Metaphorically speaking:
How metaphors shape and misshape discourse

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There is perhaps nothing that influences the development of societies more than the ideologies and currents of thought that are championed and popularized within their populations. Throughout history, currents of thoughts have brought down empires once stable and strong. The ideas of the Enlightenment led the French to question the legitimacy and authority of their monarchs and bring about the French Revolution (Cranston, 1989). It was a victory of ideology, rather than a military victory, that brought the fall of the Soviet Union in the 20th century, ending the Cold War. Ideas and, more specifically, the language used to promote those ideas play a crucial role in influencing the way we think about our world and the way our communities develop. They influence our ideas of the future and the efforts into which our political systems will focus their resources and funding (van Dijk, 2003). Ideas are promoted in a variety of fashions, but a most effective form of popularizing them is for a set of complex ideas to dilute into a single motto, analogy, or metaphor; preferably something short and simple. These metaphors, though they can be criticized for simplifying complex matters, nevertheless have the power to influence large numbers of people, especially when they are oft repeated. It is a very effective tool on the political landscape and is just as effective when applied to education. However, language is tricky business, and can often lead to the distilling of a nuanced literature, a breakdown in understanding and the promotion of false concepts (Howard-Jones, 2014).

Education as the kindling of a flame

Metaphors for teaching have existed since there have been educators to reflect upon and write about the nature of their work. One of the most famous metaphors regarding education is one that is at times attributed to Socrates and at times attributed to W.B. Yeats, but most

probably originated from the works of Plutarch. There are different versions, but the most well known analogy states *"education is the kindling of a flame, not the filling of a vessel"* (Jowett, 1892). This comes millennia before peer-reviewed research was conducted showing the positive impact of motivation and student engagement on learning. As university researchers reflected on the state of education, gathering and analyzing data from learners, they began to confirm this ancient metaphor. Anna Sfard, writes of the "acquisition metaphor", used to describe the successful transmission of knowledge from teacher to pupil. She compares this process to the "filling of a container". It involves the transmission of concepts, knowledge, and information, running from one point and being received at another. Sfard then points to the danger of ignoring other metaphors when thinking about education. She presents the "participation metaphor", an idea that is not meant to completely replace "acquisition" but rather, to compliment and work alongside it. Sfard argues that participation is an equally, if not greater form of learning, and that a healthy, supportive community can do wonders for intrinsically motivating a learner (Sfard, 1998). Recent research in student motivation backs up her claims. A 2014 study found that self-determined, intrinsically motivated, learners outperformed peers who were working only towards extrinsic rewards (Stirling, 2014). The real challenge for administrators and educators, at all levels, would be to create the conditions for a safe, vibrant, and exciting community that would promote intrinsic motivation, providing "kindling to the flame" (Dunleavy, 2008).

This duality between acquisition and participation, filling of the vessel vs. kindling of the flame, comes up again and again in the literature of education metaphors. It presents itself in the seemingly endless battle between the quantitative and qualitative approach. The quantitative is seeking accurate results, analyzing measurable data in order to observe the status of education and provide solutions for the obstacles that exist within the field. However, the quest for the

quantitative "objectives metaphor" is one that can create just as many problems as it solves (Jensen, 2006). Lawton (1984) claims that the efforts supporting the "objectives metaphor" will amount to *"converting education into a closed process rather than an open-ended experience."* And that *"curricula tend to become rigid and geared to measurement rather than development."* The quest for that which is measurable brings about the culture of standardization that is now being criticized for being a failure. In pursuit of positive scores, with which they will be judged along with their pupils, educators begin to tailor their process to the curriculum imposed by the state examination. They begin teaching to the test, sacrificing valuable time that could be spent on developing higher-order thinking skills, and instead spending more time on familiarizing pupils with testing procedures, devoting entire periods to mock exams (Volante, 2004). As Sfard suggests, perhaps it is not about picking one and completely disregarding the other. There must be a way to measure and identify a learner's weaknesses and strengths while allowing the learning environment to be a place where exploration of new ideas is encouraged and promoted (Sfard, 1998).

