



SECTION I

**Engage the World
Change the World**

“ Nothing worth learning
can be taught. ”

—OSCAR WILDE

Chapter 1

THE NEED FOR AND ATTRACTION OF DEEP LEARNING

Relevance Unfound

Big change is always a function of push and pull with the latter being the more powerful of the two forces. Perhaps the greatest internal push factor in traditional schooling is that it is not engaging to say the least. Lee Jenkins (2013) is one of many researchers who has examined the percentage of students who are engaged in their classrooms from kindergarten to Grade 12. He, like others, found that in kindergarten and the early grades about 95% of students are engaged followed by an ever-increasing decline to about 39% by the time students reach Grade 11. Other studies, whether from the perspective of the student or teacher, report similar declines. It has also been found that many of those who are participating are often in it for the grades, not out of interest. Gallup Poll (2016) reported that at least a third of students are “actively disengaged” and that students in Grade 11, for example, are substantially less connected to learning than Grade 5 students. All this is not so much a criticism as it is a confirmation that schooling as it was set up 150 years ago is no longer suited for the present times.

Another push factor making schooling seem less relevant is that the future job market is not only unpredictable but also in decline as the rise of robots takes its toll on the number of jobs that will be available. Compared to many of us who went through school to ensure a good future—not itself an intrinsic motivator, but it would do—the current generation has a hard time imagining the pathway to a desirable future. All this is further reinforced for students from poverty or minorities who feel a growing sense of hopelessness, because they find little sense of belonging in an institution that seems both irrelevant and uncaring.

We can draw a blunt conclusion. There is no reason for the majority of students to take conventional schooling seriously. There are many roadside attractions and other diversions that provide an alternative draw for

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students: drugs, the digital world, doing nothing. The easiest pathways are the ones of least resistance and instant relief, if not gratification. One of our favorite change concepts is *freedom from* versus *freedom to* (Fullan, 2015). Humans work hard to get away from something that is oppressive whether it be constraints or boredom. But they are less good at deciding what to do with any newfound freedom. In fact, the evidence is that they are vulnerable to getting into the wrong endeavor or crowd. Eric Fromm (1941, 1969), the renowned social psychologist and psychoanalyst, argued that humans find pure freedom uncomfortable and lonely, therefore are prone “either to escape from the burden of freedom into new dependencies and submission, or to advance to the full realization of positive freedom” (p. x). Apparently, advancing to realization is not so easy. So the tendency in a vacuum is to stay isolated and deteriorate or to join the wrong group. Under these conditions it takes an especially powerful pull to draw people to worthwhile endeavors. Shortly, we make the case that deep learning is such a force.

But there are other things to worry about, and they are getting worse. There is conflict in the world. It is probably not greater than at other times in history, but it is more instantly visible and reactions are more lethal and scary in our globally connected world. We say that the big picture (where is the big world going?) and the small picture (where do I fit in?) are fusing. They are now on the same page. Even 8-year-olds and younger feel the anxiety on a daily basis. These days, because the world is so volatile and transparent, anxiety starts earlier for more kids, is prolonged for increasing numbers, and as such literally damages the brain. At the same time, access to information is exploding and immediate. Sometimes, none of the alternatives make sense: escape ostrich-like has little attraction, and knowing how to fight back or even what to fight remains mysterious. Our book is meant to help those who are willing to undertake the journey into a promising, but in many ways unknown territory. In such cases, being a good learner is the ultimate freedom.

Finally, there is another rapidly growing destructive trend, namely greater inequality in cities. Richard Florida (2017) documents, in careful detail, trends in the United States that place greater numbers of the poor “trapped in persistent poverty. . . . By 2014, 14 million Americans lived in concentrated poverty in extremely poor neighborhoods—the highest figure ever recorded and twice as many as in 2000” (p. 98).

In the course of this book, we explore the role that deep learning might play in helping reverse the deadening effects of persistent poverty, and in the last chapter we link deep learning to other policy solutions. The basic point is that from a societal perspective, and from a human vantage point, the conditions are absolutely right for a powerful, positive, compelling solution. That solution, ready to be made, is deep learning. Why do we say so, and what is deep learning in this context?

The Allure of Deep Learning

We describe here the essence of deep learning with the details of our model, along with plenty of examples, taken up in Chapter 2. What gives humans meaning in life is a strong sense of *identity* around a purpose or passion, *creativity and mastery* in relation to a valued pursuit, and *connectedness* with the world and others (for a similar list, see Mehta & Fine, 2015). The key question is not only how does one obtain this triple fulfillment, but also how do scores of people do so, especially those around us? One piece of good news is that it is easier for many people to accomplish this than it is for one of us at a time to do so, due to the power of contagion and mutual help. When we began the deep learning journey in 2014, we thought it was a compelling idea, but we did not even pose the question “Does everyone have the potential to find purpose, skill, and connection?” In implementing deep learning in scores of settings, we began to see that under the right conditions immersive learning reaches everyone. It was this realization that led us to the “equity hypothesis” referred to above: *Deep learning is good for all but is especially effective for those most disconnected from schooling.*

To illustrate (more examples to come in subsequent chapters), let’s take three examples from our work: one, a male elementary student who was disconnected from school; two, a female student who was part of a group that decided to study sustainability in Sweden; and three, a male student who found school unchallenging until the learning became relevant. All three cases are reported by the students’ teachers.

