



## Perspective: Parent-FOMO In A Post-Digital World

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Last fall we published a report, [Women and STEM: Bridging the Divide](#), that examined how educational and corporate institutions can create a more inclusive economy by addressing the marginalization of women in the science, technology, engineering and mathematics fields. I was immediately struck, and honoured, by the number of people who reached out to share personal stories. An unmistakable theme of parental anxiety came through in conversations, which can be intuitively described as parent-FOMO, the fear of missing out. At its root rest questions on the necessary educational backdrop that would help secure their child's future in a post-digital world. And, this concern reached beyond parents with daughters.

Parent-FOMO can be divided into two buckets. The first captured confusion, a lack of confidence or insufficient knowledge on available educational STEM resources across all school-aged children. This is not surprising, as I ran into the same problem when researching. There are many supplemental initiatives occurring outside of the formal public-system classroom. For a parent without a STEM background, not working in the field or lacking a direct network, the selection can be both overwhelming and disheartening. How can they sift through the many choices and determine the best bang-for-their-buck, particularly given its importance as a potential determinant of their child's future? Within [Appendix 1A and 1B](#) of our STEM paper, we tried to facilitate these decisions by capturing a collection of different organizations across provinces, but this was painstaking work and does not do justice to the array of available programs.

Placing an economic lens on this dynamic, parents are faced with asymmetric information. In its most extreme form, it can create market failures. In this case, it's likely leading to suboptimal outcomes for a number of parents and their children, who could be investing significant time and money to locate and participate in supplementary educational programs on a trial and error basis. In turn, this could result in an unintended outcome of discouraging families from STEM fields based on selection complexity, let alone the potential costs of pursuing this avenue.

Conversations revealed that many parents are navigating supplemental educational resources via after-school, weekend and summer programs in an effort to increase their child's exposure to fields like robotics, coding and others. However, for an economist, this raises a red-flag. The cost of STEM preparation programs outside of the public system can become a barrier to entry for lower income families. If there is a perceived teaching deficit within the public educational system, young people from higher income families gain a leg-up into higher paying jobs. This can create greater income inequality down the road. STEM fields are already not highly inclusive of women, but now there may be an additional wedge created for all children from lower income families. The end result is a future workforce that is not fully leveraging its capabilities, but rather one that reflects, in some respects, a lottery outcome based on gender, family income and parental knowledge of resources.

The second bucket of parent-FOMO hails from the bombardment of media headlines that emphasize the displacement of workers via the rise of machines. Will there be a job for my child in the future, even with a university education? You don't have to look far to find headlines that root this fear. Parents have always operated under the social contract that higher education will offer their children income security and insulation from the workforce displacement that can come from technological advancements. Historically, this has been largely true. Low and middle skill workers have borne the brunt of these adjustments, with the manufacturing sector often cited as the poster-child.

However, there are no assurances going forward. Despite being a strong proponent of leveraging the skills of women in STEM educational fields, it's not the be-all-and-end-all solution to career and income security. One must distinguish between the *necessity* of removing systemic biases within society, education, and corporations that discourage qualified women from STEM careers, versus the *necessity* of preparing Canada's broader workforce for the future. Disruptive technologies are impacting workplaces across all industries and occupations, whether it's a hardware engineer within the telecom industry, or an advisor within the finance industry. University degrees, even within STEM, will likely have a shortened shelf-life relative to the past due to the sheer speed and magnitude of change forced upon us in the post-digital world. Just think, we are only in the early stages of exploring disruptive technologies like A.I. and robotics. This leaves a big "unknown" factor about what the exact skill requirements of the future workforce will be, regardless of educational and occupational choice.

It's all too easy to feel some paralysis in decision-making within an environment of high uncertainty. However, I'm not one of those economists who falls into the doom-and-gloom camp. We won't have large swaths of the population walking around in a perpetual state of leisure, pontificating on the works of Shakespeare or dwelling exclusively on "meaning of life" questions. The workplace is always in a state of adaptation, and so are humans. In fact, we're pretty good at it. Newton's third law states that for every action, there is an equal and opposite reaction. This post-digital world will likely become a more rewarding place for individuals and companies who:

1. demonstrate agility
2. embrace life-long learning
3. understand career progression as movement along a lattice, rather than up a ladder

The social contract of the past is one largely based on an educational degree-in-hand and career potential. This is a dated concept. The job market of the future will likely increasingly reward individuals who approach career development as an extension of their university experience. Multidirectional careers and professional reinvention will help ensure that skills are relevant and evolving alongside the market place.

In turn, this will deepen the employee-employer social contract through a stronger learning partnership. For employees, the commitment will be to demonstrate an ability to learn across time, educational platforms and occupational paths. For employers, the commitment will be to assist with reskilling and map job transition opportunities to evolving business models. Learning within the workplace has always been important, but the emphasis will grow.

At all levels, this requires a re-think of the traditional educational framework. There is already a movement towards companies striking learning partnerships with universities, and this may intensify in the years to come. The traditional educational model has been largely based on a supply-push framework. Firms accept the graduates and curriculums that universities supply. The rapid economic transformation of a post-digital world may place us increasingly on a path of demand-push educational models. This is where firms provide more identification and direction into educational curriculums for the needed workplace skills.

