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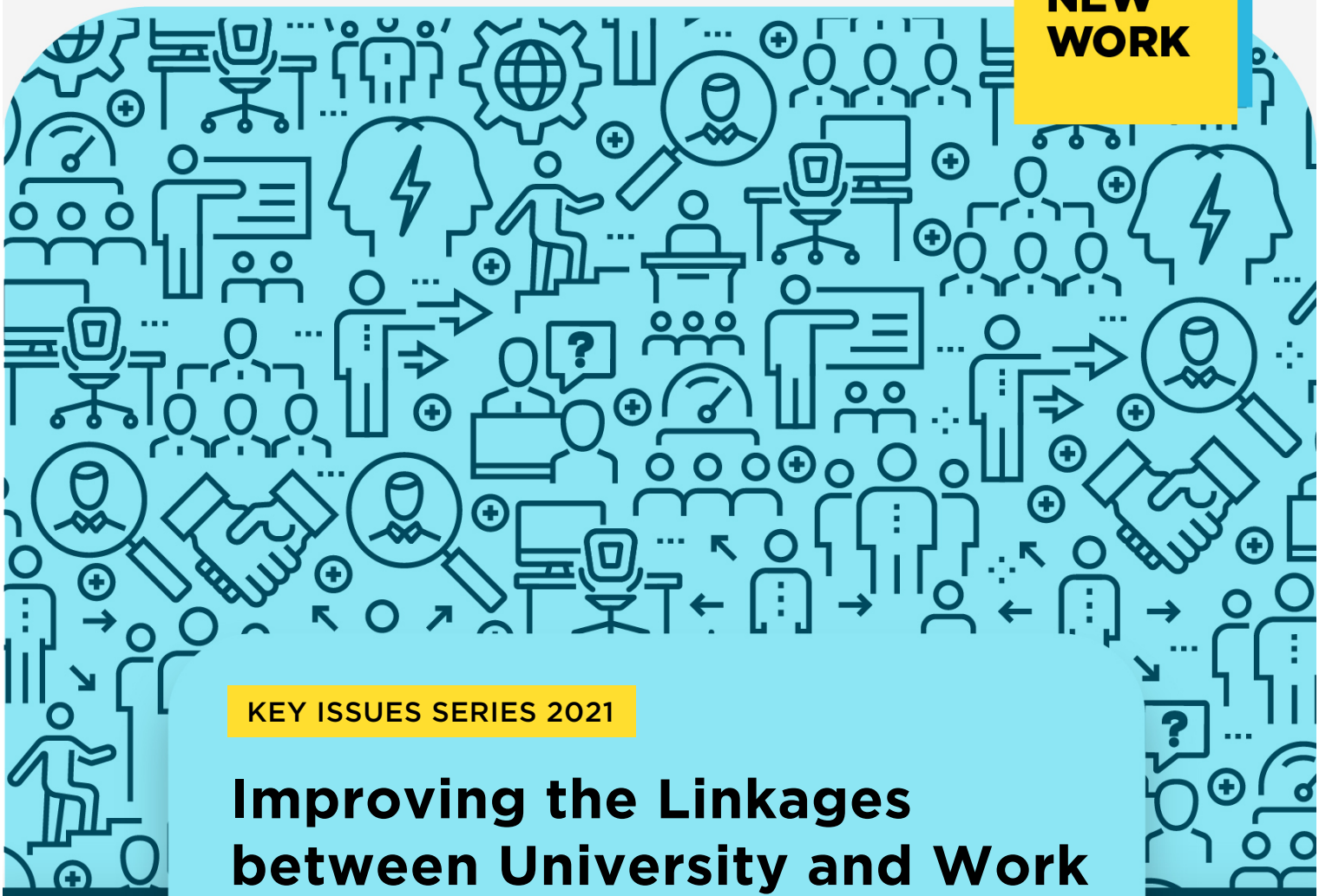

KEY ISSUES SERIES 2021

Improving the Linkages between University and Work

Policy and practice recommendations

HARVEY P. WEINGARTEN

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EXECUTIVE SUMMARY

In a 2019 company press release announcing a $350 million global investment in "the Future of Work," JPMorgan Chase chairman and CEO Jamie Dimon stated that, "The new world of work is about skills, not necessarily degrees."

That should have been a wakeup call to universities across the planet. After all, the skills gap has been a topic for some time, and this paper notes that COVID-19 and automation have also played a role in transforming the needs of the labour market. It's becoming increasingly clear that universities aren't graduating students with the real-world skills employers need.

The data showing the mismatch between the perceptions of employers and academics about how higher education is preparing students for workplaces are startling. A survey conducted by the Institute of Competitiveness in Canada (2017) revealed that 70 percent of employers believed their employees' critical-thinking and problem-solving skills were insufficient. A recent survey indicated that a substantially higher percentage of Americans believe an internship at Google would lead to better career success than a Harvard degree. Meanwhile, a McKinsey and Company study found that 70 percent of administrators they felt their graduates were prepared for the job market, but only 42 percent of employers and 45 percent of graduates agreed.

This paper, which concentrates on universities, offers as number of policies and practices to better align higher education with the world of work.

Rebalancing university curriculums to emphasize skills development over transmission of content is one suggestion. For too long, universities have assumed the former comes with the latter, but that is not bearing out in the world of work. This paper argues that an increased emphasis on skills should lead to changes in the credentials granted by universities. Employers, increasingly, don't ask for university transcripts because they're increasingly irrelevant, but a document demonstrating the skills they seek would be invaluable. In short, universities need to ensure there is good evidence to support the claim that skill-development has occurred.

