

# TRENDS IN HIGHER EDUCATION

The University Productivity We Need:

## **The Ontario Faculty Perspective**

March 27, 2013

# OCUFA

Ontario Confederation of University Faculty Associations  
Union des Associations des Professeurs des Universités de l'Ontario

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## Executive Summary

The idea of “productivity” in higher education is becoming a concern for some policymakers and observers of Ontario’s universities. This interest is fuelled by the province’s challenging deficit situation, which has put a premium on “doing more with less”. Productivity is featured in the Government of Ontario’s recent discussion paper, Strengthening Ontario’s Centres of Creativity, Innovation, and Knowledge, and was a prominent focus of the Ministry of Training, Colleges, and Universities strategic mandate agreement process.

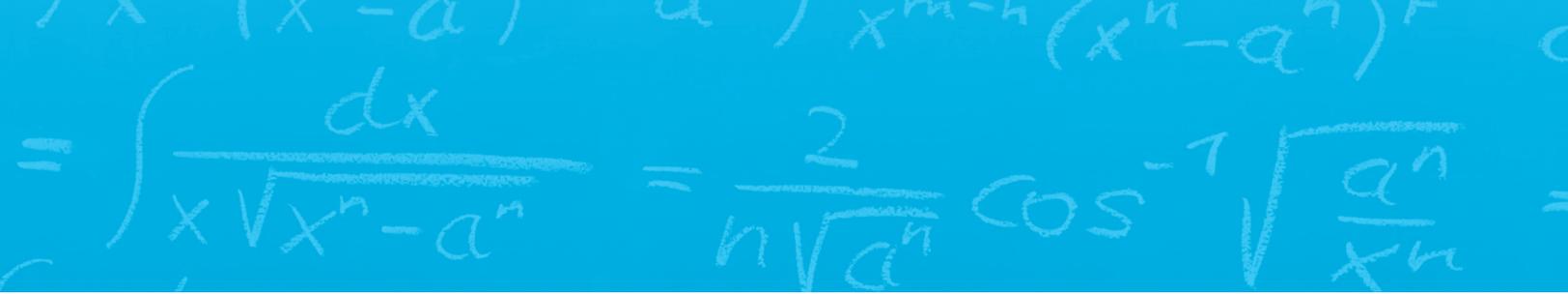
Given this interest, this issue of Trends in Higher Education provides an analysis and commentary on the productivity agenda. Overall, it argues:

- The discussion in Ontario has no clear definition of productivity, which makes serious or useful discussion of the issue difficult.
  - Ontario’s universities have already made significant productivity gains – decades of under-funding and rising enrolment have meant that professors are already teaching many more students with much less public funding.
  - This productivity increase has done little to improve the quality of education at Ontario’s universities – in fact, by many measures quality has come under threat even as productivity has increased.
  - For professors and academic librarians, the most meaningful measures of productivity are attainment rates and research output.
  - These two measures of productivity are not mutually exclusive; they support and enrich each other.
  - Proposed productivity enhancements, such as increased faculty teaching loads and increased use of online learning, are properly seen as secondary to the broader goals of greater student success and research effectiveness.
- Over-focusing on these secondary elements – like teaching loads and online learning – is ineffective and may harm larger productivity goals.
  - A productivity agenda focused on reducing government investment in higher education will have a negative effect on higher education in Ontario.

## Productivity and Ontario Universities

“Innovation” and “productivity” are terms that typically refer to the performance of labour markets and economies, but they have recently made their way into discussions about post-secondary education in Ontario. Universities educate many of the talented people and produce much of the research that drives innovation and economic growth in this province. It is therefore not surprising that the Ontario government would turn to universities to help address the province’s economic challenges. And given the current fiscal environment, it is also not surprising that the provincial government would seek to ensure that the public gets the greatest return on the investments it makes in universities.

However, Ontario risks sacrificing the quality of the education and research offered by our universities if we focus exclusively on making universities more “innovative” and “productive”. Technocratic definitions of innovation and productivity are narrow and too often driven by the desire to reduce government investment in higher education and fail to account for the many important social and economic roles of the university. A push towards this narrow definition of productivity will damage our institutions, making them less productive for students and the communities in which we live. Ironically, the drive to making universities more “innovative” and “productive” may actually prevent them from driving innovation and productivity. University productivity is most meaningfully captured by measures of research output, and attainment



rates. These measures speak to the ability of universities to foster broadly based student success, and to conduct the research needed to advance our society and strengthen our economy. It should be noted, however, that perfect measures of productivity in higher education do not exist. Learning and discovery, like many human activities, defy easy quantification.

This research commentary provides an overview of the different definitions of productivity that are frequently applied to universities. It also provides a critical analysis of two proposals for increased instructional productivity that are often discussed – the use of online learning and increasing faculty teaching loads. The analysis explores the recent effect of strategies to cut costs in Ontario’s universities and outlines some overarching concerns with the emerging focus on increasing university productivity in Ontario.

