only getting to the proper work done, which is essential by the way, the existing base of knowledge you have to learn playing, you have to learn to play it well, but you also have to train the skills that you need to just cope with unexpected circumstances, and last but not the least the psychological aspect, there is no use having all the creative in the world if when the moment comes that you have to going to the unknown, you enter it with the reputation, because then you

have lost half the battle before at this thing, it's not utterly hopeless because still if the position turns into your favour you have to cover and whatever but you must be psychologically ready for the battle that means the moment you have the chance to break free from the known areas and you go out there and you fight, you have to be ready and enthusiastically if you like about facing these unknown challenges"

To listen to this nugget, please go to playtopotential.com. You will find Viswanathan Anand in the Guests Section. Within that you will find the nugget. Understanding the Processor Inside. A piece of random trivia. We have more than 750 nuggets at the podcast so far across 75+ guests. This is the longest nugget by a mile. It is about 25 odd minutes while the average nugget at the podcast is around 5 – 10 minutes. It is just that there was so much gold in it, it didn't make sense to cut it down. Thank you for listening.

End of nugget transcription

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Nugget from Viswanathan Anand that is referenced: Understanding the Processor inside.

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About Deepak Jayaraman

Deepak seeks to unlock the human potential of senior executive's / leadership teams by working with them as an Executive Coach / Sounding Board / Transition Advisor. You can know more about his work here.

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