Quick Takes
A PODCAST BY PHYSICIANS FOR PHYSICIANS
HOSTED BY DR. DAVID GRATZER

September 25, 2019

Double Take #6: Ivan Silver on technology and education

David Gratzer: We're joined now by Dr. Ivan Silver, who's a professor at the University of Toronto in the Department of Psychiatry, somebody who's had a life-long interest in professional development, and a former vice president of Education here at CAMH. Welcome, Dr. Silver.

Ivan Silver: Thank you for inviting me.

David Gratzer: Dr. Silver, we're talking about how education, particularly medical education, has been reshaped by technology. What are your thoughts?

Ivan Silver: Well, I think it's good to have a framework to think about – where technology actually fits into adult learning. And the most current way of thinking about what we'd like adults to be able to do, as doctors or students who are going to become doctors, is to really be able to efficiently learn on their own, or something we call self-determined learning. And this is covered by a new term, it's maybe not so new, but it was new to me a couple of years, ago called heutagogy, which is the 2019 version of what pedagogy was to adult educators 60 years ago. So it's really about the science of self-determined learning: being able to learn on your own; being self-directed; being creative; being able to recognize your own limits; being able to recognize when you don't know something, and be able to do something about it; be able to recognize the surprises that occur. I believe that technology is helping to enable that for students and practitioners to be effective learners, because with technology, there are so many new opportunities to learn that are not determined by your reliance on a teacher, or a face-to-face contact.

Ivan Silver: So putting it in that context right at the start helps me explain the details, because I think technology is really an enabler of adult learning as we see it today. We don't need to be face-to-face. We can be present with a facilitator, or teacher, or coach, synchronously or asynchronously. We can do it on our own time. We can engage learners around the world, both synchronously or asynchronously. All of these things we take for granted now. But in my lifetime, and my career in medical education, I've seen us go from almost zero to to the point we're at now. And it's quite it's quite incredible how we can prepare learners for face-to-face contact through things like the flipped classroom. Through all the technologies that are available from desktops to laptops to mobile technology. We've democratized education through technology. Take, for example, the MOOC, the sending education out to whoever needs to receive it, even if they can't pay for it, as a stepping stone for them to begin their education.

David Gratzer: Lots to think about what you've just said. But maybe we'll start here. You mentioned with your career, and your own education, going from zero. What was the first big change you think you noticed in education, in terms of use of technology?

Ivan Silver: Well, I noticed in my first year at McGill as a science student. I'd come from a little town in New Brunswick where everything might have been five to 10 years behind. But even so, I'd never seen video-based lectures before. I walked into the into the room with twelve hundred other people and a technician turns on a

series of televisions and suddenly the lecture has begun. It goes on for an hour and a technician turns it off and we all leave. And for the entire semester I never saw the professor face-to-face. When it began it was the era of the theory of 'education as transmission.' All you had to do is turn on a video, leave the room, and of course good things would happen. Information would be transmitted into your brain and it would be just as good as being there, and being there to answer questions, which, of course, were absent. When video was first introduced in the university…¶.

David Gratzer: Education happened to people.

Ivan Silver: That's right!

David Gratzer: They weren't active in any way, shape, or form.

Ivan Silver: Right. So I had the privilege, and many people of my vintage had the privilege, of engaging with Richard Tiberius, who was an education doctor assigned to the department of psychiatry. He wrote some very good papers about the shifting of education from the transmission theory to the person-engagement. The education as learning through relationships and through people. And I think technology, when it's used properly, can do that just as well. And, in fact, should be seen as a synergy with the face-to-face as each embellishing the other.

David Gratzer: You spoken enthusiastically about technology. What are some things that you see are really improving with better use of technology in terms of medical education?