## 1. CONTRASTING DEFINITIONS OF PRODUCTIVITY

As a basic concept, productivity is a measure of outputs relative to inputs – a highly productive system produces a large number of outputs for relatively few inputs. An unproductive system requires a large number of inputs to produce each output. However, productivity in the real world is much more complex. This is particularly true with universities.

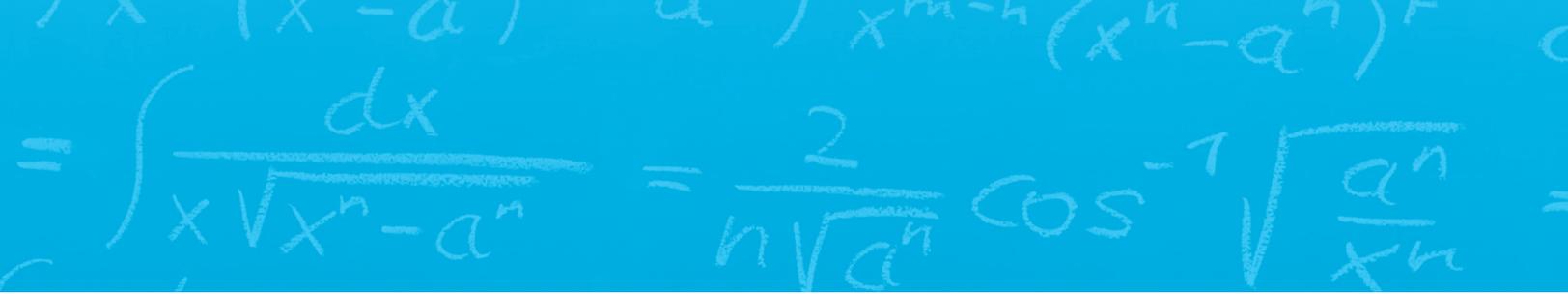
Modern universities are complex institutions that embody many different mandates and missions. As a result, there are a range of opinions about how to understand and measure productivity within universities. Assessing productivity on the basis of easily quantifiable outputs such as degrees awarded or patents obtained is not reflective of the diversity of educational, research, and service activities that occur within and across universities (National Academy of Sciences, 2012; University of Delaware Office of Institutional Research, n.d.; Snowdon, 2011). Further, the “products” of a

university, such as student learning, new knowledge, and contributions to the community are not outputs in the usual sense, making it difficult to assess the productivity of institutions or the faculty members who provide the education, conduct the research, and engage in service to multiple communities.

Contrasting conceptions of university productivity have been presented by a range of higher education stakeholders and policymakers. For example, a recent report by the Higher Education Quality Council of Ontario (HEQCO) acknowledges that significant conceptual and methodological challenges and data gaps exist when it comes to measuring productivity in higher education and notes that the tendency is to rely on measures that pertain exclusively to instruction. On the available comparative evidence, the report concludes that Ontario’s universities and colleges are deemed to be “quite productive” (Higher Education Quality Council of Ontario, 2012). However, the report also suggests that further explorations of productivity in the university context should assess system and institutional productivity on measures of graduate labour market preparedness. It also suggests that faculty productivity should be measured on the basis of individual faculty teaching load. These are problematic conclusions.

In June 2012, a discussion paper titled *Strengthening Ontario’s Centers of Creativity, Innovation and Knowledge* was released by the Minister of Training, Colleges and Universities. The paper calls for increased productivity at Ontario’s universities but offers little clarity about how productivity in Ontario’s colleges and universities should be conceived. The paper reiterates some proposals from the report of the Drummond Commission on the Reform of Ontario’s Public Services and focuses almost exclusively on teaching and learning.

The Lumina Foundation, a charitable organization that seeks to increase university attainment rates in the United States, conceives of productivity in higher education on a large scale. In their



view, productivity is determined on the basis of attainment rates (Lumina Foundation, 2010; Lumina Foundation, 2011; Center for College Affordability, 2010). Attainment rates are a function of participation rates – the proportion of the population pursuing post-secondary education – and graduation rates. If one remains the same and the other increases, or both increase, the attainment rate rises. The Lumina Foundation stresses the need to improve graduation rates. The National Governors Association, a voluntary association of American state governors, frame the graduation rate as “student output relative to input” or the ratio of credentials awarded to students enrolled (Reindl & Reyna, 2011). Increasing the graduation rate will improve what the National Governors Association refers to as “return on investment” – increasing the number of credentials awarded for the same level of government and tuition funding reduces the average cost of a credential. At this general level, increasing graduation and attainment rates are policy goals compatible with the desire of university faculty members to see their students succeed. Rising attainment rates mean that governments are getting a better return on investment and more students are achieving the many benefits of a university education. Increasing attainment rates is one of the central goals by which all productivity measures should be evaluated.

