POLICY Brief

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Universities and the New World of Work: A Strong Relationship with Room for Improvement

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There is considerable debate over the contribution of universities to the new world of work. It's a world often characterized as precarious and volatile, with generally increasing skill requirements. There are many stories of university graduates being unemployed or not working to their potential. Yet the imperfect evidence available indicates that, on average, graduates do well.

As the Canadian economy settles into a lower growth path, held back by mediocre productivity, there is growing focus on the labour market. With 1.7 million students, that attention quickly turns to universities as they will provide a large portion of the future labour force growth, outstripping the contribution from immigration. The increased focus is accompanied by efforts of employers, governments, students and analysts to improve an already strong relationship between universities and the modern workplace. Still, there is much room for further improvement.

A feature of the new world of work is the requirement for a broader range of skills or competencies. Discipline-specific knowledge is still necessary, but is no longer sufficient. As work changes rapidly within firms and within occupations and industries, and as workers increasingly have multiple careers, the so-called "soft" or "transferable" skills, such as teamwork, resilience, persistence, flexibility/adaptability and socio-emotional competencies, are drawing a premium.

Some universities embrace the need to develop broad competencies in their students. With learning outcomes above and beyond discipline-specific knowledge, they are trying to shift from a quantitative perspective on education, such as counting degrees, to a qualitative dimension where a key quality is how well a university education serves individual and society well-being over the longer-term. Such a focus is not the traditional domain of university teaching and learning. Shifting further to the competency-based approach for which employers seem to be asking, would amount to a revolution on campus. It would be a revolution requiring innovative approaches. That's because some of the effects of constrained budgets, such as larger classrooms, compromise the ability to develop and measure competencies.

The link between workplace and university

Canada has long suffered anemic productivity relative to other countries along with unequal income distribution. If recent trends

continue, Canada will likely experience future output growth of only about 1.5 per cent per annum. Among other challenges, this will make it difficult to fund health care for an ageing population.

In the quest to understand Canada's poor productivity performance, attention has been paid to factors such as capital, innovation and trade. Only recently has focus increased on the labour market, and in particular skills and skill matching, reflected in the Organization for Economic Co-operation and Development's seminal 2015 manifesto. It concludes "there is much scope to boost productivity and reduce inequality simply by more effectively allocating human talent to jobs".[1]

The OECD's work highlights why addressing Canada's poor productivity record is so important. The 2015 study found Canada's labour utilization (work effort) exceeded the average in the upper half of OECD countries, but its level of labour productivity was more than 20 per cent below the average. Canada's labour productivity was more than 25 per cent below that of the U.S.

Standard estimates are that at least two-thirds of new jobs in the near future will require some form of post-secondary education. This increasing focus on labour markets has naturally turned a spotlight on the links between universities and the workplace. The sheer number of university students in Canada—1.7 million including full-time, part-time and continuing education—supports that attention. Further, between March 2008 and March 2017, three times as many new jobs were created for university graduates than graduates of all other types of post-secondary education combined.[2]

From the perspective of preparation for the workplace, the spotlight on the links from universities to the workplace has not, however, been as focused as it should have been due to poor data and misplaced emphasis on the quantity rather than the quality of education. Fortunately, improvements are being made.

Better than suggested

Universities are often criticized for producing graduates who struggle in the labour market. The point in the criticism is that university graduates are not realizing their income potential, nor putting to use their full range of skills.

The reality is we suffer from poor data to track what happens to university graduates in terms of employment and income. However, the data available do not support the more extreme and pessimistic versions of how graduates fare in the workplace.

Standard evidence cited of failure by graduates to get jobs is the high youth unemployment rate. In March 2019 the youth unemployment rate in Canada was 10.7 per cent. While still high at almost double the overall unemployment rate, it is has come down significantly in recent years. But note that it is a very blunt, and largely inappropriate, measure to gauge what is happening with university graduates. It covers ages 15-24, so many of the youth in the measure are too young to have graduated; covers youth at all levels of education, not just university; and, includes full-time students.

Another standard marker is "over qualification". The OECD's 2015 study measures the labour market demand-supply imbalance as the sum of the percentage of workers who perceive they are under-skilled and over-skilled for their jobs. Of the 22 OECD countries studied, Canada had the second lowest level of skills mismatch and the fourth lowest level of over-qualified workers. So Canada looks rather good on a relative basis.

