



Stanford eCorner

Building Beyond Domain Expertise

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Panelists Christina Smolke, Steve Jurvetson, and Astro Teller discuss the importance for individuals and teams to blend process learning, domain expertise, and life experience to create desired impact in the world, in conversation with Stanford Engineering Dean Persis Drell.



Transcript

Where does domain expertise fit into this? Christina, you want to take a shot at that? I would say that I think there is value in domain expertise. And that-- but really what it is is that, from the context of engineering innovation, I believe that you have to have a good understanding of the underlying substrate that you're working with in order to apply and in order to innovate around it. I think the point that's been made, which is also, I would agree with, is that the specifics, what is sort of cutting edge now is going to be obsolete 10 years from now. And so you have to be able to continue to learn. Because if you just think about biology, our models of things 25 years ago, or how I was taught, genetics, is very different than what it would be like in a genetics class now. Just our understanding of that substrate is very different, and the way that we understand it and the way that we interface with it. And so if you want to continue to sort of be at the forefront of a field, you have to be able, you have to have the plasticity to continue to learn and to continue to adapt. And also something that I think is challenging for a lot of people that was sort of highlighted here is being able to move between disciplines, and not necessarily only putting yourself into one box but being able to move fluidly between them. Do you both agree with her? And then I'd summarize, at least in my mind, that I think process learning and process knowledge is going to become more and more important than product knowledge. That could be instantiated in a database.

What do we know about the world? What are the facts of the world? And the process learning, how do we accumulate wisdom? How do we build complex systems? How do I learn over the course of a career? How do I succeed in building a great team? That kind of iterative learning, focusing on the process variables that correlate with success, I think will be increasingly the locus of learning. Interesting. Yeah, I would say maybe, ballpark, 60% percent of the people we hire, we have some domain expertise that we need them to have. If we're building a contact lens, and we need electrochemistry work done, we're not going to hire someone who doesn't have an electrochemical background. That doesn't make any sense. But there are lots of people who have electrochemistry as part of their tool kit. That really is like table stakes even for those jobs. And there are people, some of whom don't actually have electrochemistry as a major and still have that as their expertise. And all told, that's maybe 60% of who we hire. There's a lot of, Sally is amazing.

Let's just get Sally, because we're crazy if we don't have Sally as part of our team. And if that's 40% of everybody and there's some of the other 60% where you kind of didn't learn soccer from the book, you just ended up playing a lot of soccer, whatever, you know how to play soccer at the end of the day, and that's what we need. Great, you're hired. I think people focusing on the domains for any reason other than because you love it is probably not going to get you what you want.