Another important productivity measure within universities is research output. Research output is not simply a question of the number of journal articles or citations an institution receives, but refers to the sum total of new knowledge, applied research, and innovation generated by a university or group of universities. Research output is intimately linked with attainment rates; the two inform and enrich each other. University teaching – and the student attainment it promotes – depends on research-active faculty. Research, in turn, is tested and refined in the classroom, and many students become deeply engaged in the research activities of the university. So far, research has not figured prominently in Ontario’s productivity discussions, but increased

research output is a centrally important measure of university productivity.

In addition to these large scale conceptions of productivity, we can distinguish between three smaller scale, secondary categories of productivity improvements: administrative, design, and instructional. Administrative productivity encompasses business efficiencies and economies of scale that are achieved by integrating back office functions. This produces savings that can be reinvested in the education and research functions of universities. Design productivity ensures that students move as quickly through their studies and obtain their credential in as short a period of time as possible. Design productivity can be achieved at the system, program, or student level. At the system design level, credit transfer, program consolidation, and credential transfer proposals are meant to eliminate duplication. At the program design level, three-year credentials, experiential and online learning, and outcomes-based qualifications aim to produce a similar effect. At the student level, “credit caps”, or limits on the number of courses a student can take, have been proposed as complements to system- and program-level changes. Proposals for increasing instructional productivity include initiatives such as increasing faculty teaching loads or increased use of online learning technology.

## 2. ANALYSIS OF PRODUCTIVITY PROPOSALS

Two proposals for increasing instructional or faculty teaching productivity that have received considerable attention include expansion of the use of online learning technologies and increasing the number of courses that full-time faculty teach. In both proposals, there are both potential benefits and drawbacks.

### 2.1 Online and blended learning

The TCU discussion paper highlighted increased online learning as an innovation that could help

boost productivity in Ontario's universities. Online learning technology in post-secondary education can be used in two ways: as a replacement for in-class instruction or as a complement to in-class instruction in "hybrid" or "blended" courses.<sup>1</sup>

In the case of online courses that replace in-class instruction, it may indeed be possible to accommodate the instruction of more students per full-time faculty member, thus lowering instructional costs. For example, Athabasca University is a well-regarded institution that specializes in online distance learning. Compared to the traditional universities in Alberta, Athabasca's per student operating costs are lower but its student-faculty ratio is two-thirds higher than the average in the rest of Alberta's public universities. The higher student-faculty ratio allows for lower per-student faculty salary costs. In order to maintain quality in the face of a high student-faculty ratio, however, Athabasca must spend more on "other instruction and research" salaries for teaching specialists and assistants who provide one-on-one support and direct interaction with students that would otherwise occur in group tutorials in a traditional in-class model. The pattern is much the same at Télé-université/Université du Québec à Montréal (Téluq) and Thompson Rivers University (TRU), which offer a mix of traditional in-class and online courses.

Delivering education online and doing it well is not cheap. Athabasca University manages to deliver programs more cheaply than traditional universities in Alberta, but its per-student operating costs are still 25 per cent higher than the Ontario average. Per-student academic salary expenses are also higher, by 11 per cent. While Athabasca's operating costs are significantly higher than in Ontario, the *average* per-student cost between Athabasca, Téluq and TRU are 9 per cent lower than the operating costs at Ontario universities. For Ontario to achieve savings of a similar scale, however, we would have to implement a model of online-only universities for *most* students in Ontario – an unlikely scenario. It should also be noted that a significant proportion of

students at Athabasca (two-thirds) and TRU (one-fifth) are not pursuing a credential and a large proportion of students are pursuing their studies on a part-time basis – 90 per cent at Athabasca and 50 per cent at Téluq and TRU. Neither enrolment trend contributes to improving the attainment rate or getting students through their programs more quickly. Therefore, while increased use of online education could improve instructional productivity, it would not necessarily improve Ontario's attainment rate. As such, using online education to replace in-class instruction on a mass scale would not be an effective productivity enhancement.

In the case of blended learning, increased productivity through innovation might well facilitate better retention and completion rates. As a question of instructional or faculty productivity, however, improving retention and completion rates through the use of blended learning would require increased faculty hours to ensure student success.

Consider a model that transforms a lecture and tutorial class into one that blends online and in-class teaching. In the traditional model, the professor of a large course has two hours for lectures and one hour of tutorial time with smaller groups each week. Other tutorials may be led by teaching assistants. In the blended model, the two in-class lectures are replaced with recorded lectures available online while the professor uses the two hours of in-class time to engage in more interactive and "inverted" classroom activities, where students are more active in their learning. In this model, students would presumably be more engaged and successful, but this model would also require additional time on the part of the faculty member. The face-to-face contact hours remain the same in each teaching model, but the blended course adds two indirect contact hours, which would require additional preparation time. If we assume that each contact hour requires one hour of preparation (a very conservative estimate), changing one of a professor's courses to a blended model as described above adds four hours of indirect contact and preparation time each week during the term.

