

Future Skills
Centre

Centre des
Compétences futures

August 2020

Hype and Reality on the Future of Work

More Questions Than Answers

Wendy Cukier, MA, MBA, PhD, DU (hon) LLD (hon) M.S.C.

Founder & Academic Director, TRSM Diversity Institute

Professor, Entrepreneurship & Strategy, Ryerson University

wcukier@ryerson.ca

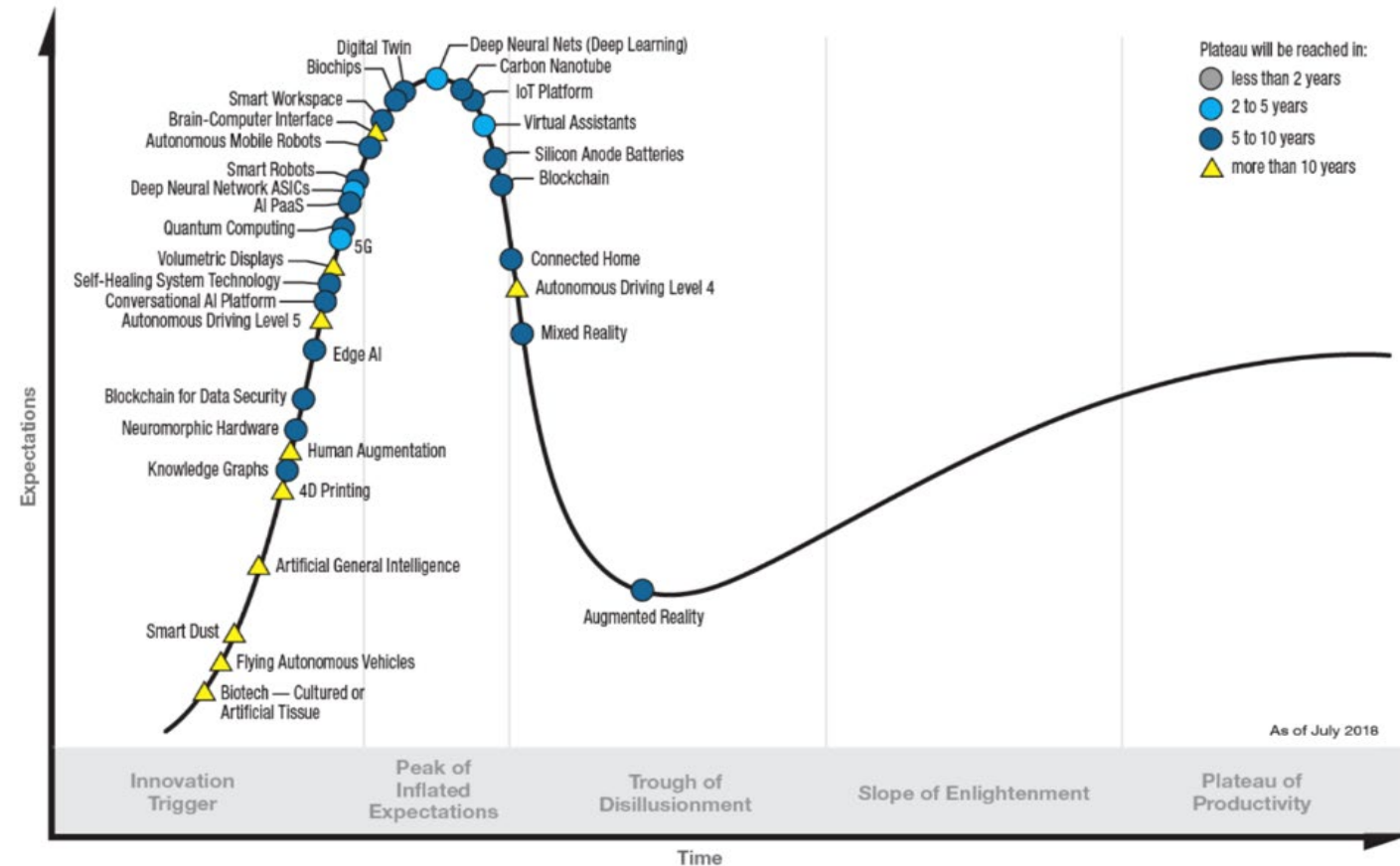
[@CukierWendy](https://twitter.com/CukierWendy)

Agenda

- Challenging Assumptions
- Looking for Skills in the Wrong Places
- The Way Forward

CHALLENGING ASSUMPTIONS: Assumptions about the Future

Hype Cycle for Emerging Technologies (Gartner, 2018)



- AI Impacts:
- 42% of jobs may disappear by 2020
 - (Osbourne & Frey, 2013)
- Job automation (12%)
- Job enhancement (75%)
- Job creation (13%)
 - (Frank et. al., 2017)

Assumptions about Labour Market Trends

“Our sustained growth ... requires large numbers of new Canadian graduates in computer science, electrical and computer engineering, physics, and mathematics.”

