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►► The Evolving Economy (Post-COVID-19 and beyond) and Aligning Skills Training: Roles for Canada's Postsecondary Institutions

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Its toll has been massive. The emergence and spread of the Coronavirus (COVID-19) into a global pandemic has, over the past nine months, resulted in significant and all-encompassing adverse effects on the physical, mental and economic health of the nation states of the world. It raises important questions about lasting economic impacts and the future of post-secondary education.

In spite of hope in some quarters that the pandemic would fade without major interventions of governments, the spread has essentially not slowed, and instead mutated into a more infectious strain. Even where the virus has presumably been controlled, it has re-emerged in the form of a second wave. Therefore, many governments are extending mitigation measures. In so doing they

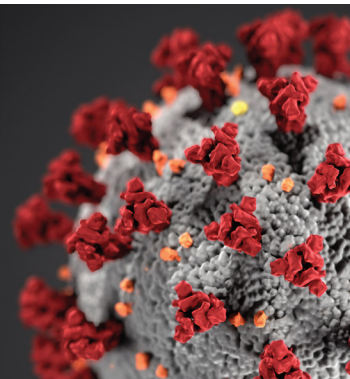
are considering how daily aspects of the economy and society can be adjusted within the framework of an ongoing pandemic, at least until widespread access to a vaccine is available.

►► Characteristics of the Evolving Economy

COVID-19 has brought to the forefront how a contactless economy operates, and on which sectors and employee types it affects most. But a contactless, or virtual, economy has been evolving for some time. Pandemic restrictions on human contact have brought online Amazon-style consumption into the economic mainstream. Some of the other phenomena of the evolving nature of the economy are:

COVID-19 SERIES: FROM CRISIS TO RECOVERY

This issue of *JSGS Policy Brief* is part of a series dedicated to exploring and providing evidence-based analysis, policy ideas, recommendations and research conclusions on the various dimensions of the pandemic, as it relates here in Canada and internationally.



- **Technologies Impacting the Workplace:** Significant advances in information processing, aided by the flow and accumulation of data facilitated by widespread internet penetration and mobile communication, are bringing about technological innovation at an accelerating pace. One result is to present the labour market with both opportunities and challenges. With the growth of artificial intelligence (AI), major redefinitions of tasks associated with work that hitherto were considered immune from automation are underway.
- **Working in a Digital Economy:** Although the popular way of thinking about the digital economy has been in terms of job elimination and worker displacement, the future of work is much more than that. According to a report by Accenture done for the G-20, the key elements are : (a) Digital and Human – Intelligent technologies will reconfigure roles as tasks evolve and worker capabilities are augmented by machines.; (b) Enhanced Role of Experiential Learning – Greater focus on project-based active learning instead of passive absorption of knowledge; and (c) Flexible & Fluid – An important conclusion from Accenture's *New Skills Now* study is that in spite of an accelerated rate of technology development, for the digital economy to work and produce dividends human content will still be critical.
- **Changing Expectations of Future Learners:** The 2020 World Economic Forum suggested that young people would like the learning systems to reimagine what and how things are taught to prepare today's youth for tomorrow's economy. Specifically, they would like to see the adoption of four principles to guide the change: (a) *Modern skills, not old-fashioned curricula.* There was a strong sense that learning institutions aren't currently equipping young people with the right skills and aren't teaching in a way that makes the most of the modern technology and resonates with young people; (b) *Soft skills* are the key. Their generation will need strong soft skills, such as communication, critical thinking and resilience, and learning has to be lifelong; (c) *Digital connectivity and digital learning.* The emphasis should be on connectivity not only locally but also globally; and (d) *Reach vulnerable communities.* Learning cannot be elitist; we need to make sure young people in vulnerable communities have access to all the opportunities.

► Unintended Consequences on Learning Institutions

While the learning institutions attempted a quick transition to virtual learning as a response to the pandemic, it was neither well-developed, nor was able to respond to the skill needs of the evolving digital economy. At the same time, there has been hesitancy in accepting the reality that the pandemic will lead to permanent shifts in political and economic power in ways that will become apparent only later.

Data on employment uptake are already revealing what Laura D'Andrea Tyson had predicted at the outset of the pandemic. She said: "the share of services in the economy will continue to rise.

But the share of in-person services will decline in retail, hospitality, travel, education, health care, and government as digitalization drives changes in the way these services are organized and delivered. Many low-wage, low-skill, in-person service jobs, especially those provided by small firms, will not return with the eventual recovery." Therefore, following up on the thoughts of Serge Dupont and Kevin Lynch in an earlier Johnson Shoyama Policy Brief, aligning skills and competencies to the evolving needs of the labour market, in both the private and public sectors is more critical for the post-COVID-19 economy.