Whether the additional time comes from their non-professional lives or from research activities, it must come from somewhere.

Provided appropriate time and resources are made available, faculty members can and do develop new courses that apply different pedagogical approaches all the time. Given the time-intensiveness of developing a new blended course, and the increased contact hours needed to ensure success, faculty members may actually have to reduce their teaching loads in order to adopt a blended learning model. Widespread use of blended learning, though pedagogically promising, might actually reduce the number of courses taught by individual faculty members.

## 2.2 Teaching loads

Increasing faculty teaching loads is often presented as a strategy for increasing instructional productivity. If faculty just spent more of their time teaching, the argument goes, our universities could teach more students for the same amount of public funding. This call for increased instructional productivity through more teaching by individual faculty ignores the fact that class sizes have increased dramatically over the past decade. As a result, faculty are teaching far more students even if their course load has remained the same. The increased preparation, communication, and grading responsibilities that come with rising enrolment makes an increased course load extremely problematic for most full-time faculty members.

In many jurisdictions, managing teaching load is a way for faculty members to manage their workloads in response to rising student-faculty ratios. In Ontario, faculty hiring has not kept pace with the rise in enrolment, leading to the worst student-faculty ratio in Canada: 27-to-1. The elimination of the grade 13 Ontario Academic Credit and the creation of the double cohort in 2003 produced the largest single-year increase in the undergraduate enrolment since the expansion of the system

during the 1970s. The subsequent expansion of graduate studies affected the type and intensity of student engagement required of faculty, as graduate students require a greater degree of mentorship and individual attention. The last 15 years has therefore put increasing pressure on faculty struggling to provide a high quality education to each of their students.

It is important to make a distinction between teaching *more courses* and teaching *more students*. A course takes a certain amount of time prepare and deliver, often hundreds of hours. However, the preparation and teaching work required tends not to increase as classes get larger. New pedagogical techniques will be used, and grading responsibilities will be delegated to teaching assistants to accommodate increased course enrolment. For the professor, teaching more students in a single course is a logarithmic growth in workload. On the other hand, if a single professor had to keep class sizes constant and add new courses to accommodate rising student enrolment, the increase in workload would be exponential. So, in a system with many students and not enough faculty, keeping the number of courses constant while increasing the number of students enrolled in those courses has been the only way to keep workload manageable.

There are no publicly available data from which to infer class sizes with any precision, and certainly none that would enable a consistent time series analysis between the years before the double cohort and the present.<sup>2</sup> Student-faculty ratios can be used as a proxy to illustrate what happens when class sizes increase and the number of courses taught by a faculty member is changed. The table below shows the total number of students a faculty member might teach if they taught four, five or six half courses.

| Years   | Student-Faculty Ratio | Number of One-term Courses |     |     |
|---------|-----------------------|----------------------------|-----|-----|
|         |                       | 6                          | 5   | 4   |
| 2000-01 | 22                    | 132                        | 110 | 88  |
| 2005-06 | 27                    | 162                        | 135 | 108 |
| 2010-11 | 28                    | 168                        | 140 | 112 |

Adding a half-course to a faculty member’s teaching load increases the number students they teach by 20 to 25 per cent. Someone teaching in 2005-06 would have over 20 per cent more students than they did five years earlier without changing the number of courses they taught. Add another half course and they would be responsible for 50 to 60 per cent more students in 2010-11 than a decade earlier. Further, reducing in-class teaching responsibilities by a half-course to accommodate increased enrolment does not result in a reduction in the total number of students taught by full-time faculty.

Before 2003, almost no university faculty association collective agreements stipulated the number of courses considered to be the “normal” teaching load. Course assignment was typically based on the norms of faculty members’ academic units, taking into account factors such as class size, the level and type of the courses taught, and other factors. Some university faculty associations began to bargain new language on course loads when it had become clear that larger classes and higher student-faculty ratios were becoming a permanent feature of university education in Ontario. Flexibility provisions that allow for more or less teaching-intensive course loads remain typical and reflect the fluctuating demands and opportunities over the course of academic careers. Professors care deeply about the quality of higher education in Ontario, and have sought course load provisions that protect their ability to engage with and mentor their students.

Moreover, looking exclusively at the number of courses a faculty member teaches only accounts for one aspect of faculty teaching. Faculty devote a great deal of unscheduled time to research and teaching activities that occur outside of the classroom, lab and lecture hall. Data from the 2007 *Changing Academic Profession* survey suggests that the number of hours spent on unscheduled teaching-related activities is approximately two to two-and-a-half hours for each hour spent in the classroom (Jones et al., 2012). These activities include preparation of course material and grading as well as time spent counseling and supervising students one-on-one. The latter becomes increasingly important as graduate student enrolment grows and the number of tenure-stream faculty members available to supervise them falls behind.