Roth, 1998

“Technological skills are not the only need. Marketers are harder to find than engineers.”

CATA, 2001

“Microsoft believes that lessons from a liberal arts education are necessary for the proper development of AI.”

Justin Sullivan, 2019

Access to Opportunities Program (ATOP) spent **\$150 million** over three years into Ontario universities to address these skills.

Assumptions About Skills

SKILL PERCEPTIONS



Writing Skills

93%



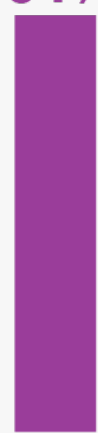
39%

Student Employer



Oral Communication Skills

91%



47%

Student Employer

Student Perception

- **93%** believe they are highly proficient in writing
- **91%** in oral communication

Employer Perception

- **39%** believe recent graduates are highly proficient in writing
- **47%** in oral communication



Increasingly there are efforts to focus less on “jobs” and more on “skills” or “competencies”

But the definitions are fuzzy: Skills versus tools

Top 10 General Digital Skills		Top 10 Specific Digital Skills
Data Analytics	1	JavaScript
Machine Learning	2	Python
Cloud Computing	3	SQL
Database Management	4	Node.js
Cybersecurity	5	C#
Graphic Design	6	Java
Build Automation	7	C++
Blockchain	8	Ruby on Rails
AR/VR	9	HTML5
Natural Language Processing	10	PHP