Yet Statistics Canada's absolute measures of over qualification for university graduates paint some grim pictures. Across all fields of study, for 2016 Statistics Canada finds 17.4 per cent of graduates are over qualified. However, over qualification is quite low for some fields, such as nursing, engineering, mathematics and computer and information service. It is more than 25 per cent for arts and humanities and social and behavioural sciences.

One unfortunate reaction to estimates of over qualification would be to reduce the flow of university graduates. It could only be justified by a flawed concept that output and production processes in Canada are fixed. But output is not fixed in a small, open economy. Production processes are not fixed either. Bright, educated people do not need to work only in the field they studied. They and employers can branch out, particularly if transferable skills have been developed.

Preferable would be for employers to better use the superior education of the population to raise output, employment and incomes. Markets can be expanded in other countries. Imports can be displaced. Production processes can be made more efficient by bright, educated people.

High demand disciplines

Another possible reaction is to dramatically change the mix of what university students study and learn. Such a process is underway within universities. A prominent shift in enrollment has been taking place towards disciplines generally thought to be in high demand, including business management and public administration; physical and life sciences and technologies; mathematics, computer and information sciences; architecture, engineering and related technologies; and, health and related fields. However, we should note that over qualification may possibly indicate employers are applying too narrow a mindset on who they hire. Are they stuck in a mode of seeking only employees with fairly direct education and training in the type of work the company does? This would seem to defy the growing evidence that all businesses and occupations can productively tap into good employees from a variety of backgrounds. It also seems inconsistent with evidence revealed of late that employers seek a variety of skills in recruits, going far beyond discipline-specific knowledge. Over qualification may also reveal a tendency for students to focus job search in areas naturally associated with their studies. If they have developed transferable skills, their horizons could and should be cast much more broadly.

Related to the concept of over qualification is the measure of university graduates not working in jobs related to their field of

study. Implicit in the notion of over qualification is graduates were not able to find work in an area they are best suited for by nature of their university program. The measure is taken as a failure of university education, or at least of the link between universities and the workplace.

The Education Policy Research Initiative (EPRI) provides a useful longer-term perspective on how graduates are doing. It linked administrative data on students from 14 post-secondary institutions to tax records to track the labour market outcomes of Canadian diploma and bachelor's graduates from 2005 to 2013. There are significant differences across fields of study. Engineers, for example, did best. But graduates of all disciplines did quite well. The EPRI highlighted the earnings for humanities graduates, as humanities are often cited as a discipline not in sync with labor demands. While humanities graduates do earn less than graduates in most other fields, their incomes did start at $32,800 and rise to $57,000. The result that "even general arts and science graduates do relatively well in the labour market" led the EPRI to conclude that graduates "have skills that are valued by employers".[3]

The OECD estimates strong internal (i.e. the return to the individual for their investment in their education in terms of time and money) and social (i.e. the return to society for the public investment) rates of return for tertiary education (somewhat broader than universities to include some vocational programs). The private rates of return are 13 per cent for men and 17 per cent for women in 2015. The respective social rates of return are eight and seven per cent. Again according to the OECD, the employment rate for 25-64 year-olds in 2017 across all levels of education was 77 per cent, but 83 per cent for those with a Bachelor's degree and 85 per cent with a Masters.

The STEM proposition

Some popular beliefs about the links from universities to the workplace do not stand up to evidence. One is that far more university students should be in the STEM disciplines (science, technology, engineering and mathematics). This often correlates with the suggestion the displacement should be from humanities and other social sciences.

The message must be much more nuanced than a generic shift to STEM studies. Not all STEM disciplines are producing graduates with strong employment and income records. STEM graduates in some disciplines do not do well in the workplace. In the National Graduate Survey of the 2010 graduating class, graduates did not do well in terms of income as it relates to computer science, mathematics, as well as computer and information sciences and support services.

The Canadian Council of Academics investigated the frequently heard position that Canada needs a lot more STEM students in order to drive innovation and productivity growth.[4] Instead their analysis led them to conclude that working smarter relied more broadly on "problem solving, technological proficiency, and numeracy" and these traits could and should be reflected across all disciplines. In other words, there should be some STEM in everyone, but not necessarily only STEM.