Some higher education commentators have proposed increased use of teaching-intensive faculty appointments as a way of increasing the teaching productivity of faculty. These appointments typically have reduced research and service responsibilities, increasing the amount of time available for teaching. While teaching stream appointments have existed at some universities for some time, they have only been promoted as a strategy for reducing costs more recently (as in Clark, Moran, Skolnick & Trick, 2009; Clark, Trick & Van Loon, 2011). While increased use of faculty who are only responsible for undergraduate instruction and who do not conduct any research might reduce instructional costs, such a model is at odds with the requirements of university education. University-level learning occurs when students are taught by research-active faculty. This is not to say that all professors have to conduct the same amount of research. Professors should have the flexibility to focus on their strengths and interests, whether they wish to concentrate on the classroom or on the laboratory. A professor can still be “research-active” in many ways – from multi-million dollar clinical trials to keeping abreast of their field through

careful scholarship. The important thing is that research remains a part of the professoriate and of the university; anything less diminishes the student experience.

Proponents of increased use of teaching-stream faculty argue that good researchers do not necessarily make good teachers. Similarly though, there is no guarantee that teaching-only faculty will necessarily be better teachers. Beyond this, it is important to recognize that university teaching and learning relies on the scholar-teacher model to educate and mentor students in academic work. The centrality of the scholar-teacher model is what motivates teaching-stream faculty in Ontario to seek recognition for the scholarship that they bring to their teaching. The course loads of teaching-only faculty cannot simply be set by doubling the teaching load of their more research-intensive colleagues. If they are to fulfill the promise of a better teaching and learning experience, the time required to develop innovative pedagogies must be reflected in compatible course loads for teaching-focused faculty.

Further, the assumption that a teaching-intensive undergraduate institution could offer smaller class sizes is based on an overestimation of the level of government funding that would be provided. Most of the operating funding from the Ministry of Training, Colleges and Universities is allocated according to the distribution of student enrolment; funding is not allocated exclusively to fund teaching and related activities. Provincial government funding is also intended to support the research that underpins teaching. If research is absent from the mandate of teaching-intensive institutions, we can expect that per-student funding would be reduced accordingly. Under such circumstances, it is unclear whether a teaching-intensive university would have anything near the resources required to deliver a high quality learning experience. This oversight is a recurring weakness in the argument for teaching-only universities.

Calls for increased instructional productivity through the expansion of faculty teaching streams fail to

acknowledge that increasing the amount of teaching performed by full-time faculty effectively reduces the amount of time available for research. Research remains a public mandate and trust maintained by universities and supported in part by operating funding from the provincial government, and is a primary productivity goal. The costs of reducing the research effort are hard to estimate, but are easy to anticipate. University research makes an important contribution towards economic activity and social well-being, and is essential to high quality graduate education. Despite the difficulties in estimating the economic and commercial value of public funding for university-based research, the social networks of knowledge production and dissemination are crucial linkages between universities and the economy (Salter & Martin, 2001; Martin & Tang, 2006). Reducing faculty time spent on research and diminishing graduate student education limits the capacity of universities to produce research and innovation, and harms their capacity to translate new knowledge into economic growth and social development. In short, it is an attempt to promote a secondary productivity goal (increased instruction) at the expense of a primary productivity goal (research output).

### 3. PRODUCTIVITY AND UNDERFUNDING

The push for greater productivity in Ontario's universities is nothing new. Strategies for expanding online learning and increasing teaching loads are simply the latest incarnation of a government push to reduce labour costs in a chronically underfunded sector. Economist Jim Stanford offers a synopsis of three employer strategies for reducing their unit labour costs (Stanford, 2008). Employers can seek to:

- a) *Reduce compensation.* Freezing or reducing wages and salaries are obvious tactics, but outsourcing and substituting of casual workers for permanent full-time workers also reduces the wage bill. The increasing use of part-time contract faculty at Ontario universities fits this pattern.

b) *Increase intensity.* Employees must do more work in the same amount of time, or for the same level of remuneration. The analogous situation for university faculty is the proposal to increase teaching loads.

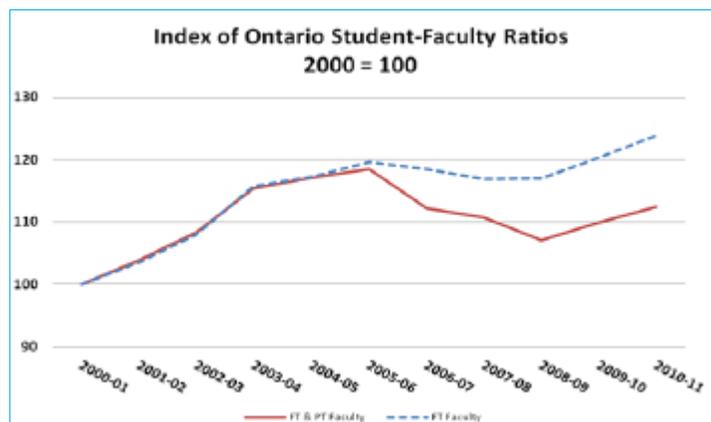
c) *Increase efficiency.* In other settings, the introduction of labour-saving equipment would increase the number of widgets produced or people served for each hour of labour. In a university setting, the Athabasca, T luq and TRU models (combining communications technology with more part-time faculty and teaching adjuncts) follow this logic. So does increasing class sizes.