Assumptions About STEM

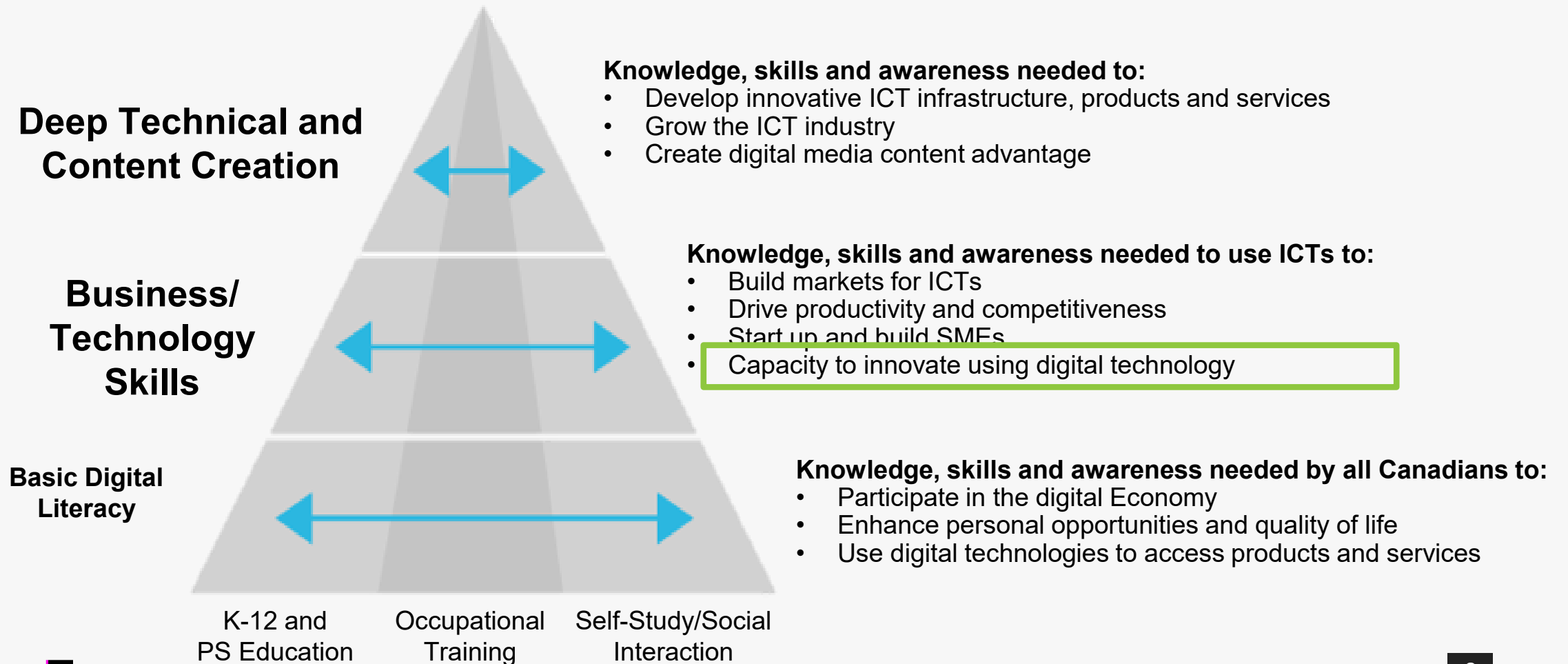
Highest

Field	2005 grad	2014 grad
Dentistry	\$103,750	\$99,601
Veterinary Medicine	\$70,714	\$77,440
Law	\$75,376	\$72,412
Medicine	\$68,333	\$72,875
Computer Science	\$56,828	\$70,148
Engineering	\$58,939	\$65,475
Nursing	\$58,927	\$62,201
Mathematics	\$50,814	\$58,718
Business & Commerce	\$52,383	\$54,416
Health Professions	\$51,410	\$51,061
Therapy & Rehabilitation	\$50,313	\$52,500
Other Arts & Science	\$49,954	\$44,736

Lowest

Field	2005 grad	2014 grad
Physical Sciences	\$48,860	\$43,444
Education	\$47,992	\$43,550
Social Sciences	\$43,996	\$42,047
Kinesiology/ Recreation/Phys Ed.	\$42,647	\$38,948
Agriculture & Biology	\$42,038	\$38,660
Humanities	\$41,550	\$38,892
Journalism	\$40,870	\$40,190
Fine & Applied Arts	\$36,911	\$35,742
Average	\$49,669	\$49,636

Assumption That Digital Skills = Comp Sci/Eng



Assumptions About Solutions - Women lead the battle against COVID



Chief medical officers are leading Canada through COVID-19 crisis — and many are women



But are Absent in Discussions of Recovery

Retail Council of Canada: In Conversation with Retail Leaders in Canada



MaRS Panel: Adapting New Business Models Amidst COVID-19

In move from crisis management to transition, Parliament will require a 'different manner' and an 'adaptive response,' say experts

'It's in the government's interest and in the country's interest to make the management of COVID an important priority, but not to set aside the other priorities,' says former Tory Senator Hugh Segal.

Continued from page 1

19-related effects for the next two to three years, but there is still a need to tackle other important issues, said Hugh Segal, a former Conservative Senator and past chief of staff to former Progressive Conservative prime minister Brian Mulroney.

"It's in the government's interest and in the country's interest to make the management of COVID an important priority, but not to

actions being taken by all levels of government to support workers and businesses and protect people's health and safety.

As the government adjusts its priorities, it could come forward with a new Throne Speech in the fall, Mr. Segal said, adding that a fiscal update shouldn't be rushed and could come in the fall as well.

He also said there could also be an opportunity for a "modest" cabinet shuffle to rearrange those ministers who have performed well during the pandemic and those who have not.

A Throne Speech has the "added virtue" of requiring a vote of confidence in the government, he said.

"[I]t will force all the parties—not just the government—to

Canada's foreign policy is going to be affected by what happened during COVID," he said, highlighting that there hasn't been such a statement from the government about Canada's foreign policy since 2017, when Ms. Freeland, the then-foreign affairs minister, laid out her vision of Canada in the world.

"It was a great statement when it was made, but events have overtaken it. So—a fresh foreign policy statement about what we have now learned, and what we think should change in

response to a current crisis," said Mr. Cappe. "What's the adaptive response to the new world? Is it going to go back to the way it was, or are we going to build new relationships that allow us to manage through?"

"What we need is to have a re-think of all this social programming and how it all hangs together," said Mr. Cappe. "How does EI work with social assistance and work with municipal services in kind? That's a big job—maybe what we need [is] a royal commission in a post-

COVID world to rethink social service programming."

Mr. Cappe also mentioned that one of the things that happened post-9/11 are better treatments, optimistically, a



Senator Peter Harder, left, former Conservative Senator Hugh Segal, former clerk of the Privy Council Mel Cappe, and principal at Earncliffe Strategy Group Rick Anderson. The Hill Times file photographs

the needed liquid approach.

Mr. Segal said ment should be g "lessons learned" together Parliament as experts in ind scientific communit has been effective the pandemic, wi better in the futu government can p pandemic.