Increasingly, what one studies at university doesn't predict the jobs one will occupy. In addition, students today will change jobs five to seven times, and the gig economy is growing, both of which reinforce the idea that an emphasis on skills makes sense. A number of universities in the U.S. are innovating and delivering programs in different ways than they always have. Examples include the University of Minnesota, the Michener Institute of Education and Western Governors University, the latter of which operates online and targets programs in areas of labour-market shortages. Canada lags behind the U.S. in developing competency-based education frameworks, which clearly articulate and assess outcomes, allow students to learn at their own pace and give graduates a credential that describes the competencies they've mastered.

One thing slowing down innovation in Canadian universities is government regulation, which covers everything from funding to approvals of which institutions can operate where and which programs a university can offer and which credentials it can grant. There are signs this is improving, however, and this should continue.

Universities should also target the equity of access challenge. Students from low-income or families, Indigenous learners and those from other cultural or ethnic groups have lower post-secondary school enrolment. There's a need for new programs to address the financial, social and cultural factors that lead these individuals to eschew more schooling.

Finally, the best way to know a program worked is to rigorously evaluate it. This cannot be overstated for any educational innovation, particularly one that values skills development as highly as an understanding of content.

It is time to embrace some new ideas in higher education; it's time to innovate.

INTRODUCTION

The current climate has made it essential to look at how Canada's higher education system could position itself to ensure that Canada develops a workforce with the knowledge, skills and competencies to fill today's jobs, and for employees to be successful in them and be sufficiently adaptable and responsive when their working conditions change or jobs disappear.

First, there is the COVID-19 pandemic, which has resulted in millions of Canadians losing their jobs, and some sectors being more affected than others. Some displaced workers will undoubtedly return to their previous employment when some sense of normalcy returns and the economy recovers. But many will not. These individuals will require some additional education, up-skilling or retraining to obtain alternate employment. A survey of workers whose employment was affected by COVID-19 revealed that about 34 percent of them believe they will need more education to find new employment and 64 percent say they will seek some retraining or new skills.[1] This may be particularly evident in health-care — a job category of primary concern to Canadians. The pandemic has shone a light on the human resource deficiencies and shortages that existed in Canada's health-care system even before the arrival of COVID-19 and there is concern that more than the usual number of health-care workers will be leaving their professions as a result of their COVID-19 experiences.

Second, even before the pandemic, Canada was obsessed with conversations and discussions about a "skills gap" in the Canadian labour force. There are disagreements about the size of this skills gap and, for some, whether a gap actually exists. Regardless, Canadian institutions, particularly governments, have related strongly to the skills gap arguments and are responding by initiating a host of policies and funding programs in areas such as work-integrated learning, future skills development, job retraining and up-skilling to close the presumed gap. The "skills gap" conversation is not going away. It will be accelerated and exacerbated by the impact of COVID-19. And to state the obvious, if the current relationships between educational institutions and workplaces and employers were adequate or sufficient, Canada would not be having such a florid discussion or so much angst about a skills gap and the role of higher education in closing it.

> **Experts forecast that current students will change jobs and careers more often than has been true in the past.**

Third, the pandemic and the skills gap notwithstanding, there are some compelling arguments about the changing nature of work — the so-called gig economy — that intersect with consideration of how an education system best prepares future workers. In general, one assumes that future jobs will be more precarious and more volatile than has been the case in the past. Experts forecast that current students will change jobs and careers more often than has been true in the past. All of this will require and demand a greater commitment to continuous training and retraining of the workforce to meet the demands and dynamics of an increasingly changing and volatile job market. Canadians have talked often about the need

Employers are far more articulate than they have been in the past about the skills required to be successful in today's jobs. The Royal Bank of Canada has invested more than $500 million over 10 years to prepare youth for today's labour markets.

for continuous or "life-long learning." It is time to reify this rhetorical discussion and consider how higher education should change or accommodate this new reality.

Employers are far more articulate than they have been in the past about the skills required to be successful in today's jobs. The Royal Bank of Canada has invested more than $500 million over 10 years to prepare youth for today's labour markets.

Some will point out, accurately, that it is not only the formal and traditional higher education system – colleges and universities – that are responsible for job training, retraining and up-skilling. This is surely true. Massive investments are being made in a wide range of programs designed to help people adjust to the realities of today's labour markets, to prepare them adequately for the jobs they have, and to allow them to re-train if their jobs evaporate and they need further education. For example, several budgets ago, the federal government invested approximately $250 million to create a Future Skills Council and Centre to explore efficient and effective ways of skills development and retraining.[2] Similarly, it created a Canada Training Benefit to provide financial aid to those who seek retraining or up-skilling.[3] The recently announced federal budget describes and funds a slew of enhanced and additional programs designed to train individuals for the workplace.[4] The private sector is also stepping up to the plate. Employers are far more articulate than they have been in the past about the skills required to be successful in today's jobs. The Royal Bank of Canada has invested more than $500 million over 10 years to prepare youth for today's labour markets.[5] And do not forget that the federal government transfers billions of dollars to the provinces each year in labour market funds to support a range of job-training and re-skilling programs and initiatives.[6]

The investments in continuous learning and in the host of specialty programs to better prepare individuals (after formal education) for entry-level jobs and to retrain or up-skill when they lose their jobs or wish to change employment status, are welcome. But they may not be enough to address fully the challenges and concerns about Canada's workforce. The public education system is going to have to step up to the plate. The reality in Canada is that the investment in these boutique and targeted programs pales in comparison to the massive investment Canadian governments make collectively to support a public education system. This

annual investment of public funds in public education is by orders of magnitude the largest investment the country makes in the education and training of the future workforce. And it has always been so. The dominant reason governments invest in public education is to assure a steady stream of qualified workers to fill jobs, drive economies and sustain the talented and educated workforce needed to attract new jobs and companies to the country. Equally, virtually every student survey indicates that the dominant, although not necessarily the sole, reason students pursue post-secondary education is to obtain the knowledge and credentials needed to get a good job or a job to which they aspire.