Larger classes and increased reliance on part-time contract faculty are already familiar trends. As was noted in section 2.2, it is impossible to make a definitive claim that class sizes have increased without publicly available data, but by the measures available, it appears class sizes have grown significantly in Ontario. As a result, Ontario’s faculty are teaching many more students, while per-student expenditures are lower now than they were in 2000. Ontario’s student-faculty ratios have been the worst in Canada for almost two decades, and the gap between Ontario and the rest of Canada grew significantly between 2000 and 2010.<sup>3</sup> Ontario’s professors are far more productive now – in terms of students taught – than they have ever been. Unfortunately, this particular productivity enhancement has come at the expense of the student experience.

The use of part-time contract faculty has also increased significantly in an attempt to control class sizes while also controlling costs. Part-time faculty are employed to offset the ongoing failure to hire adequate numbers of full-time tenure-stream faculty in an attempt to reduce faculty compensation costs. OCUFA estimates that the number of half-course equivalents taught by part-time faculty rose by about 75 per cent between 2000 and 2010. This increase is greater than

the growth in enrolment (60 per cent) and significantly larger than the increase in full-time faculty (30 per cent) over the same period.<sup>4</sup> Rather than being used as a temporary stop-gap to accommodate a one-time surge in undergraduate enrolment, however, the use of part-time contract faculty has become an entrenched strategy. While this strategy has created substantial cost-savings (around \$1.4 billion dollars), it has failed to preserve the quality of the student experience. Part-time faculty are excellent teachers and researchers, but without the job stability and the institutional resources they need to be successful, the cumulative impact of precarious faculty labour has not been positive.

Even taking part-time contract faculty hiring into account, the student-faculty ratio has increased. As the graph below illustrates, the use of part-time teaching was only able to offset the failure to hire sufficient full-time tenure-track faculty for a three-year period as members of the double cohort were passing through their undergraduate studies.<sup>5</sup> Overall between 2000 and 2010 the student-faculty ratio for full-time faculty rose by 24 per cent whereas the notional student-faculty ratio (which includes full-time and part-time faculty) increased by 12 per cent.



ON – FT & PT = index of notional student to full-time and part-time faculty ratio  
 ON – FT = index of student to full-time faculty ratio

Given that Ontario faculty salary costs as a percentage of operating expenditures and on a per-student basis have been on the decline since 2000, seeking to increase faculty productivity as a way of reducing university expenditures will not yield savings of the magnitude being sought by government. Currently, the salary costs of full-time faculty account for less than 17 per cent of Ontario universities' total expenditures (and part-time stipends are less than three per cent). Ontario university per-student operating expenditures (excluding student scholarships and bursaries) are 15 per cent lower than the rest of Canada. Ontario faculty salaries on a per student basis are even lower – by 16 per cent. As the graph below illustrates, after a recovery that coincided with increased operating funding from the provincial government, faculty salaries are again trending downwards.



Constant dollar equivalents indexed to Statistics Canada data for average weekly earnings in Ontario.

Ontario universities and faculty members have been constrained by insufficient government support and high student-faculty ratios for over a decade. The advancements made under the Liberal government's 2005 *Reaching Higher* plan could easily be lost if we fail to acknowledge the unprecedented teaching and research productivity gains made by full-time and part-time faculty, and that these gains have often come at the expense of educational quality. Focusing on faculty productivity in a bid to reduce per-student

salary costs is therefore a risky strategy, one that might threaten our ability to maintain and expand university attainment rates.

## THE PRODUCTIVITY WE NEED

There are a multitude of ways to define "productivity" within the university context, each with differing diagnoses about the shortcomings of higher education in Ontario and prescriptions for addressing them. As this paper has demonstrated, the absence of clear definitions of what productivity means for Ontario's universities – and what the goals of improving productivity might be – makes it very difficult to have a serious and useful discussion about this issue.

The most meaningful measures of university productivity are attainment rates and research output. Attainment rates measure the number of students who are able to access a university education, excel in their studies, and achieve their desired credential. Research output is, broadly defined, the amount of new knowledge and innovation that is produced by faculty members. Any effort to improve these important measures of university effectiveness will improve the sector as a whole. It is important to recognize that research and attainment are not mutually exclusive; each informs and enriches the other, and each is diminished when the other is impaired or damaged. Therefore, it is important that neither is privileged in the discussion around university productivity.