Ivan Silver: I talked about the democratization. I think that's still in development. I think the MOOC is kind of a primitive form of that, and my sense is that MOOCs are dying. That it was very popular five or 10 years ago, and many of them have not, or cannot, be sustained even from a financial point of view. I think, on the other hand, when you're living fifteen hundred kilometers in Canada away from the source of information, or the opportunity to engage with other learners, and you have no opportunity, if you're a busy doctor in practice, to leave your practice, but you can engage online, that's a wonderful development. That's another example of democracy at work, just in time learning, so that 24/7 you can decide what you learn, how you learn. Whether people take advantage of it is another matter. Sometimes you can accommodate to the comfort of it just being there, but never using it. That's another issue. I think through technology use there are more opportunities for people who know things, who are trying to help enable others to know what they know, there's more opportunities for that to happen through technology – virtually, asynchronously, synchronously. Just the simple fact, in practice, when you're in a clinic, that your questions can be answered immediately if you're going to the right site. That's a pretty amazing thing compared to when I first went into practice.

David Gratzer: When you went to the library, perhaps, to ask the librarian for help?

Ivan Silver: Many, many hours in the library. And I still use the library, but now I've created my own digital library of evidence-based practice. I have, maybe, three hundred folders that this new information goes into. I actually read all the articles before I file them. I also have this wonderful digital file for access by the residents who train with me. In the olden days, I had five file cabinets full of these articles and many depressing days of trying to keep those up to date and throwing papers out, adding papers in, and then having to cart them around with me from job to job. And now it's all digital. It's all in folders. I can access it anywhere in the world. It's a wonderful feeling. It's almost like a transitional object that you can carry around with you all the time. So if you don't know the answer to something, you know it's pretty close to you, if you know where to look. I'm not sure we're there yet, in psychiatry, in having that kind of useful information to make it really "just for me learning." I think "just in time" is here, but "just for me" I don't think has arrived yet.

David Gratzer: In part because we don't have the real time data to build on. You've spoken enthusiastically about how medical education has changed with technology, and how it will change with technology, but what have we lost?

Ivan Silver: That's a difficult question because I'm not sure we have the evidence of whether we've lost anything. I think it very much is based on how technology is used. But there's the danger, of course, of losing the humanity in medicine if a technology is abused, or if it's not combined in some way with real person contact. Through technology you can engage others together in learning. You can, I think, have an even more intense relationship, practically speaking, with your facilitator or your teacher because of the tools that you have available to stay in touch. I just came from a medical education meeting in Vienna last week, and although I didn't have an opportunity to meet them before, what we created in a workshop has turned into a whole other kind of conversation leading to a couple of research projects with people I never met before from eight different countries. This never would have been possible ‚Äì it just never would have happened ‚Äì without technology.

David Gratzer: Thinking about tomorrow. What do you think are some future applications of technology in medical education?

Ivan Silver: When I mentioned that term heutagogy, I'm not sure we are doing the best job of preparing learners to use technology going forward. And we don't know what technologies are going to be available in the future, but even the ones that we have available now, I don't think we have determined what a lifelong learning curriculum looks like for students or residents. I think some work needs to be done to create that curriculum, to make it explicit that learning about learning is actually a part of all residency programs, no matter what the specialty. So the goal here is really to create capable learners. And I think technology has a huge part in this. In addition to being able to determine what competencies need to be updated, being able to identify new ones, being able to identify your gaps in learning, a lot of this can be aided through technology. I mentioned this already, but the "just for me" framework, I think needs needs work. So occasionally we get a pop-up to say that some medication we've prescribed distance doesn't fit with other medications. That we should think about that before we finish the prescription, but that's about it. What we don't get are pop-ups with suggestions around evidence based articles that go with this. And it's not just for the individual, it's for the whole health care team.

Ivan Silver: Another aspect that is just beginning to get some attention is the impact of technology on the future of the earth. In other words, the relationship of technology to greenhouse gases. So when I was over in Vienna, I was told that to get there from Toronto, I had used one and a half tons of greenhouse gases going and coming – just for me – and there were 4,000 learners at this conference. And nearly all of us had come on a long plane trip, some longer than mine. And is this going to be sustainable as a way of learning? So, where will technology fit into the future of conferences? Certainly, I don't think we can sustain air travel the way we have if we're going to reduce CO2 emissions. What I'm imagining might be more immersive than actually being there. Because what's worse than sitting in a room with 4,000 people, so far away you can't actually physically can't see the person, you're only seeing them on the video screen? So, I'm imagining something that actually might take us further. And I think the technology, from a cost point of view, wouldn't be as much as bringing all those people, and it wouldn't have the same impact on the Earth. And I think we're going to need to start to think like that.

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