If Canada is going to develop and sustain a workforce that will serve the country and its economy well, it needs to leverage this massive investment in public education to best serve the needs of future employees, employers, workplaces and labour markets.

This paper discusses policies and practices of higher education that might better align the worlds of higher education and work. These suggestions are offered as ways that might serve to redress some of the concerns and complaints about the current contribution of higher education institutions to adequately prepare graduates for today's workplaces. And there are concerns. There is a mismatch between the perceptions of employers and academics about how good a job higher education is doing to prepare students for their eventual workplaces and careers. McKinsey and Company examined the relationship between post-secondary education, skills and jobs in a number of countries. When asked if graduates were adequately prepared for the job market, 72 percent of administrators claimed they were ready, but only 42 percent of employers and 45 percent of graduates agreed.[7] Similarly, a 2014 Gallup survey found that more than 90 percent of chief academic officers at American universities claimed they were doing a very effective or somewhat effective job preparing students for a world of work. Yet, Gallup surveys at the same time found that just 14 percent of Americans, and only 11 percent of business leaders agreed that graduates had the skills and competencies needed to succeed in the workplace.[8,9] A Harris poll conducted in 2019 surveyed the opinions of more than 11,000 people in 19 countries around the world asking them for their opinion of whether their higher education prepared them for their careers.[10,11] The resulting Global Learner Survey reported that 42 percent of Canadians, 44 percent of Americans, 42 percent of Australians, 51 percent of those in the United Kingdom and 45 percent of Europeans said that their higher education did not prepare them for their careers[12]. A survey conducted by the Institute of Competitiveness in Canada (2017) of more than 1,500 employers revealed that 70 percent of them believed that their employees' critical-thinking and problem-solving skills were insufficient.[13] A recent survey indicated that a substantially higher percentage of Americans believe that an internship at Google would lead to better career success than a Harvard degree.[14]

Even university students are expressing concern about how prepared they are for work. In the McKinsey study referred to above, less than half the youth surveyed said that their post-secondary education

A survey conducted by the Institute of Competitiveness in Canada (2017) of more than 1,500 employers revealed that 70 percent of them believed that their employees' critical-thinking and problem-solving skills were insufficient.

prepared them adequately for employment opportunities. [15] A 2019 survey of more than 6,000 Ontario post-secondary students reported that they perceived a gap between the skills they acquired during their higher education and what they will need in their future careers.[16] A survey of more than 2,200 students at York University, Western University, University of Waterloo and University of Toronto (Scarborough and Mississauga campuses) found that only about 44 percent of students felt they had the skills needed to do well in their academic studies, let alone in any future job they might get. Forty-one percent of respondents could be deemed to be at risk to complete their higher education because of their limited skill levels.[17]

If we are to meet the imperative of better aligning the world of higher education with the world of work, it is time to consider some changes in the policies and practices of higher education. This paper suggests a number of such policy and practice reforms, focused particularly on the university sector[i].

[i] Higher education — also known as post-secondary education — in Canada is organized into two broad sectors: colleges and universities. In no way do I diminish the importance of colleges in preparing individuals for jobs. In fact, the traditionally assigned role for colleges is vocational training and they are already better structured and oriented than universities to this task. The rationale for focussing on universities in this paper is that this sector dominates discourse and thinking about higher education. Universities receive the bulk of the policy considerations and attention in government and most students still choose them for their higher education. Universities are the institutions by which Canada competes with other countries in the international higher education space. There is a place for someone to write about the Canadian college system, its contributions and its issues, but this merits a separate paper devoted to this topic. Similarly, there is a need for a piece, complementary to this paper, to present a comprehensive and critical review and analysis of the massive investments in new programs being made by governments to better prepare employees for today's workplaces.

POLICY RECOMMENDATIONS

1. Rebalance university curriculums to emphasize skills development over transmission of content.

A university graduate is expected to demonstrate a certain knowledge base and skillset that includes: disciplinary knowledge (the core concepts, principles, ideas and processes in a field of study); reasonable, if not superior, levels of literacy and numeracy; capacity in a suite of higher order cognitive skills, especially problem solving, critical thinking and good communication; and a set of behavioural (sometimes called "transferable" or "soft") skills such as persistence, adaptability or the ability to work in teams.[18, 19]

Examination of university curriculums, programs and courses reveals an emphasis on content and information transmission. Largely, content is what professors teach and what they evaluate. It is not that the other skills and competencies are considered unimportant. To the contrary, goals such as a higher capacity for critical thinking and problem solving are identified by faculty as one of the most important outcomes of a university education. Rather, it is typically assumed that through the delivery and mastery of disciplinary knowledge, students are at the same time acquiring and honing the other cognitive and behavioural skills, competencies and capacities that, for many years, universities advertised were the desired outcomes of their programs.