School as factory

Although it had been criticized by many educators, such as Dewey, Callahan, and Lawton, in the 20th century, the metaphor of "school as factory" was revitalized and again criticized in Sir Ken Robinson's now viral Ted Talk "Changing Education Paradigms". His presentation argues that policymakers in education have structured their schools in an outdated fashion that very much resembles practices inspired by and preparing for the industrial revolution. He claims this is a structure that not only leaves many students behind if they do not fit the assembly line's rigid structure but also leaves them ill-prepared for the modern world of work because the school system cannot possibly imagine what skills will be useful to young

learners in the 21st century (Robinson, 2008). Although Robinson was not the first to point out this analogy, he did spark quite the conversation as the talk surpassed 40 million views online. Students, researchers, and bloggers in the field of education responded with their own their thoughts on the matter, offering up solutions to revolutionize and reform the public education system in the West as well as rebuttals to Robinson's line of reasoning. The metaphor of school as factory conjures up very powerful images of students on conveyor belts, as products manufactured, which in turn, evokes an emotional reaction from the public. Larry Cuban, professor of education at Stanford University, writes that the metaphor has survived because it serves the interests of both the champion and the critic. For those who value a growing economy, fashioning young learners to enter into that economy and contribute to it might seem to be the most beneficial and cost-effective effort. In this case, the factory model is seen in a positive light. For the critics, however, the metaphor also works because it does well at painting a portrait of education as industry, soul-less and monotonous, stripping young learners of their individuality and creativity (Cuban, 2014).

The metaphors of market have had a profound effect on public education systems worldwide. In the United States, the efforts of public policy to make all schools effective and accountable have lead to a system of standardization that is only now being seen as a massive failure. The language of business has permeated into a social program. A.V. Kelly, in his book, "The Curriculum", criticizes this trend, calling it a "Thatcherism", claiming that its ultimate goal is "to make every social institution into a commercial enterprise" (Kelly, 2009). Ideology will not only influence public opinion but will also drive public policy. Neoliberal ideology seeks a return on investment. For education, this metaphor of market brings austerity and rapidly fading resources into the halls of young learners (Watters, 2015). Quebec has not been spared this

metaphor. In the desire to reduce the province's bloated debt, the Liberal Party of Quebec is asking Quebec teachers to do more work, with less resources and virtually no increase in pay. This business metaphor, is perhaps the most disastrous for the quality of education, as it serves something other than those who will be on the receiving end of austerity the students. If education is not something that serves students, whom does it serve?

Alison Cook-Sather, in a journal article entitled *Movements of the Mind*, applies the analogy of *The Matrix* to "education as social control". Cook-Sather (2003) is interested in asking who the educational curriculum ultimately benefits. Does the system ultimately seek to benefit the learner? If not the learner, then whom? She compares the masses of students being educated to the fate of humanity in *The Matrix*, enslaved in a false reality, and being farmed to meet the energy needs of their robotic overlords. In this sense, Cook-Sather is asking her reader to reconsider whom the education system really benefits. It is grooming the young members of its society to buy into a specific narrative and schema, to come out of the academic experience with the same values and goals that the architects of the curriculum have accepted. The school system acts as a sort of prison, leaving learners with no other option but to accept the rules of their authority figures. Very much like in *The Matrix*, those who question why they are receiving training and seek alternatives to the rules imposed, are punished and if all else fails, removed from the system altogether (Cook-Sather, 2003). Public education goes beyond the production of future workers that will help the economy grow, striving to produce obedient citizens who are, by the end of their molding, completely entrenched and willing to participate in their society. In the film, the matrix acts as a veil that blinds humanity, having built a schema that human beings are trapped in. According to Cook-Sather, the same can be said for our educational system.