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Disconnected Student

Alex, Elementary Student; Ontario, Canada

This experience is shared from the perspective of a Grade One male student, Alex. Alex came to school in September with great anxiety and low self-esteem due to seeing himself as being different from everyone else because he stutters. He would rarely participate or join group tasks because of his fear of stuttering and how he would be perceived by his peers. He seemed convinced no one would want to listen to him, and he was definitely not willing to take the risk.

Early in October, our class began collaborating with a group of high school students with a diverse set of needs. Since we were not located near the high school, most of the collaboration occurred using Google Apps for Education including Google Hangouts, Google Docs, and Google Slides. As Alex became familiar with leveraging technology and as collaboration grew, so did he. I think he became so engaged in the deep learning process—solving real-world problems with his team, having the opportunity to contribute to his

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own learning through research, and sharing out his ideas in new ways, as well as having his ideas validated by not only his peers but also high school students—that the risk-taking and speaking just naturally evolved as part of the process. It was beautiful to watch! And that was Grade One.

The following year in Grade Two, Alex spoke before our school Board of Trustees to discuss his learning experiences. Here is a quote from his speech:

I still remember when I didn't talk that much. I never would have thought I could be a public speaker!! So how did this happen? Grade One, that's how.

He went on to share even more about deep learning:

I was excited with the learning that was happening in my class. I had choice in my learning. I got to learn with technology and that's the way my brain works. Most importantly for me, collaboration was expected and happened every day. Collaboration is important to me because my ideas get bigger when I share with other people and then my brain gets bigger.

Now, Alex is in Grade Three, and there is no stopping him! Our school gathered as a community of learners to celebrate math and share best practices with parents. Alex was leading the Math Talk portion of the workshops. He was encouraging parents to collaborate, to participate and validating the ideas of everyone. If I had not been there that September morning to witness this child previously so full of anxiety, so fearful to speak and unable to take risks, I would never believe it could possibly be the same student I now know today.

6Cs Go to Sweden

Mara, Middle School Student; Ottawa, Canada

Mara is in a middle school that calls itself a “6Cs school” (6Cs: character, citizenship, collaboration, communication, creativity, and critical thinking). As part of a school initiative, a group of 13-year-old students with their principal and teachers planned to visit and study sustainability in Sweden. The following is an excerpt from Mara, a student who very creatively submitted a suitcase filled with travel documents including a boarding pass and a list of things to remember as her application for one of 12 spots on the trip. She also included her narrative, which speaks of the importance of the 6Cs:

What some people may not know is that the 6Cs aren't just words and posters around the school. They are part of our lifestyle

whether we realize it or not. To some people those words (the 6Cs) may not mean anything special but at [our school] it is a highly incorporated part of our school life and our community. I know that I use the 6Cs at home with my family and when I interact with the world around me.

Some things I hope to accomplish is to compare school life between our school and the Swedish school, create memories with school mates and teachers, take back helpful tips to improve our community based on what I've learned, and perhaps introduce the 6Cs to my Swedish housemate.

Disengaged Student

Christopher, Student; Ontario, Canada

At the beginning of the school year, Christopher was unenthused, and it seemed like he was counting down the time to recess, lunch, and finally, dismissal. He was one of the kids on my radar, and I was starting to get worried that his mindset would start to have an effect on his academic progress in his Grade Four year.

In our French Immersion class this year, we started off with a simple question that a student shared: "Can kids make a difference in the world?" As a teacher, little did I know how far this question would end up taking us on a yearlong deep learning journey that embedded traits of social entrepreneurialism and citizenship. When we started talking about how to enact change and truly make a difference in one's life, Christopher was absolutely beaming. His hand was always firing up, and his ideas were truly innovative. There was no stopping him, really, and his passion extended far beyond the four walls of the classroom.

With the help of a business partner from The Bank of Montreal, students were tasked with creating their own business with the goal of selling either a product or a service to a target market in the community. When students were tasked with coming up with ideas on what to do, it was Christopher who took on a leadership role and started positively collaborating with students in the classroom to brainstorm the perfect idea that would sell so that we could make lots of money for cancer research. We ended up having a Dragon's Den to persuasively pitch our products and services to the class, and it was Christopher's group that won the pitch! Their idea was to design and sell customized silicone bracelets to our school community.