While the transmission of disciplinary knowledge and content must surely remain critical components of university education, we now have many surveys and descriptions of the attributes employers expect to see in those they hire. These inventories of desired employability skills tend to emphasize more the critical importance of cognitive and behavioural skills over content and employers thus complain more about the deficiencies in the cognitive and behavioural skills of university graduates, more than any concerns about the amount of information and disciplinary knowledge they have.

Employers increasingly consider skills, more than degrees, of greater importance in the hiring decision.[20] As Jamie Dimon, chairman and CEO of JP Morgan Chase and Company echoed this in a company press release: "The new world of work is about skills, not necessarily degrees." [21] In 2016, the World Economic Forum suggested that the key attributes students needed to thrive were problem solving, critical thinking, creativity and people-management skills.[22,23] Canada's Labour Market Information Council, like other business and employer groups, is increasingly focused on skills required for success at work.

A recent survey of more than 500 hiring managers in the U.S. indicated that the great majority, 74 percent, perceive a skills gap in current workforces and that a majority, 59 percent, say it is becoming more difficult to hire employees with the skillsets modern jobs require. As a result, 67 percent of respondents expect to incorporate formal skills assessment into their hiring decision.[24] A poll of 1,139 people involved in hiring decisions conducted by the Strada Educational Network and Gallup revealed that 77 percent of them would

hire someone without the advertised degree desired or required, and many have already done so.[25] This is why some employers who say they value skills over degrees, such as Google, Apple, Ernst & Young and Penguin Random House, no longer wish to see an applicant's transcript or even require a degree for some of their top jobs .[26,27, 28]

The critical observation here is that the point of intersection between the worlds of the university and workplaces is skills, skills that universities say their graduates should have and want them to acquire and the same ones that employers say they need in their future hires. These two worlds need to be better aligned. They are aligned at the rhetorical level. Universities assert that their graduates have the skills and competencies that employers are identifying as important for job success. The problem is disagreement between university officials and employers about whether graduates have these skills, at least in the numbers required. To create alignment, employers need to clearly articulate and identify which skills are needed for which jobs. For universities, this means more emphasis on the documentation (measurement) and credentialing of skills.

One should not ignore the importance or need for better alignment. For example, in an analysis based on ESDC data, Lane and Murray demonstrated that 97 percent of jobs that have been created in Canada over the last 20 years require a literacy level of Level 3 or better. Yet, they also show that the Canadian education system is over-producing individuals with Level 2 or lower skills and under-producing individuals with Level 3 skills or higher.[29] A reasonable policy goal for Canada is that every university graduate has achieved at least Level 3 literacy and numeracy. Canada is not there yet. Based on some early findings, one estimate is that one in four post-secondary graduates may not have achieved these levels.[30]

Canada should also not ignore the financial and economic impact of skills gains, not just to the individual, but to the country. One estimate is that a literacy score increase of 1 percent could be associated with a 3 percent rise in GDP per capita and a 5 percent increase in productivity.[31]

It may no longer be sufficient to simply assert or assume that university graduates have acquired the employability-related skills that employers say they need and that universities often promise. What is needed now is measurement of skills, not for purposes of accountability, but to identify those programs or individuals who have sub-standard skills and to provide programs and courses to improve the skill level.

How to measure skills in university settings is a matter of considerable debate.[32] Stakeholders should insist that such measurements use psychometrically reliable and valid tests. Such tests are available for some of the skills deemed relevant to jobs and if they are not, it behooves a university system that claims that graduates have these skills to provide the evidence to validate these assertions. There is also no reason to assume that any one set of disciplines in the university is better or more capable of teaching these skills than others. Given the type of skills and competencies that employers are seeking in future hires, such as the capacity for critical thinking and communication, there is every reason to believe that fields of study within

the liberal arts and humanities foster these skills as much and as well, or perhaps even better, than other areas of the academy.

The imperative for universities to focus on skill development will not go away. Governments are already on this. One of the remarkable additions to the recently proposed performance funding scheme in Ontario (to be followed by other provinces) was a metric asking for documentation of skills.[33] Like many other elements of a performance-based funding regime, a policy goal of a greater emphasis in universities on the teaching and measurement of skills and competencies can be introduced smartly and purposefully or poorly. The increased emphasis on skills in university curricula will not go away, if for no other reason than governments and employers are fixated on this issue. It will all work better if universities were firmly engaged in these discussions and plans.

2. Universities should credential skills.

An increased emphasis on skills and their measurement should lead naturally to changes in the credentials granted by universities. The current traditional transcript, that lists the courses a student has taken and the grades they received in them, is insufficient to document the skills and competencies a student has acquired and possesses. This is why, as noted before, some employers no longer wish to see an applicant's transcript for some of their top jobs. In the past, the identity of the institution granting the degree signalled much, if not all, the value employers needed regarding the potential of a future employee. A graduate from a top-ranked, high prestige university was seen, by definition, as highly skilled and employable. In fact, some employers would restrict their recruitment to a limited number of such universities. But it appears that the signal value of one's alma mater has diminished. As noted above, employers are increasingly focused on, and testing for, whether a future employee has the skills and competencies required for the job, regardless of where or how these skills may have been acquired.