In meeting these important economic imperatives, learning institutions will have a major role to play. As a \$35 billion enterprise in direct expenditures, the Canadian university sector is a significant driver of economic prosperity. The Social Sciences and Humanities Council of Canada has already taken note of that fact. It has launched a new competition focusing on *Working in the Digital Economy* as one of the 16 global future challenges identified through SSHRC's Imagining Canada's Future initiative.

► Rethinking the Role of Learning Institutions: Opportunities and Challenges

OPPORTUNITIES

To start this rethinking, Farnam Jahanian suggests four key areas where the universities can put their emphasis.

First, focus on 'human' skills, not just digital competencies. The fact is the higher education sector has the capability to enable students to learn how to approach problems from many perspectives, cultivate and exploit creativity, engage in complex communication, and leverage critical thinking.

Second, embrace the T-shaped approach to knowledge. It requires making disciplinary boundaries more porous and instituting programs at the edges and intersections of traditional fields, thus enabling students to gain vertical (deep disciplinary) expertise, combined with horizontal (cross-cutting) knowledge.

Third, invest in personalized, technology-enhanced learning (TEL). Investment in TEL can help narrow socioeconomic and racial achievement gaps among students. Carnegie Mellon University's *OpenSimon Toolkit* can democratize learning science, and create a global, collaborative community of learning engineers within higher education.

Fourth, consider new models of engagement for the private sector and government. While educational institutions commit to develop new ways of reskilling their students for the rapidly evolving economy, private sectors can commit to longer term investments in institutions' initiatives. At the same time the public sector can focus on innovative ways of supporting them through fiscal incentives that would sustain continuous improvements in the learning system.

Jahanian's views on the imperatives of maximizing human interaction and technology's potential and rethinking support and engagement within the higher education community are useful

starting points. But there remain gaps in adjusting mindsets of stakeholders to prepare for a new version of the future. Ishwar Puri adds three other imperatives for the universities to consider.

One is to engage students in the virtual experience process where the learning focus is as important as learning process. Reimagining learning should enable students to address important socio-economic issues of the day, such as climate, affordable housing, access to clean water, cybersecurity etc., irrespective of their disciplinary affiliation. Another is ending the Credit Hour-based learning model. With blended learning, consisting of synchronous and asynchronous instruction, defining courses by credit hours would have little relevance, thus paving the way to re-envision transcripts in terms of learning, competencies and skills gained by the student. And finally, incorporating student input in course design. Given that students and faculty each have distinctive roles, a reimagined learning institution should create space for collaboration and co-creation in learning, teaching and assessment, as well as in designing curriculum.

CHALLENGES

While opportunities for aligning skills and competencies are evident, the reimagining process will have its challenges. For any of the opportunities to become realities, the policy focus must be the “campus workplace” which has multiple stakeholders, not all of whom view the reimagining of universities from the same perspective.

Some of the challenges are:

1. *Making a departure from the traditional roles and modalities of teaching and learning.* As traditional entities, universities generally do not adapt quickly. There needs to be recognition that innovative learning is possible even within virtual learning platforms. Not all university stakeholders share the imperative of turning out graduates who fit into the evolving needs of the economy. In addition, more and more students are questioning if they are getting/will get value for money from fully virtual learning, or some form of hybrid learning that does not allow physical interactions among their peers.
2. *Rethinking learning infrastructure.* Universities have become used to thinking of infrastructure primarily in terms of bricks and mortar. COVID-19 restrictions on physical contact and quick transition to online learning have brought to the forefront significant weaknesses in IT support on campus, as well as universities’ capacity to support off-campus learning where not all students have equal access to technology. It has also brought forward the need for pedagogical-design support (instructional support) for the faculty, raising the question about the desired qualifications of a teaching assistant in the new economy. A secure technology infrastructure that would allow seamless interaction between faculty and students, as well as among peer-to-peer, both on- and off-campus. It would include pertinent contact and feedback with external stakeholders as an essential component of the infrastructural investment decisions for universities in the economy of the future. However,
- investment in technology infrastructure does not have to come at the expense of bricks and mortars. The design of the new Continuing Studies building at York University is a good example of how universities can build infrastructure for both virtual and hybrid learning.
3. *Concerns about the teacher-scholar in universities.* Any reimagining of the university roles in the new economy must carefully consider the roles of actual providers of learning within the institutions. Not everyone agrees that skills training or reskilling is the role of university education. There is fear among some faculty that with the opportunity and demands to unbundle the traditional semester-long courses into “learning and knowledge sets” (or microskills and micro-credentialing) could open the doors to the transition away from a model of tenured faculty. The result would be more adjunct faculty, term faculty and “contingent research faculty” who will be encouraged to support their salaries—not just through research, but via training grants and applications of all types. Some would see such a reimagining as equivalent to the de facto destruction of the campus community. Such concerns will justify the need for faculty, staff, postdocs, graduate students, and administrative and tenure-track allies working together to preserve what is best in higher education. However, with respect to micro-credentialing, there is ample evidence that this can be an important pedagogical tool that universities can use in addressing the lifelong, as well as segmented learning opportunities that the external stakeholders in the economy would welcome.
4. *Concerns about corporation-like thinking among administrators.* The pandemic has already seen significant budgetary issues for the universities, likely to be compounded by possible decreases in future public funding availabilities. In the absence of quick economic recovery, the difference between struggling and prospering often comes down to the vision and will of campus leaders. The COVID-19 aftermath has heightened distrust between administrators, faculty and staff members, which is a fraught relationship at the best of times. Engaged discourse must take place about moves like Purdue University’s purchase of Kaplan University in order to respond to demands for online education and from nontraditional students. There will be demands for the preservation of shared-governance system within universities. Therefore, open communication and transparency must be put ahead of typical corporation-like thinking.
5. *Concerns about continuing built-in inequities in a reimagined university.* It has already become evident that closing in-person learning spaces can accelerate racial and class-based inequalities. Therefore, universities, even when offering hybrid programs, would need to pay attention to those students who do not have adequate access to technology used to deliver classes. This would call for innovative partnerships with technology providers, as well as with companies that supply gadgets to apply these technologies. Other concerns relate to how the universities will deal with systemic racism that