Other types of productivity improvements outlined above – such as increased teaching loads or substantially increased online learning – are properly seen as subsets of attainment and research productivity. Focusing on components rather than the ultimate goals is ineffective, comparable to treating a single symptom rather than curing the patient. Over-focusing on teaching loads or online learning

may also work against the goals of increased research output and attainment rates. Unwarranted increases to teaching loads reduce time spent on research and mentorship outside the classroom, while an excessive use of online learning – and its lower performance when it comes to retention and completion – will damage attainment.

It is also important to acknowledge that Ontario's universities – and the professors and academic librarians that work within them – have already made astonishing productivity gains. Reduced per-student funding and rising enrolment in recent decades has meant that universities educate far more students for far less money. But these productivity improvements have done nothing to improve the quality of higher education. There has been little acknowledgement of the increased productivity of Ontario's universities and the strains on educational quality, in large part because there is no consensus about how productivity should be understood in the complex context of higher education. Calls for increased productivity that are motivated by a desire to reduce costs rather than the need to deliver quality higher education will have a detrimental effect on universities and students, and must be avoided.

Faculty will inevitably feature prominently in any effort to improve the productivity of universities. That being said, it is difficult to quantify faculty productivity in a way that accounts meaningfully for the differences between teaching, research, and service, while also recognizing the differences between disciplines and institutions. However, the difficulty in establishing metrics that can account for meaningful distinctions should not become an excuse to reduce the notion of productivity to simplistic measures such as the number of courses taught by professors.

Ontario's professors and academic librarians are committed to building the success of students through higher attainment rates and increasing the vitality of our province through enhanced basic research and innovation. Recognizing that real productivity lives within and between these two concepts is the first step to strengthening our

universities' ability to advance the dreams of our youth, build a strong economy, and support a vibrant society.

## WORKS CITED

- Center for College Affordability. (2010). 25 ways to reduce the cost of college. Washington DC: Center for College Affordability. Retrieved from: [http://centerforcollegeaffordability.org/uploads/25Ways\\_to\\_Reduce\\_the\\_Cost\\_of\\_College.pdf](http://centerforcollegeaffordability.org/uploads/25Ways_to_Reduce_the_Cost_of_College.pdf)
- Clark, I. D., Moran, G., Skolnik, M. L. & Trick, D. (2009). *Academic Transformation*. Montreal/Kingston: McGill-Queen's University Press.
- Clark, I. D., Trick, D. & Van Loon, R. (2011). *Academic Reform*. Montreal/Kingston: McGill-Queen's University Press.
- Higher Education Quality Council of Ontario. (2012). The productivity of the Ontario public postsecondary system: Preliminary report. Toronto: Higher Education Quality Council of Ontario. Retrieved from: <http://heqco.ca/en-CA/About%20Us/policyadvice/Pages/Productivity.aspx>
- Jones, G., Weinrib, J., Metcalfe, A. S., Fisher, D., Rubenson, K. & Snee, I. (2012). Academic work in Canada: The perceptions of early-career academics. *Higher Education Quarterly*, 66(2), 189-206.
- Lumina Foundation. (2010). Navigating the "new normal." Indianapolis: Lumina Foundation. Retrieved from: [http://www.luminafoundation.org/publications/Navigating\\_the\\_new\\_normal.pdf](http://www.luminafoundation.org/publications/Navigating_the_new_normal.pdf)
- Lumina Foundation. (2011). Four steps to finishing first: An agenda for increasing college productivity to create a better-educated society. Indianapolis: Lumina Foundation. Retrieved from: [http://www.luminafoundation.org/publications/Four\\_Steps\\_to\\_Finishing\\_First\\_in\\_Higher\\_Education.pdf](http://www.luminafoundation.org/publications/Four_Steps_to_Finishing_First_in_Higher_Education.pdf)

Martin, B. & Tang, P. (2007). The benefits from publicly funded research. Falmer, Brighton: SPRU Electronic Working Paper Series. Retrieved from: <http://www.sussex.ac.uk/spru/documents/sewp161.pdf>

National Academy of Sciences. (2012). Improving measurement of productivity in higher education. Washington DC: The National Academies Press.

Reindl, T. & Reyna, R. (2011). From information to action: Revamping higher education accountability systems. Washington DC: National Governors Association Center for Best Practices. Retrieved from: <http://www.nga.org/cms/home/nga-center-for-best-practices/center-publications/page-education-publications/col2-content/main-content-list/from-information-to-action-revam.html>

Salter, A. & Martin, B. (2001). The economic benefits of publicly funded basic research: A critical review. *Research Policy*. 30, 509-532.