"I don't think focused on who o that kind of acco be seen by most constructive or h

'We are at the point'

Rick Anderson, Earncliffe Strategy Group leader Preston M. Hill Times that th tended to be "kee to proceed toward as an economic r

"The federal g to still see the he as the dominant but I think we rea inflection point a Mr. Anderson, wh now attention be next phase of the has two character

"One is that th pection that the waves of outbrea those, the frequ how long we wou situation—there epted wisdom th one-and-done ou Anderson. "There outbreaks and th continue until su are better treatm optimistically, a

"We are at the

Assumptions About a Level Playing Field

- COVID has laid bare structural inequality
- Women-owned businesses are more commonly in service industries vs. manufacturing or technology sectors, bearing the brunt of disruptions
 - Unemployment rate for women went up by 9.9% in March and April vs 5.7% for men
 - 1.54 million (16.8%) women lost their jobs, 1.46M (14.5%) for men
- Women-owned businesses tend to be smaller, have fewer savings, be less likely to be incorporated, and face more discrimination when accessing credit
- Mothers are more often absent from work
 - In June, women with children under 18 (14.3%) worked less than half their usual hours compared with their male counterparts (8.7%)



- Most of the support programs have been designed to support SMEs with employees which results in women entrepreneurs being excluded for the support
 - Women account for 15.6% of SMEs with one employee but 38% of self employed Canadians
- Environics Financial Vulnerability Index noted increased vulnerability for Indigenous communities due to low discretionary income and low savings
 - Long-standing disparities exist in the way of healthcare and health conditions among Indigenous communities
 - Basic infrastructure need also pose additional risks
 - 60% of Indigenous peoples say their mental health has worsened since the onset of physical distancing measures



LOOKING FOR SKILLS IN ALL THE WRONG PLACES: Internationally Trained Professionals

“Foreign” Degree Holders are More Likely to be Underemployed
In 2015 **44%** of engineers with foreign degrees were underemployed, compared with 21% of Canadian degree-holders
This increases to **49%** for women with foreign engineering degrees



