

Deep Learning in a Digital World

Michael Fullan Deep Learning Engages Disaffected Students

MICHAEL: We have this I'll say giant experiment under way which has seven countries involved in it up to this point. Australia, Canada, Finland, Netherlands, New Zealand, Uruguay, and United States--California and a couple of other places and we're about to add the other three Scandinavian countries: Denmark, Norway, and Sweden. And the way we've set it up, we have a framework to do it. We have tools, and support, and focus for the six Cs that I talked about and so we do have an apparatus to guide people but basically we've invited people, we said come into this if this is a direction you're going in or wanting to go in anyways. Don't come into it to implement our program. Come into it so you can make further development and share it among you. So it's a living laboratory if you like. And this then has taken off and the energy is coming towards us this way.

And then began to say not only what's happening here but what are some of the big issues? and one of the issues that I think is incredibly important and will very probably represent a breakthrough is what I call the equity hypothesis and the countries as everyone knows are concerned about improving excellence but also echoing the gap between those that are doing well and aren't so well. And if you look at those two together and the OECD results you'll see in the quadrants that some countries have some degrees of excellence but very big gaps of equity, United States is one of them, England is another. In other countries they have less of a gap and they're moving up in the excellence side, and that's Scandinavian countries and Netherlands, New Zealand, Canada's certainly in there, but it's still not enough. There's still a big gap even in the best of cases there's a gap.

So now we come to deep learning and at first people said well deep learning, this is so far advances it's going to help those students that are already farther along. It's going to create a greater gap. And I was I guess I'll say agnostic about that at the beginning like I don't know, let's look at it. then we began to see that students that were most disaffected from traditional schooling were the ones that got most passionate and had the furthest to go to get engaged and so I began to be very interested in the potential of this because in the U.S. right now the equity and the gap in Ontario for that matter equity is a big priority and we're worried about sub groups and the lack of development in that respect.

So when you then--I call it the hypothesis even though we have evidence for it and actually think of it this way when students weren't relating to the academic program some students then what often happened is it's called dumbing down the curriculum.

Teachers made it easier so students could cope, but they weren't doing the students any favor because they were learning something that was too low level. Now we have the bigger question and we have seen it very clearly that students that were most disaffected are really becoming passionate for the first time about learning, very first time for them.

And so once you formulate that and you notice it you say "well, how can we cause more of it?" so you could take the path of least resistance with deep learning, let's say high school, or grade 12 English academic oriented, they love to study more deeply critical thinking. So they do that path of least resistance. But let's take grade 9 French where the students, they've studied vocabulary, they hate the language 'cause they're not learning anything, but let's say you make French more dynamic through deep learning then the students who are struggling all of a sudden before long as almost articulate in French.

We know about assistive technologies which technology that allow special education student's disabilities, for us to access them, for them to access the world and be part of interaction. So essential for some, good for all is the way we think of not only this technology but deep learning. So they're benefitting tremendously not only in themselves but interaction with other students and other adults. Immigrants whether it's English as a second language or cultural issues now can be integrated, and be part of it, and move faster when they come here. Large numbers of Syrian refugees as we know, whatever the population is, the chances of them in Canada connecting faster because of this deep learning, and the relevance of it, and the issues that are done much greater. And the one that's untouched I think in some ways and that we're very interested in now in terms of what's next is First Nations, Metis, Inuit.

We know that the Federal Government, Justin Trudeau and others have set this as a big priority now. We know that it's a Federal responsibility for those FNMI on reserves and it's a provincial responsibility for those that are in a provincial system. So it's pretty complex actually even though there's a fair amount of money willing to be invested in it. But think of it this way as we look at it. The values of FNMI cultures, valuing the environment, improving the environment, being more authentic about relationships, these are all deep learning values and Native populations already have them. They're ahead of us in respect, or to put it another way, the compatibility of the values in deep learning, and the values in FNMI is very strong.

So if we can get the pedagogy equation in that which is very hard to do because the pedagogy, the turnover of teachers, and principals and others in FNMI communities is enormously unstable, so there's problems there. But the potential because of the

congruence between those values and the ability of native populations to as some of them say "walk in both worlds" the indigenous world and the developed world, and to have that rapport is very--I can see it now. And so I'm thinking another version of the equity hypothesis is to see education--the role of education--flourish in FNMI populations in Canada.