Universities, institutions that increasingly advertise how well they are preparing graduates for future jobs, may wish to consider how best to credential and record the skillset of their students. It is something they should be comfortable doing. After all, they are in the credentialing business. The good news is that institutions insist on enormous integrity around the credentials and transcripts they provide. A move to more comprehensive and relevant documents to accompany the traditional transcript will drive universities to attend to the rigour and validity of the instruments being used to assess skills. This, in turn, will motivate considerable research to validate skill-measurement instruments.

An increased emphasis on skills and their measurement should lead naturally to changes in the credentials granted by universities. The current traditional transcript, that lists the courses a student has taken and the grades they received in them, is insufficient to document the skills and competencies a student has acquired and possesses.

The latest trend in the world of higher education is micro-credentials. Nary a week goes by that some government, think tank, policy shop or institution does not forward a new micro-credential analysis or framework. [34, 35, 36] Governments, such as Ontario's, are bringing the world of micro-credentials into the traditional higher education space by specific funding dedicated to the creation of micro-credentials and extending financial assistance to students in these micro-credential programs.[37, 38]

Although there is some confusion about the definition of "micro-credentials," they generally refer to shorter-term programming designed to instill skills and competencies that are job-related and job-oriented. In a rigorous micro-credential environment, the institution offering the micro-credential validates the learning the student has acquired. The promissory note of the micro-credential movement is that students will be able to ladder these short-term credentials for entry into longer, more established programs of study and employers will take these credentials as reliable and valid indicators of the skills and competencies of a job applicant. If all of this were true, one can appreciate the value and utility of a micro-credential and the excitement over their increased use.

The problem is that right now the term and granting of a micro-credential is so haphazard its value and meaning is unclear. Some micro-credentials are granted essentially as a certificate of attendance showing that students have taken a course, with no evidence that the student necessarily learned something in it. Other micro-credentials are being offered for courses or programs where students learn some rote tasks, such as CPR or nasal swabbing for COVID-19 testing[39] Other institutions reserve the granting of a micro-credential when a student has amassed a deeper level of knowledge or understanding about a particular skill, competency and its use. Because there is no good framework, definition of, or quality control on the issuance of micro-credentials, it is unclear to a future employer or anyone else what the credential actually signifies. Equally, other post-secondary institutions that sometimes are already suspicious of the worth of the credentials from other institutions, may not be confident enough to grant prior learning or course credit to someone who holds a micro-credential. Other countries, such as New Zealand, have developed a quality-control and standardization framework with respect to micro-credentials. Canada has not, and, until jurisdictions do, many are appropriately skeptical, if not cynical, about the ultimate utility of the micro-

> **Universities should accept that it is their responsibility to prepare their students for the workplace… Having helped the student to develop the skills, the universities also need to ensure there is good evidence to support the claim that this skill development has occurred.**
>
> - **ALAN HARRISON**, FORMER PROVOST AND VICE-PRESIDENT ACADEMIC AT CARLETON UNIVERSITY, UNIVERSITY OF CALGARY AND QUEEN'S UNIVERSITY, 2017, IN SKILLS, COMPETENCIES AND CREDENTIALS (HEQCO). HTTPS://HEQCO.CA/PUB/SKILLS-COMPETENCIES-AND-CREDENTIALS/

credential movement, particularly its intended goal of a better and more efficient alignment of the worlds of higher education and work.

3. What one studies at university does not predict the jobs one eventually occupies.

Research on the relationship between university education and jobs has focused on two fundamental questions:

- Can future job markets be predicted, and
- Which fields of study (degrees, programs) lead to which jobs?

Considerable research has resulted in clear and definitive answers to these two questions. First, beyond overarching statements about the future direction of workplaces (e.g., digital skills will be more important in future jobs), experts have not been able to predict with any degree of accuracy useful to planning which jobs will be available in the future, in what numbers and at what times. Second, there is not a strong correlation between what one studies at a university and the jobs one eventually gets.[40]

These conclusions frustrate politicians, governments and policymakers who are inclined to create and fund precisely the number of seats in university programs for which there are presumed jobs. This mismatch between the way governments think about the relationship between university programs and labour markets is perhaps best exemplified today with government policies regarding the expansion of STEM (science, technology, engineering and mathematics) programs. Governments, and many others, believe that the health of Canada's future economy depends on a more scientifically literate and numerate workforce. The belief is that students enrolled in and graduating from STEM disciplines will fill these jobs. So, in many countries, including Canada, there is more investment in STEM disciplines with a consequent decrease in funding in the liberal arts and humanities. Yet, research conducted by the Council of Canadian Academies shows that the majority of students graduating from STEM disciplines do not occupy STEM jobs,

and STEM jobs employ a reasonable number of people who have graduated from a non-STEM field of study.[41]

Students have internalized these messages. Enrolment is increasing in STEM, health programs and other fields of study such as business, which students believe are more likely to lead to good jobs. Enrolment in the liberal arts and especially the humanities is dropping precipitously. In fact, enrolment in the humanities is now the lowest it has ever been.[42,43]

Canada continues to persist in actions and policies that assume it can predict the jobs university graduates will have based on the fields they studied, or the programs they took, or the degree they got, at university. The considerable amount of research that has been conducted investigating the relationship between what one studies at university and the jobs one eventually occupies does not support these assumptions.

A more sensible approach to better align university education with jobs is to ask the following: What should a university education look like in a world where the workplaces of the future are more precarious and volatile (the gig economy); where there's no clear understanding of what jobs a student will have; where whatever their first job, they are likely to change careers five to seven times during their working lives, and, more critically, depending on the pundit you believe, a substantial proportion of jobs that will be available to today's students have not yet been created?