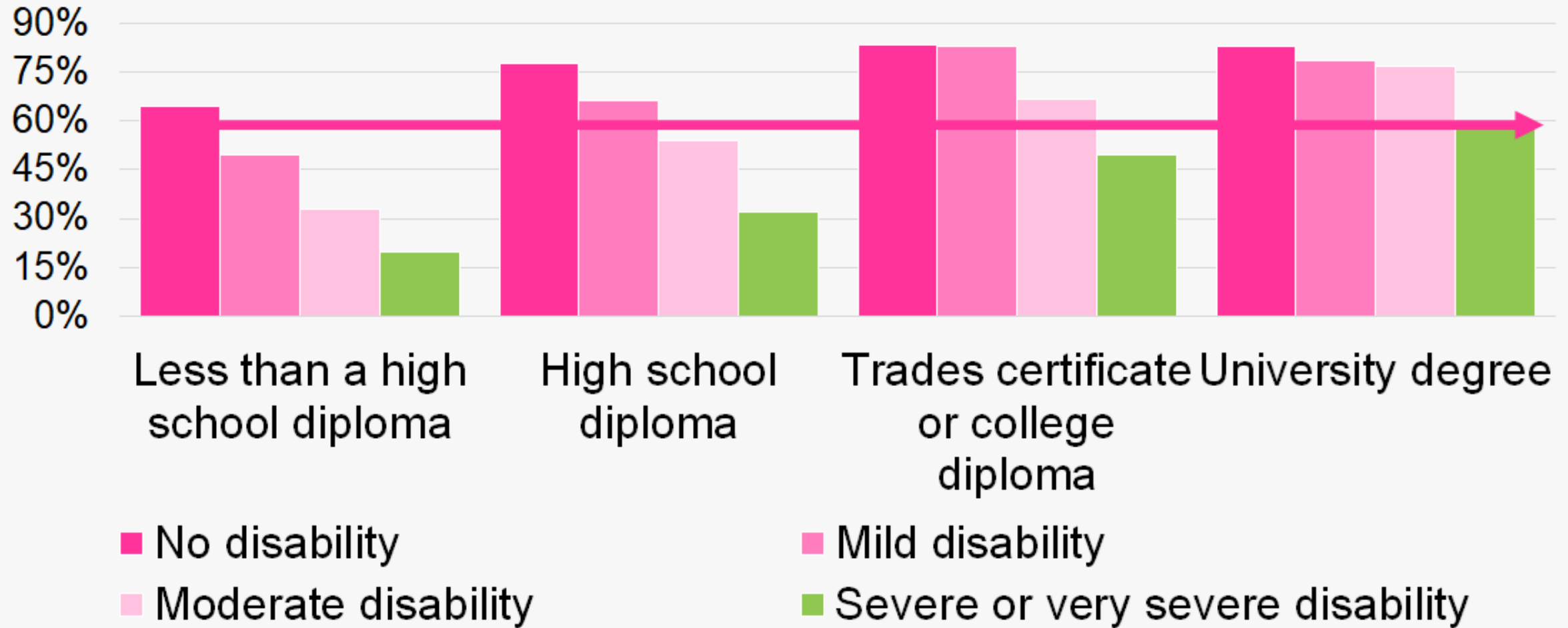
44%



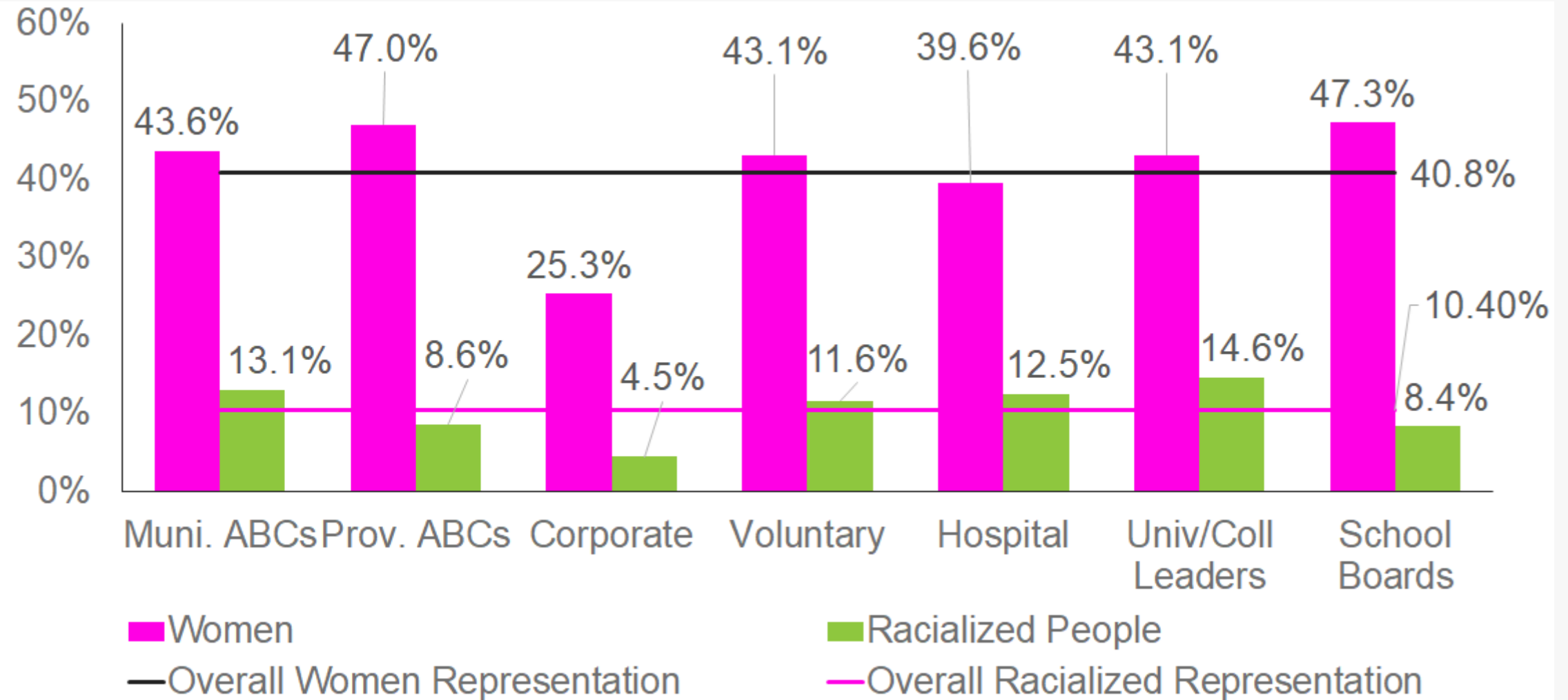
49%



People with Disabilities



The Representation of Women and Racialized



THE WAY FORWARD: Systems Approach



Societal
LEVEL

Organizational
LEVEL

Individual
LEVEL





Thank you!

fsc-ccf.ca

fsc-ccf.ca/research/skills-next/

fsc-ccf.ca/contact-us

email info@fsc-ccf.ca

www.fsc-ccf.ca / [@fsc_ccf_en](#) / [@fsc_ccf_fr](#)