Snowdon, K. (2011). Higher education costs and cost drivers: Looking forward – by revisiting the past... A review of cost studies, formula funding and cost drivers. Harrowsmith, ON: Snowdon and Associates. Retrieved from: [www.snowdonandassociates.ca/presentations.htm](http://www.snowdonandassociates.ca/presentations.htm)

Stanford, J. (2008). *Economics for Everyone: A Short Guide to the Economics of Capitalism*. London: Pluto Press.

University of Delaware Office of Institutional Research. (n.d.). The National Study of Instructional Costs & Productivity. Newark, DE: University of Delaware. Retrieved from: <http://www.udel.edu/IR/cost/>

## SUGGESTIONS FOR FURTHER READING

Commission on the Reform of Ontario's Public Services. (2012). Public services for Ontarians: A path to sustainability and excellence. Toronto: Ontario Ministry of Finance. Retrieved from: [www.fin.gov.on.ca/en/reformcommission/](http://www.fin.gov.on.ca/en/reformcommission/)

Council of Ontario Universities. (2012). Strategic mandate agreements. Toronto: Council of Ontario Universities. Retrieved from: <http://www.cou.on.ca/publications/reports/ontario-university-smas>

Knapp, L. G., Kelly-Reid, J. E. & Ginder, S. A. (2012). Enrollment in postsecondary institutions, Fall 2011; Financial statistics, Fiscal year 2011; and Graduation rates, Selected cohorts, 2003–2008 First look (Provisional data) (NCES 2012-174rev). Washington DC: National Center for Education Statistics. Retrieved from: <http://nces.ed.gov/pubs2012/2012174rev.pdf>

Ministry of Training, Colleges and Universities. (2012). Strengthening Ontario's centres of creativity, innovation and knowledge. Toronto: Ontario Ministry of Training, Colleges and Universities. Retrieved from: [www.tcu.gov.on.ca/pepg/publications/DiscussionStrengtheningOntarioPSE.pdf](http://www.tcu.gov.on.ca/pepg/publications/DiscussionStrengtheningOntarioPSE.pdf)

Ministry of Training, Colleges and Universities. (2010). [University] *Graduation, job and OSAP default rates*. Toronto: Ontario Ministry of Training, Colleges and Universities. <http://www.tcu.gov.on.ca/pepg/programs/osaprates/>

Musick, M. (2011). Analysis of efficiency and graduation rates at the University of Texas at Austin and other public research universities in the United States. Austin: University of Texas at Austin. Retrieved from: [http://www.utexas.edu/news/attach/2011/campus/analysis\\_efficiency.pdf](http://www.utexas.edu/news/attach/2011/campus/analysis_efficiency.pdf)

Office of the Auditor General of Ontario. (2012). 2012 Annual report. Toronto: Office of the Auditor General of Ontario. Retrieved from: [http://www.auditor.on.ca/en/reports\\_2012\\_en.htm](http://www.auditor.on.ca/en/reports_2012_en.htm)

OECD. (2012). Education at a glance 2012: OECD indicators. OECD Publishing. Retrieved from: <http://www.oecd.org/education/eag2012.htm>

Statistics Canada. (2012). Education indicators in Canada: An international perspective. Ottawa: Statistics Canada. Retrieved from: <http://www.statcan.gc.ca/pub/81-604-x/81-604-x2012001-eng.htm>

## ENDNOTES

- 1 Faculty data are from Statistics Canada University and College Academic Staff System [UCASS]. Operating costs for this purpose exclude student scholarships paid from operating funds. Financial data are from the Canadian Association of University Business Officers [CAUBO] Financial Information of Universities and Colleges [FIUC].
- 2 Interim Accountability Agreements indicate there was a substantial increase in class sizes between 2002-03 and 2003-04, but in the 2005-06 academic year, the manner of reporting class sizes changed in Multi-Year Accountability Agreements and in the Common University Data Ontario [CUDO] reports.
- 3 In 2000, Ontario's student faculty ratio was 22 to 1. In 2010 Ontario's student faculty ratio was 28 to 1. The average for the rest of Canada was 21 to 1 in the same year.
- 4 Half-course equivalents (HCEs) are estimated by dividing operating costs attributed to part-time academic ranks in Table 6 of the Council of Finance Officers – Universities of Ontario [COFO] Financial Report of Ontario Universities for each institution by applicable course stipends. Where there is a range of stipends, an average of the estimated HCEs using minimum and maximum stipends is used. Full-time faculty data are from Statistics Canada UCASS and exclude academic administrators (Deans, Associate and Assistant Deans, and equivalents), faculty members on leave and those on a different salary scale (e.g., religious personnel). There are no comparable data on the operating costs of part-time stipends at universities in other provinces, but the student-full-time faculty ratios in the rest of Canada over the same period have fluctuated close to the same level.
- 5 Estimates of full-time equivalents for part-time faculty follow the convention used in US Common Data Set estimates, which divides the number of part-time faculty by three. Dividing HCEs by six (two terms times three courses) is analogous.