The answer to this question focuses once again on skills — skills that universities say are important learning outcomes for them and that employers say are important for success in jobs, regardless of the particular discipline or field of study they pursue at university. Understanding that fields of study do not correlate well with eventual jobs underscores the emphasis on skills and competencies as essential features of a university education and as the sweet spot for the intersection of what goes on in universities and workplaces. And, as noted above, this should orient future students, employers, governments and funders as much to the importance of the liberal arts and humanities - sometimes maligned by commentators as less likely to prepare students for work - as they are to areas of the university such as STEM.

4. Promote greater innovation and diversity in types of universities and their programming.

Although universities in Canada are surely differentiated with respect to structure and mandate, there are not many examples of significant innovations, transformative programming or radical experimentation in Canadian universities, particularly in the domain of undergraduate education. There is more evidence of this willingness to innovate on the research side of these institutions.[44] To better align university education with workplaces, the country might benefit from a greater diversity of universities and the introduction of different types of higher education institutions that deliver programs in different ways than is the current convention. For example, in an informative article titled "The Mayo Clinic of Higher Education," Kevin Carey

describes a new institution that is part of the University of Minnesota public university system. Situated in Rochester, the same location as the famed Mayo Clinic, it offers an interdisciplinary curriculum highly focused on the health sciences, offered in "learning blocks," taught by tenured or tenure-track professors. The programs are highly prescriptive in the early years, but end with a final- and full-year capstone experience that students can tailor to meet their career aspirations. The university was created with very limited capital funding because it used facilities offered in the area. It therefore has few amenities such as fancy fitness centres and instead relies of facilities already available in the community. As it turns out, the university is the most innovative cost-effective higher education institution in the state system. Most important, students get the education they need to lead to good jobs. Using this model as a prototype[ii], the suggestion is that a better alignment of universities and workplaces will be seen by building more of these new, innovative, highly-focused, low-cost universities in their public systems[45]

The **Western Governors University** provides another example. Created in 1997, Western Governors operates in a host of states, providing online, customized programming targeted to areas of labour market shortages such as health, education, business and information technology. The students are not the traditional 18- to 24-year-old cohort straight out of high school. Rather, they have some post-secondary education and work experience, and are currently working and are looking to retrain or upgrade their skills. Students seeking a different or better job, who therefore need to upgrade their credentials (e.g., complete a bachelor's degree), contact the university, which then conducts a gap analysis between the students' current knowledge and skills and those necessary to achieve the credential the student will need for their intended job. An individually assigned mentor then designs a program of study using online courses and programs that mostly others have developed and are then customized to meet the learning needs of the student. The university assesses skills and competencies as the students progress through their personalized program of study. At completion, the students receive the appropriate credential, often indistinguishable from that granted by traditional universities in the jurisdiction, and a transcript that lists the competencies a student has achieved. The university charges the student approximately USD $3,000 per semester, less than many students in Canada are paying for their undergraduate programs. Because of the assessment of prior learning and the customized online programming, many students can fast-track their degrees. The average student completes a bachelor's degree in 2 ½ years. The satisfaction levels of students are significantly higher than national averages. Most importantly, the labour market outcomes — whether graduates get jobs and the quality of those jobs— are as good, if not better, than for those graduating from traditional universities.[46] Few Canadian universities have features that resemble Western Governors', and perhaps

[ii] "The Michener Institute of Education at University Health Network is one example in Canada looking to follow this model. See the Brave New Work case study for more on how their unique governance model is working for students and employers during the pandemic and beyond.

none has the full suite of services and processes it offers. It would not be difficult to import a campus of Western Governors into Canada and if this country is seeking innovative models well-tailored to the needs of students and employers, it might well consider an invitation for the franchise to move north of the border.

Finally, Canada is behind the U.S. in adopting university curriculums based on a competency-based education (CBE) framework, a model that might be particularly well suited to ensuring that graduates leave post-secondary studies with the skills employers are seeking.[47]

In a traditional university curriculum, courses adhere to a fixed seat-time model (e.g., a course is delivered in three 50-minute classes per week for 13 weeks), are biased to content and evaluate how much of the material a student has absorbed. In contrast, CBE privileges the teaching and learning of skills and competencies over content. More important, it works with the view that students should master all of the material, appreciating that it will take some students longer to master it than others.[48]

A complete CBE program contains the following elements:

1. competencies are clearly articulated as outcomes of the program;
2. competencies are assessed using proper psychometric instruments and students progress only when they demonstrate mastery;
3. programs are designed after an initial assessment of prior learning and current competencies;
4. students learn at their own pace so different students take different times for mastery of the material;
5. graduates receive a credential describing the competencies the graduate has mastered.

Several prominent universities in the U.S. — including Michigan, Purdue and Wisconsin — have incorporated CBE into some of their programming, in many cases because it is seen as a compelling model that decreases student debt loads (because students finish their programs faster) and one that successfully addresses the concerns of employers about inadequate skill level of university graduates. The U.S. can boast a **Competency-Based Education Network** and scores of institutions that are adopting this perspective on undergraduate education. Canada has few, if any, equivalents.[49]

If the country is to sustain a university sector that is better aligned with the needs of today's workforces, it should embrace and accelerate the emphasis on skills in higher education and permit and develop a greater diversity of institutions designed specifically to address the university labour-market gap. There are, of course, different ways to close this gap. As author Ryan Craig suggests, Canada can develop a suite of institutions and training centres that are designed specifically to fill the gap between the skillset university graduates have and the skills and competencies required by employers.[50] But a rejigging of university programs to better accommodate the concerns of employers (and their students) would have the same

effect. If universities fail to meet the challenge, there is little doubt that a proliferation of such organizations in Canada will occur and, given the propensity of government now to fund such agencies and intervenors, they are likely to receive funding.

