Knowledge Building / Creation in Schools

MS: **[00:00]** Right. This notion, knowledge building knowledge creation, we live with this dilemma. We forever hear, "Ah, it's impossible." We do that already. So it's kind of a schizophrenic world and we thought we'd dive into that schizophrenic world just a little bit.

Basically, the "It's impossible" comes from the fact that schools and knowledge-creating organizations operate in very different ways. Carl and I have spent many years studying the process of expertise and innovation and smart teams, knowledge-creating organizations, with the idea that schools indeed might be able to operate in this mode, but of course, to do that, one needs to understand what—what those operations are like.

And schools were really built to take our cultural heritage and pass it on to the new generation. They weren't built to build new knowledge. But as governments everywhere start shifting the focus to the need for more creativity, more innovation in our citizenry, and the very needs of schools shift to the generation of new knowledge to deal with truly complex problems and global problems, this need becomes more and more important for schools.

So this issue of schools, I think a classic issue in the literature is, what we do is we tend to add things onto the schools, whereas Sir Ken Robinson is talking about shifting to a warp engine; a systemic change is really what the nature of the change that we're after. I think one of the things then that on the other side makes us feel, "Oh, we're doing that already," is that if we take inquiry and projects, these I think are becoming much more pervasive now, and they take a space between how schools operate and knowledge-creating organizations.

The challenge is we get back to the impossible when we think about what happens with inquiry, what happens with natural curiosity, things in which I think you know the book *Natural Curiosity* and the books on inquiry. Powerful, marvelous, incredibly important works. But for knowledge-creating organizations, if you think about how they really work, the natural curiosity, the inquiry, and projects really end up being the easy part.

The hard part, if you watch what it takes to operate in a knowledge-creating organization, is the sustained creative work with ideas. Long periods of time when you feel you're making no progress. You're stuck. Your teammates are discouraged. Other people aren't interested. You've got to live through those times. You've got to, harder yet, as a team. Not the teacher, because in fact, knowledge-creating organizations can't always have the leader, because if somebody can always lead us, we won't be creating new knowledge. So the energy literally needs to reside in the community. I've got to, for my peers, say, "Oh, I don't think we're getting anywhere. How do we get resta—started? Nobody seems even to be interested." So that energy must reside in the community.

To do that, one of the fundamental things that knowledge-creating organizations do is they create public knowledge. There's this difference between, "I am doing better if knowledge is in my head." That's been the traditional effort of education and testing, is to find out whether I have a particular idea, in fact, a mature idea in my head. This is saying, "I not only have to get an idea, but place it in a public space." That is, it's only

when ideas are beyond individuals, that other people can build on, that you become a knowledge-creating organization. So a public place for ideas, and then collective responsibility so that the students become the energy of the enterprise that is moving the work forward.

Now, this notion of why in the world would we want to do something this hard, and I mean, the one issue is is it is possible, and I'll get to that, but the other issue is, well, why? Maybe this isn't what schools should be about. Maybe this is what knowledge-creating organizations should be about, and schools should be getting students ready to move into those organizations, but they needn't operate the way those organizations actually work.

Well, **[05:00]** we've had the good fortune of teachers that we have been working with and institutions we've been working with to see what happens when actually the school itself operates, or the classroom operates, as a knowledge-creating organization, and here are some of the benefits.

I won't go through all of them, but I do want to stress that this problem about schools being isolated from the real work world, that piece goes away. The students are taking on truly high level responsibility. They actually are—become the sustaining force, and I'll get to this a bit more in assessment. I'm jumping all the way down to the last point. That if we could get a coherent pro—approach where it's not, "Oh, first you get literacy and numeracy. First you get the basics, then after you have the basics you get to higher order skills, or after the basics you get to do the demanding work of society, or you get to work in complex problems."

This is saying what if you took those right into the classroom from the very beginning so people became literate, became numerate from working on meaningful, complex problems, and that was possible from day one of school? Could you get literacy, numeracy, 21st century competencies, and innovation in a coherent approach? That's what we're trying for.

Again, I'm just flashing these results. It would take me a long time to tell you the research studies, but we have been doing quite a bit of research in these various enterprises. They're scattered across the world and it's very, very hard to try to take these bits and pieces of different people doing things and identify the full context. But I do want to say we do have results that span these kinds of results, so we're optimistic and we're really excited about this opportunity to work more closely here in Ontario so that we can try to come up with a more substantial effort to identify just how broadly spread these results could be.

Now I just want to give you so—one part of the nature of the shift we're talking about and why it—it does indeed seem rather radical to many people. Schools are pretty much built so that we have our curriculum experts, our subject matter experts, our assessment and our new standard experts, and they set the curriculum. The teachers then take that curriculum, they translate it into the tasks that the students will be engaged in. Those tasks then are given to the students, and we test the students to see how well they're doing, and if each student does well on the test we say, "Ah, yes, those ideas are in the—in the minds of those students, so our enterprise was successful."

Now the problem with this is from a student's point of view, school is about doing well on those tasks. They don't know that whole big structure. They don't know the meaning behind the tasks. They can't change the tasks. They can't, as knowledge-creating organizations, operate, deal with emergent goals. That is, they have no power to change the goal of the task. They're to do well on the task. So from their point of view, school's about tasks. We get projects. We get larger constellations of activities. But still, the thing that holds the enterprise together is these tasks and activities.

If you shift to knowledge, a—sorry. Refer to that as the TOMAGS view of the curriculum. The Copernican revolution approach to the curriculum is that ideas take centre stage; the students' ideas take centre stage. And that creates really interesting tensions because if you takes [sic] kids' ideas really seriously, sometimes they don't go where you wanted them to go, and sometimes it takes longer. And I think one of the things that you'll find invaluable in talking with the teachers is they know that tension well. They know how that negotiation needs to be done.

But I want to make clear: activities and tasks are part of all of our lives all of the time, so putting ideas at the centre isn't to preclude that there are tasks and activities and we do need to do well and responsibly in society, but it's a **[10:00]** very different force.

I want to zoom you into—now I'm a bit into the technology, but I want to try to make sense of what it means for ideas to have a public life, because in knowledge-creating organizations, getting your ideas out there, having teams be able to go to work on those ideas, experiencing those ideas as growing, having somebody take your idea and put it in a new context, these are empowering and they cease to make you feel like, "I've got to have the right idea." They put ideas on a trajectory to growth, and that's the growth that's important.

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