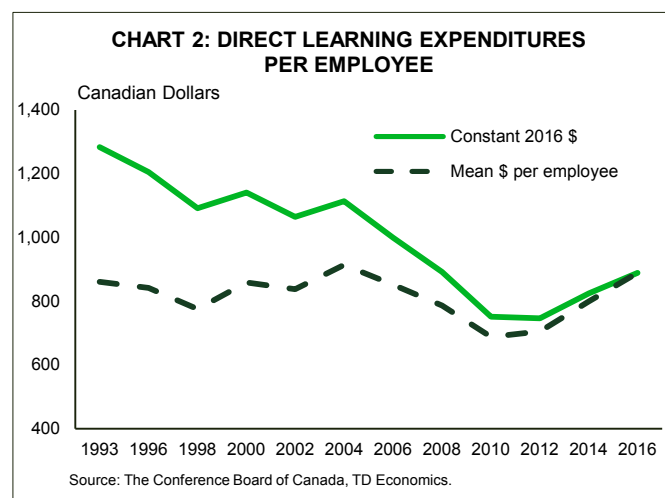
In addition, there will be an incentive for firms to deepen in-house educational systems to help employees build core capabilities, like training for cloud computing, adaptive thinking and so forth. It will not be cost-effective or feasible for companies, particularly larger ones, to adopt hiring models that rely heavily on filling knowledge gaps through new graduates. Aside from the fact that there would simply be insufficient new graduates to draw on for evolving skills, their labour cost would likely rise exponentially due to high demand. More importantly, there is



great intrinsic value for a firm in safeguarding institutional knowledge, informal networks and engendering employee loyalty. Statistics Canada reported that in 2017, the average job tenure for management occupations was roughly 12 years; for business and finance occupations it was 9 years; and for trade and transportation roles it was 8 years (Chart 1). Current employees are every firm's greatest asset, and no company is immune to intensifying global competitive pressures. As an example, the company, AT&T, was featured quite a bit in the media less than two years ago for taking on the Herculean task of initiating a workforce program that included reskilling staff and reconstructing roles for greater job mobility and interchangeability. At the time, they employed roughly 280,000 people and saw a high take-up rate of reskilling opportunities among roughly half of those employees.

As technological change intensifies, so too will the pressure on firms of all sizes to re-tool and focus on continual learning environments. To give an idea of the type of skills that are rising in demand, Table 1 captures a short-list of capabilities that are either currently in high demand, or deemed to be so for the next several years. However, this is a scrape of the data at a point in time, and these too will evolve with time.

For instance, many in the workplace are now familiar with a recent shift in corporate focus on data analytics, a by-product of big-data technological advancements. But, building versus maintaining technical capabilities require different labour demands. Data analytics becomes highly automatable once the infrastructure is created. Over time, demand for workers executing on this task declines. However, big data by its very nature creates demand for



employees who are adept at translating vast amounts of data into abstract concepts and who understand data-based reasoning. These technical and cognitive capabilities go hand-in-hand, but don't necessarily represent the same employee, particularly in the absence of re-training. You can envision a worse-case scenario of staff bogged down in a sea of data that has incredible depth and accessibility, and then go off in all (or wrong) directions with strategy implementation.

The transformation of workplace skills happens in real time, and speed will matter. This offers an opportunity for governments to revisit guidelines and incentives for current corporate training funding models to positively encourage firms of all sizes to do more heavy lifting on workforce reskilling. This could mitigate driving displaced workers into long spells of unemployment or worse, from becoming permanently marginalized within

**Table 1: Different Types of Capabilities**

Technical Capabilities	Cognitive Capabilities
<ul style="list-style-type: none"> <li>• Cloud and Distributed Computing</li> <li>• Data Analytics</li> <li>• Web Architecture and Development Framework</li> <li>• Middleware and Integration Software</li> <li>• User Interface Design</li> <li>• Network and Informational Security</li> <li>• Mobile Development</li> <li>• Search Engine Optimization/Marketing</li> </ul>	<ul style="list-style-type: none"> <li>• Emotional Intelligence &amp; People Leadership</li> <li>• Virtual Collaboration</li> <li>• Novel and Adaptive Thinking (coming up with solutions which are beyond role base)</li> <li>• Transdisciplinary (understand concepts across multiple disciplines)</li> <li>• Teaching/training/mentoring</li> <li>• Service Orientation</li> <li>• Computational Thinking (translating vast amounts of data into abstract concepts)</li> <li>• Negotiation</li> </ul>

Source: TD Economics.

the labour market. Chart 2 offers a glimpse that firms may be under-investing for the future, and that funding for skills training is materially impacted by business cycle fluctuations.

There are broad economic and societal benefits when firms support training of new and transferable skills. Impacted employees from technological disruption would either be able to navigate through a corporate lattice of job roles, or have a better chance to re-enter the labour force with marketable skills, even when they are no longer a direct match to the needs of their prior employer.

Naturally, educators are at the forefront of this workforce challenge, and need to be equally agile and adept at training and adjusting the core competencies of teachers and curriculums. But, they alone can't take on a task of

this magnitude. It will be up to all to redefine the social contract on future education.

Our *Women in STEM* research analyzed labour market friction through the lens of women and girls. But, the conversations that transpired in the days that followed broadened that lens to an anxiety over workplace friction across all levels of occupations and educational paths. As parents try to navigate these shifts in a rapidly evolving economic environment, FOMO is not a surprising result. Transforming a well-worn cliché helps to offer a more intuitive framework. Just like it takes a village to raise a child, so too does this solution seem to reside in the creation of a workplace village. One of continual learning, and the empowerment of employees to be equal partners on this journey.

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