5. Relax government regulation and bureaucracy to permit greater innovation and diversity in the university sector.

The discussion above of the benefits of a greater diversity in university programming and types of universities intersects directly with policy areas relating to the role of governments as regulators of public universities. In contrast to the perception of many, universities are highly regulated. Governments regulate the main sources of university revenue — public grant and tuition. Governments directly or indirectly influence, and sometimes actually control, the main expenditure of universities — namely, salaries and benefits. Governments are increasingly prepared to require universities to adopt policies and practices in areas such as freedom of speech or mental health. For the purposes of the current paper, though, the most critical areas of government regulation are the regulatory and bureaucratic control they exert on approvals for which educational institutions can operate in their jurisdiction, which programs a university can offer and the credentials a university can grant.

Universities are tagged with the reputation of being slow to change and innovate. There are many potential reasons for this, including timid academic leadership, governance challenges and the inhibiting force of today's quality assurance processes. A major factor, though, has to include the innovation-squelching force of undue government regulation of higher education.[51]

No matter how ambitious or innovative a university or its leaders wish to be, it cannot make changes, develop new or transformational programming, or introduce meaningful innovations without the approval, blessing or at least the benign neglect of government. Even a quick discussion with individuals who have made such attempts reveals how government regulation and bureaucracy have impeded and frustrated attempts to spawn new types of institutions into the higher education sector, or introduce truly innovative or transformational curriculum changes that might do a better job of aligning university education with the world of work.

Is there a role for government in regulation of universities and quality assurance of programming? Of course. But the larger problem in Canada now is not the quality of our universities, but rather the need to promote and accelerate more innovation and experimentation in the higher education sector. Current levels of government regulation are simply too onerous, odious and frustrating to allow this to happen with any reasonable speed.

There are encouraging signs. Ontario, for example, has just approved the creation of an independent, private, not-for-profit business university, International Business University, focused exclusively on business

programs. The COVID-19 pandemic, that brings with it increasing funding challenges to universities and more pressure on governments to assist displaced and unemployed workers, may require, or force, universities to innovate more and governments to lessen regulatory and bureaucratic constraints to let them do so.

6. Target the equity of access challenge.

Canada is a world leader in access to and participation in higher education. Every year the Organisation for Economic Co-Operation and Development (OECD) provides a detailed report called *Education at a Glance* of key education statistics for its 36 member countries. The 2019 report shows that Canada ranks third among OECD countries, and top among G7 nations, in the percentage of its 25-34-year-old population that has a tertiary (college or university) education.[52,53] Access, ensuring a spot at university for every qualified student, has long been the dominant priority policy in Canada, and it has worked. Enrolments in higher education in Canada have risen dramatically, with the majority of this enrolment growth in the university, not the college, sector.[54, 55]

It's been known for some time, though, that not all Canadians have an equitable chance to access university education. Students from low-income or first-generation families (families where neither parent has attended post-secondary), Indigenous learners and youth from other cultural and ethnic groups do not attend post-secondary education in equivalent numbers to those who come from other segments of society. This disparity is known as "the equity of access challenge."[56, 57, 58, 59, 60, 61]

Lack of equitable access to university education is problematic because a post-secondary education is still the best predictor of future earnings and financial insulation against times of economic recession or job loss because of situations such as plant closures or pandemic.[62] Research also reveals that those from traditionally under-represented groups who complete post-secondary studies enjoy as many of the benefits of attending post-secondary studies as those who come from backgrounds more highly represented in higher education.[63]

The assumption has been that if Canada increased overall enrolment, and provided more financial aid to students starting university, it would shrink the participation gap between well-represented and under-represented groups. This has not proven to be the case; for example, there is still a significant gap in university participation between students who come from lower- versus higher-income families.[64]

Financial assistance for students to attend university is always part of the solution to close the equity access gap. But it is not sufficient. There are a host of social and cultural factors that also influence whether someone will choose university. And it is understood that the decision to attend university is made much earlier in schooling than at the time someone approaches the end of high school. [65,66,67]

To close the equity gap, Canada needs programs targeted to those who are less likely to attend university offered at the time that decisions or inclinations to attend post-secondary studies are being formed.

These programs should address the financial, social and cultural factors that lead these individuals to eschew a post-secondary education. Successful programs, such as Pathways to Education, that are helping to resolve the equity gap, incorporate these elements.[68] These programs are expensive, but as Deller & Tamburri have noted, programs that include a comprehensive range of personal, academic, financial and socio-cultural supports — elements offered to students in secondary school — make it more likely that currently under-represented students will attend post-secondary education and succeed in it.[69]

Current policies and programs intended to motivate more under-represented students to go to university are primarily financial in nature and directed at students when they are finishing high school. Successful policies will need to consider and accommodate better the research emphasizing the role of non-financial factors and the appropriate timing of these interventions. Students who do not attend post-secondary education are also the ones who will likely have the greatest difficulty transitioning to more stable employment, are more susceptible to work disruptions in instances of economic recessions or job losses, and are most in need of retraining and up-skilling programs during their work career. Policies and practices that result in more currently under-represented students to enrol and succeed in university may provide a lifelong insulator and buffer against disruptive workforce challenges.