Beyond our business, we came across and nurtured many different learning partnerships that continue to inspire students to this day. Without Christopher, many of these partnerships may not have been uprooted. It

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was Christopher who mentioned that we should know more about where our every dollar is going regarding cancer research, and with that idea, students decided that they wanted to have a Google Hangout with The Terry Fox Foundation (the cancer foundation we were supporting) to get answers to some of their questions.

It was Christopher's high energy and enthusiasm that kept this venture running from October 2016 to June of 2017. There was not one day after we started this journey that he wouldn't ask to stay in during recess to work on anything related to the project (marketing, communications, awareness, finances, etc.). His heart and spirit were truly vested in the work we were doing. His attitude toward school changed, and his eagerness to continue making change in the world inspired even more students in the school to create their own business to support a worthwhile cause.

I can wholeheartedly say that this venture opened up Christopher's eyes in ways that were unimaginable to me from the start of the year. So many of the global competencies were uprooted through Christopher's work, and as an educator, his zest for real-world change inspired me to allow students to take the helm with their learning and pave their own pathways. When the students have a voice, it can drive any project you work on in directions that were unimaginable from the start.

Of course, one could always find individual students, such as those just mentioned, in this or that school working with outstanding teachers, but our book is about scores of students in systems of schools whereby leaders at schools, districts, municipalities, and even whole countries decide to implement deep learning across the system. Is it possible for virtually all students to flourish through deep learning? From our work with thousands of students and educators, we think that it is not only possible but also essential to the future of the world.

Most often when students or groups of students persistently show no interest in learning, we write them off as incapable or unteachable. We might give them remedial work that ends up adding insult to injury where boredom becomes tedium or other forms of punishment where the distance to connection becomes even greater. Our work is beginning to prove that *every child is a hidden figure* (a metaphor based on the movie of the same name where a group of behind-the-scenes black women with special math abilities played a critical part in saving a NASA space mission and building the space agency's successful future).

Students alienated from present society are the most distant from learning, but all students in today's world need to figure out where they fit in a complex global society. Many of these children and teenagers are truly hidden as street kids, foster children, and otherwise outside of mainstream

society. Beyond this, each and every student, no matter how advantaged, will at some point find herself or himself at sea in today's turmoil. Every individual to some extent is a mystery to herself or himself, to each other, and to the universe. The role of education is to help individuals come out of their private shells or personal hells in ways that address obstacles.

Preliminary data show that the trajectory of alienation for poor and rich kids alike could be very different. Put a young person in a stagnant situation or one demanding irrelevant activities, and they will appear unreachable. But put them in a deep learning environment, and these same young people will be ready to change the world. We know because we have seen it time and time again.

Deep Learning:

- Increases self and others' expectations for more learning and achievement by providing a process
- Increases student engagement in the learning through personalization and ownership
- Connects students to the "real world," which is often more reflective of their own reality and cultural identity, which can be particularly important for students from other cultures
- Resonates with spiritual values that link to vast numbers of the population whether secular or religious
- Builds skills, knowledge, self-confidence, and self-efficacy through inquiry
- Builds new relationships with and between the learner, their family, their communities, and their teachers
- Deepens human desire to connect with others to do good

The Challenge

The challenge is enormous, but we offer a way forward, which is essentially: *go deep or go home*. And *be pervasive (system minded) or stand aside*. It will be incredibly difficult to make system headway, but we can only say that a number of ingredients for system success are emerging, and that given the growing crises in the world, there is no other viable game in town. It is for these and other reasons that deep learning is taking hold in New Pedagogies for Deep Learning schools. Once educators, students, and their families experience the excitement and learning potential of deep learning, they become more committed, and as they interact with others, the contagion factor sets in. Over 3 years we have seen a growing uptake from

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500 to 1,200 schools in seven countries. Uruguay went from 100 to 400 schools, Finland from 100 to over 200, and three large districts in Ontario went from 10% to 100% of their schools. In other cases, some districts or groups did not expand as rapidly. Thus, we are not saying that deep learning represents an automatic pathway to transformation. There are many forces that reinforce the status quo and that rein in innovations once they get started. But at the end of the day, our experience is that deep learning is a natural momentum maker if the key pieces are put in place and cultivated.

If all children can learn, can all teachers learn? Are the incredible and rapid developments in the neuroscience of learning a game changer for us all, including those most damaged? Was Paulo Freire (1974) right in concluding that humankind's ultimate vocation in times of transition is to engage the world to change the world (this as noted is a fundamental deep learning proposition)? Can partnering with young people from babies onward unleash the masses we need to upend the status quo, since young people not only have no allegiance to the status quo, but also positively can be impassioned to “help humanity”?

The goal is to make deep learning a momentum maker. In social movements, people are attracted to *new ideas* that embody treasured values and promise new *outcomes and impact*. It is the ideas more than particular leaders that mobilize people. Make deep learning the positive pull factor of the decade—people are ready for it, even if they don't know so until they experience it.

In the next two chapters, we establish some of the basics of deep learning in action.