prevails in campus environments that are not virtual.

►► What Happens to Canadian Universities' Global Mission?

All Canadian universities have adopted a mission of providing global learning, either by educating students from nations around the world and/or enabling domestic students to undertake a part of their learning away from the home country. Study abroad helps gain exposure to new cultures and ideas, stimulating innovation and developing important cross-cultural competencies. International students bring those same benefits to our shores. International students account for more than \$21 billion of Canada's GDP and support almost 170,000 jobs, an impact felt across the country.

Many Canadian education institutions export services such as curriculum licensing and technical and professional training. COVID-19 restrictions on interpersonal contacts have affected the universities' global mission in a major way. During the past two academic terms, institutions have had to deal with issues of access to online learning for international students and cancellation of study-abroad programs, compounded by restrictions on international travel and issuance of new study permits.

The issues go beyond international enrolment numbers and cover topics such as online access from around the world with different time zones and timely student feedbacks, unequal technology infrastructure as well as national government regulation on material provided online.

Some campuses such as the University of Toronto have taken steps that would allow students to gain global experience within a virtual setting. There is considerable room to deliberate on how the global mission will be realized within a teaching-learning framework that could incorporate both virtual and hybrid learning and how international students can experience equal technology access and use. In their roles as researchers, the faculty has adopted innovative

modes of international collaboration, but these have not always been transitioned into course deliveries. If the global missions are going to remain important for universities, the thinking must encompass more than how the residences will fill their spaces, or how the revenue shortfalls from international sources will be remedied.

A related issue is potential impact on Canada's immigration. International graduates from Canadian universities and colleges represent an important part of the Canadian Experience Class. If the international enrolment in Canadian universities slows down, it will have repercussions on the annual immigration intake. If the universities adopt more hybrid options, requiring less physical presence in Canada, how will these be accommodated in applying the Canadian Experience Class definition for the international graduates of these programs? These areas of Canada's future skill needs are closely related to the global missions of Canadian universities.

Finally, while the push for policies to align skills training with the needs of an evolving economy is worthwhile, it cannot be answered solely by the federal government, particularly in designing short-term responses to the pandemic. As the future economy demands newer skills and use of innovative technologies, the policy responses must also come from other stakeholders in the economy—the private sector, and most importantly from Canada's teaching-learning institutions.

►► References

View the online version of the Policy Brief for a complete list of references (www.schoolofpublicpolicy.sk.ca).

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People who are passionate about public policy know that the Province of Saskatchewan has pioneered some of Canada's major policy innovations. The two distinguished public servants after whom the school is named, Albert W. Johnson and Thomas K. Shoyama, used their practical and theoretical knowledge to challenge existing policies and practices, as well as to explore new policies and organizational forms. Earning the label, "the Greatest Generation," they and their colleagues became part of a group of modernizers who saw government as a positive catalyst of change in post-war Canada. They created a legacy of achievement in public administration and professionalism in public service that remains a continuing inspiration for public servants in Saskatchewan and across the country. The Johnson Shoyama Graduate School of Public Policy is proud to carry on the tradition by educating students interested in and devoted to advancing public value.

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