7. The requirement for greater evaluation of policies and practices.

As noted, developing the workforce of the future with the capacities, skills and competencies needed in modern labour markets is a prime policy priority of governments, and appropriately so. Much money is being spent on this challenge, allocated to a veritable cornucopia of new and expanded programs believed or purported to develop the talented workforce the Canadian economy needs. These funds are going to traditional educational institutions and a host of retraining, up-skilling and upgrading programs. Some of these funds are targeted to entry-level jobs, others to mid-career employment challenges.

It is good to be attending to these issues. As the labour economist Robert Reich has written: "The thing about the 21st century economy that distinguishes it most sharply from the economy that preceded it is the central importance of people's minds and skills. 'Human capital' is the asset that matters most." [70] Anything Canada spends to develop and optimize human capital is good for the country.

Current understanding of how best to develop this human capital at different stages of education and a working life is incomplete. Canada needs to innovate and experiment. By definition, some innovations will succeed and achieve the desired outcomes, and others will fail. The central point is to understand what worked in order to disseminate that learning and those best-practice results to other programs. Knowing what failed will prevent spending more money on programs that are ineffective. The only way to know what worked and what did not is to ensure new programs and projects that are developed, mounted and funded are rigorously evaluated.

A good example is the significant investment Canada is making in the development and proliferation of post-secondary co-op programs. This investment is being made in the belief that a co-op experience fosters and develops skills and competencies that are part of a university education and that are relevant to success in the workplace that cannot be taught through books and lectures. But the nature and design of co-op programs can be quite varied in terms of what is required of the student, how students are asked to reflect and learn from their co-op experience, the level of engagement with the employer and work environment and how student learning is evaluated. Knowing which types, designs or elements of co-op programs are effective is only possible if schools evaluate the actual learning and skill development and compare it to those the co-op opportunity was designed to produce. Canada spends millions introducing and implementing new programs and innovations. It is good policy to require that some portion of that money, and it does not require a lot, be devoted to evaluation of whether the desired outcomes were actually achieved. Better policy yet is to ensure that the learnings from these evaluations are disseminated and woven into the design and funding of future programs. Canada is not there yet. An insistence on evaluation of the outcomes of the use of public funds should be a requirement of any funding program and an obligation on those who receive these funds.

CONCLUSION

The public university system has made significant, enduring and critical contributions to the social and economic health, vitality and quality of Canadian society. It, along with the other components of Canada's education ecosystem, are some of the most important institutions in this country to ensure a prosperous, robust and competitive Canadian society. The Canadian university system has risen to the challenge on many occasions. Consider the massive contribution Canadian universities made to the education of veterans and their integration into the workforce after the Second World War.

While the contribution of Canada's universities to the country's economic well-being has always been acknowledged, Canada is at a point of considerable angst and concern over whether it is producing and fostering the talent and human capital necessary to ensure a competitive Canadian economy. Part of this worry arises because of changes, in some cases dramatic ones, in the nature of work, the emergence of a growing gig economy, continued loss of manufacturing jobs, greater global competition, to name a few. The pandemic undoubtedly adds a pessimistic and worrying overlay to all of these issues, including worries about how the country will recover from the pandemic and the consequences of the economic and social disruptions it has caused.

This paper starts with the conviction that the work of Canada's universities is part of the solution. Granted, they are not the only element of the solution, but are a significant part of it. And from what I know, there is no question of the willingness and resolve on the part of Canada's public universities to make their contribution.

This paper makes several suggestions, though, some related to policy and others to practices, to enable Canada's universities to effectively address the concerns and contribute even more to these societal challenges. It is argued that one helpful change is a re-orientation in the core mission of universities and

Canada needs to internalize the evidence of how a university education relates to the jobs graduates eventually have. Otherwise, misguided policy and funding decisions that fail to appreciate what it is about a university education that prepared individuals for job success will persist.

undergraduate education to include a greater focus on fostering and credentialling skills over content and information.

In addition, Canada needs to internalize the evidence of how a university education relates to the jobs graduates eventually have. Otherwise, misguided policy and funding decisions that fail to appreciate what it is about a university education that prepared individuals for job success will persist.

Similarly, the paper argues for greater innovation, more experimentation and greater diversity in the types of institutions in the university ecosystem.

Universities can accomplish some of these things on their own. But, as the paper argues, they would also benefit and do more if there were a relaxing of government regulation and bureaucratic control over their procedures and operations, a policy direction that appears to be difficult for provincial governments to embrace. In fact, governments appear to be going in the opposite direction.

The paper argues also for consideration of policy and program changes to increase the probability that those within Canadian society who currently are under-represented in our universities, and who might benefit most from university education, enrol in greater numbers.

Policy and practice changes are never easy. Change is often resisted. New policies and practices must be considered, adopted and evaluated in the context of sound research, rigorous evaluation and critical and strategic thinking. These attributes are not foreign to the university; in fact, they are its very core. It's nice to think governments fashion policy with the same perspective and value set, this is not always the case. For both universities and governments, though, to reshape the policy and practice landscape to better align the worlds of universities and workplaces, Canada may wish to heed the admonition of John Maynard Keynes who, in the introduction to his book *General Theory of Employment, Interest and Money* wrote: "The difficulty lies not in new ideas, but in escaping from the old ones, which ramify…into every corner of our minds." It's not a bad idea to embrace some new ideas and purge the old ways of doing things.

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