The brain is a muscle and other misunderstood metaphors

Language is tricky business; and metaphor can sometimes derail from scientific truth. Metaphor can also simplify complex matters to dangerous results. Unfortunately, misconceptions can spread quickly due to catchy metaphors, analogies, and slogans that permeate out of the world of science and research. Misconceptions and myths are based on sound educational research, however, the language being used to discuss the research is often misappropriated by those who don't fully understand it. According to Paul Howard-Jones, myths, specifically in the realm of neuroscience, are misappropriated because of a communication breakdown in the language and terminology that is being used to communicate scientific results. The terminology being used in neuroscience or cognitive psychology may not necessarily be understood by those operating outside those fields. It is here, in this gap, that myths are created (Howard-Jones, 2014).

Among them is the oft-repeated metaphor "the brain is a muscle", which is usually accompanied by the suggestion that it can be trained in the same fashion as any other muscle. In the past decade, researchers have promised that brain training could help combat a variety of challenges from Attention Deficit Disorder in children to dementia and Alzheimer's disease in adults. Cognitive psychologists have debated extensively the validity and reliability of working memory training experiments, proving the methodology of the experiments to be badly flawed (Melby-Lervåg & Hulme. (2013). However, millions of people continue to "train their brain" with ever-profiting programs such as Lumosity. These working-memory theories may have lost the war that involves battling with scientific instruments, but they seem to have won a different one; a war fought with words, capturing the hearts and minds of an audience that might be ignorant to the scientific literature.

A similar battle has been lost in the realm of learning styles. Cognitive psychologists have written extensively on the lack of evidence regarding matching instruction to preferred learning styles. Despite their findings, an overwhelming majority of educators continue to believe in learning styles theory (Ragowsky et al. 2015). The problem here is once again to be found in the language that is being used to communicate learning styles to the public. Proponents of learning styles will claim "education is not one-size-fits-all" or "everyone learns differently"; and they aren't lying. The literature is not claiming that there are no difference sin the way that people learn or that everyone should be taught in a uniform fashion. The literature only seeks to communicate that matching instruction to learning style is not the best way to address the fact that everyone learns differently (Pashler et al. 2009). The power of ideology and language is so powerful, that despite the numerous researchers who have presented evidence to the contrary, 96 % of teachers, including teachers surveyed from around the world, believe that "individuals learn better when they receive information in their preferred learning style" (Howard-Jones, 2014).

Misconceptions are popularized, copied/pasted, retweeted and shared until they find large audiences. In 2014, the industrialized world saw the resurgence of diseases that scientists had assumed eradicated due to inoculation. It was the result of popularized misconceptions that deterred anxious parents from vaccinating their children; a conspiracy based on a now debunked research paper linking the MMR vaccine to autism. In the environmental sciences, there has been a failure to communicate the serious nature of climate change, leading many to become skeptical of a phenomena that has been very well researched. Misconceptions grow, and with them grow communities of people who have bought into the myth. Convinced they are on a path of truth, these communities invest their time and their resources to helping the myth grow. Ideas are

virulent, and those who can promote them with conviction will win out on the ideological battlefield.

Neuroscience, cognitive psychology, and virtually all other fields of research will have to find ways to communicate with the public effectively. Language, and specifically metaphor, for the way people learn has completely dominated what a vast majority of educators believe, and will influence the way they work, and the information they will pass on. Perhaps the solution lies in ridding ourselves of metaphors altogether. Metaphors are perhaps too broad and generalized to make any kind of informed decision on the status and future of education or any other science for that matter. They simplify what should be complex and nuanced conversations, turning them into sound bites that may sound nice but are completely devoid of substance. Anna Sfard claimed that *"too great a devotion to one particular metaphor can lead to theoretical distortions and to undesirable practices."* It might be time to ditch the metaphors and have a messier, more nuanced, and more informed conversation about education.

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