Lifetime Well-being

University education should have several objectives with respect to the individual student and to society. Lifetime well-being of the student should be a goal, which is much more stringent than job success in the first few years after graduation. First, well-being is a much more comprehensive measure than employment and income. Health, concern for the environment, civic duty and other attributes have been shown to play into well-being. Fortunately, research suggests these are well correlated with education. Second, maximizing outcomes in the near-term is likely easier than positively influencing results over a life. Moreover, different approaches are likely required. For example, near-term results may be maximized by focusing on current labour market needs. Longer-term success likely requires an emphasis on adaptability and flexibility.

Moreover, university education should raise the well-being of all citizens, not just those who undertake the studies. This social aspect includes higher output and incomes. In turn this requires universities to produce the graduates who will facilitate success of Canadian firms, domestically and globally. Drilling down one step further, that means meeting the skill requirements of employers. Again this does not just mean meeting the demands of today. They will change. Students must be equipped with the skills to adapt.

Clearly, the social perspective on higher education should go beyond employment, income and output to include the broader benefits of a more informed, engaged society.

The Skills that Matter

To the degree necessary to set priorities on competencies, whether for financial or other reasons, it may pay to focus inordinately on literacy and numeracy to begin. These two competencies are found in common in every list of requirements, whether it be from the perspective of students, employers, universities or others. Further, there may be a pay-off to focusing on a particular cohort, that being students who might not be performing at a high level of literacy and numeracy. We know from studies by the OECD and others that higher levels of education bring, on average, higher levels of literacy and numeracy. But those averages likely disguise the reality that not all students or even all graduates have particularly strong literacy and numeracy skills. A priority could be to bring the skills of those students up to or at least closer to the averages realized by university graduates.

Universities will need to reverse the balkanization of increasingly stand-alone disciplines. The modern workplace calls for a wide array of skills. They will not come from a single discipline. Further, many of the transitional or soft skills are in common across disciplines. There is no reason, and it seems inefficient, to teach and measure them in separate discipline silos

This perspective on the objective of university education puts the focus squarely on outcomes. It contrasts with the current focus largely on inputs such as degrees and dollars spent. A emphasis on outcomes also permits an assessment of efficiency within universities, something that cannot be properly measured if there is a pre-occupation with inputs.

One of the greatest tests of the link from universities to the workplace will be how well universities serve the large cohort of young Indigenous People. The 2011 National Household Survey revealed that just under 10 per cent of Indigenous Canadians aged 25-65 had a university degree, less than half the 25.9 per cent for all Canadians. The current cohort of young Indigenous People could account for as much as 21 per cent of Canada's labour force growth through 2036.[5] The contributions will vary greatly by region, with highs of 83.1 per cent, 72.9 per cent and 52.2 per cent in the three territories, Saskatchewan and Manitoba, respectively.

Conclusion

The next step is to understand the context from which the objectives must be pursued. That begins by accepting what is not possible. In particular:

1. We cannot accurately predict what jobs there will be in the future and what requirements they will have. It may be possible to develop ideas about broad trends. But these trends could be well off as they are by necessity largely dependent upon the past and that may not accurately represent the future. The only thing that we can be fairly certain will carry over from the past and present is that the workplace has been precarious and volatile and will remain so.
2. There will never be a tight relationship between what is taught and learned in university and what is required on the job. The relationship may stand to some degree for a time, but it will surely breakdown in short order and eventually could become unrecognizable.

Accepting what is not possible means the focus of university education has to change from being inordinately on the near-term, which might tend to lead to education and training in specific skills of today, to preparing students to adapt over the longer-term. This flows from that familiar theme that today's graduates may well change careers five to seven times over their life time. Of critical importance is what skills are transferable across all that change? What facilitates the required adaptability and growth?

All stakeholders need to work together to continue improving information. We need a better idea of what happens to university graduates in the work place. Not just for a few years, but over a long period. If, as is commonly asserted, today's graduates will likely have several careers, we should have data that tracks how and why they transition from career to career. Was the transition easy or difficult? Did their university training facilitate the transfer? Did they transfer through choice, company bankruptcy or demise of the former occupation?

We need the information that will allow for a mapping of certain characteristics of learning to workplace results. For example, if competency-based education is superior, we should be able to identify students taking studies under that approach and see superior results.

Finally, we should better measure the broader benefits of higher education to society. This is typically encapsulated in the cold, hard statistic on the "social rate of return". This could be brought to greater life through measuring the ways in which the educated person brings higher value to society.

References

View the online version of the *JSGS Policy Brief* for a complete list of references.

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