



Higher Education  
Quality Council  
of Ontario

An agency of the Government of Ontario

## @ Issue Paper No. 10

Informing policy through analysis of current research

# Defining, Measuring and Achieving “Student Success” in Ontario Colleges and Universities

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August 11, 2011

Published by:

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### Cite this publication in the following format:

Wiggers, R. & Arnold, C. (2011). *Defining, Measuring and Achieving “Student Success” in Ontario Colleges and Universities*. Toronto: Higher Education Quality Council of Ontario.



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## Introduction

Since the Higher Education Quality Council of Ontario (HEQCO) was launched, it has completed and published more than 140 research studies – and funded dozens more that are currently underway – that explore a wide range of trends and issues involving Ontario’s postsecondary system. Drawing mainly from HEQCO’s own research, this @Issue paper:

- Describes how the definition of student success has gradually broadened at Ontario colleges and universities;
- Summarizes some of the underlying institutional and student population factors that also impact on most current measures of student success;
- Provides broad observations about some recent findings as they relate to the awareness, utilization and impact of various student service, course-based and other initiatives designed to promote student success;
- Recommends what can be measured – as well as how and what outcomes can be expected – when it comes to initiatives and interventions designed to improve student success.

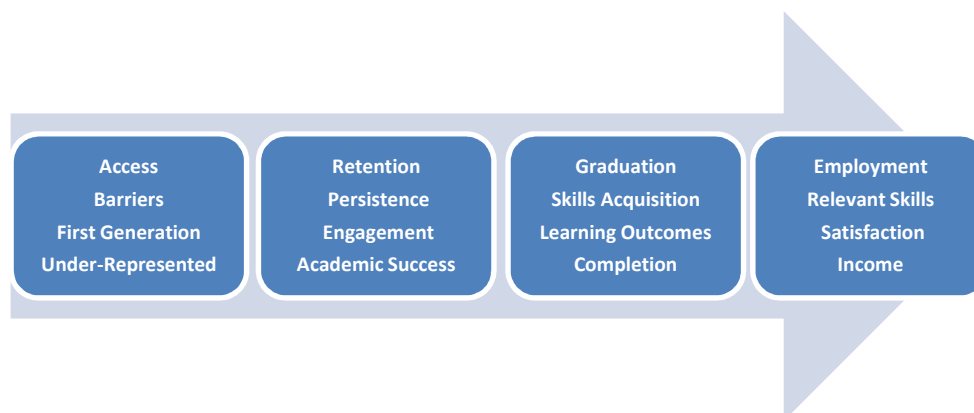
Some readers will be looking for the “silver bullet” within this paper. They will want to be told about a best practice that has been proven to be most effective at improving academic achievement, retention or engagement at an Ontario college or university, and that can be replicated to equal effect elsewhere.

This @Issue paper does not identify “silver bullets.” As explained in the pages that follow, the scope and scale of an intervention may make it difficult to measure – or even expect – considerable impacts on student success, especially in the short term. This paper does provide broad lessons, however, that are likely to be applicable across a wide range of student service, course-based and other interventions currently offered at Ontario colleges and universities.

## Defining “Student Success”

For several decades, both governments and colleges/universities in Ontario and across Canada have tried to broaden access to postsecondary education (PSE) (Figure 1). In particular, it was believed that a wide variety of barriers – family and social background, financial resources, information about options, etc. – needed to be overcome to encourage broader PSE participation, especially by those from traditionally under-represented groups (low income, first-generation, Aboriginal, visible minority, rural, etc.).

**Figure 1: Components of Student Success**



Appropriately, attention began to expand beyond mere access into college/university towards the subsequent *retention* of students after initial admission into their selected program of study. Why admit more students into PSE if many leave before earning a credential, and never return (Figure 1)? As a result, both governments and postsecondary institutions began seeking to more closely monitor – and reduce – failure, stopout and dropout rates at the program, institution and system-wide levels.

More recently, the gaze has begun to extend from initial access and early retention towards an even broader and more all-encompassing conceptualization of student success. Student associations, postsecondary institutions and governments are now making increasing efforts to ensure that a quality learning experience is being offered to students throughout their PSE experience, one that includes solid and effective teaching, strong levels of student engagement, deep learning, and value-added skills development. The ultimate goal for the individual student is a completed PSE credential, relevant employment and reasonable income, as well as broader indirect benefits related to civic engagement, improved health, etc.

## Some Underlying Factors

Previous research undertaken by HEQCO and elsewhere suggests that any attempt to measure student success – or to assess the impact of any intervention at the program, institutional or system-wide levels – should first consider a host of underlying institutional and student population factors. These factors are useful in determining the outcomes and implications of the intervention under consideration.

First, the nature, culture and policies of the program/institution should be identified, considered and where possible even controlled for before attempting to measure student success or the impact of any intervention. If student success is measured in terms of learning outcomes, skills acquisition or retention and completion rates, for instance, the following underlying realities may also require consideration:

- **Academic Selectivity:** Data from Ontario colleges and universities shows a clear link between institutional admission requirements and retention rates.

Institutions that are more academically selective in their recruitment of incoming students tend to have higher completion and graduation rates, while colleges and universities that encourage broader access for traditionally under-represented groups may have lower completion and graduation rates.<sup>1</sup>

- **Program Mix:** Even within individual colleges and universities, and often for the same reasons cited previously for academic selectivity or expectations, dropout and completion rates vary by the type of program. A recent longitudinal study of Ontario students, tracking applications from high school to PSE enrolment, revealed that the lowest attrition tended to take place within postgraduate certificate and private career certificate programs, and the highest in applied degree programs (Academica, 2010).
- **Administrative Policies:** Ongoing research being undertaken by Felice Martinello at Brock University is examining the impact that institutional policies – such as course withdrawal deadlines, tuition refund policies, and add/drop dates – have on overall student persistence and success. Using data from 23 Canadian universities, cross-referenced with the Youth in Transition Survey (YITS), it became clear that a more generous tuition refund policy meant that students withdrew later in the term and were more likely to remain in the PSE system and finish their degrees in shorter periods of time (Martinello, 2008).
- **Institution Size:** National surveys suggest that student perceptions about the extent to which the environment at their PSE institution is supportive is often reflective of the size of the institution, with the highest rates of engagement most likely to be found at the smallest institutions (McElroy & Usher, 2010). On the other hand, smaller institutions with more limited program offerings may have higher dropout rates at the institution, though the individual students themselves may well have moved on to other PSE institutions to complete a different program of study. Other HEQCO research employing the National Survey of Student Engagement, or NSSE, has found that engagement levels are further impacted by the rural/urban location of the institution, as well as by class size, program mix, student characteristics, etc. (Conway, Zhao & Montgomery, 2011).

Another set of factors that should be considered – and ideally controlled for – when attempting to measure student success, both overall and for an intervention, is the nature of the student population itself. Numerous studies have shown that age, gender, immigrant or first-generation status and academic preparedness all contribute to the likelihood of student success once admitted into a PSE program.

- **Age:** With the elimination of Grade 13 (OAC) in Ontario in 2003, the average age of entering first-year students has dropped, particularly at Ontario universities where nearly two-thirds of incoming first-year students are now

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<sup>1</sup> HEQCO, using OUAC High School Average and 2<sup>nd</sup> Year Retention Rate data.

below nineteen.<sup>2</sup> There is reason to believe that younger students are more likely to be uncertain about their future plans, and to stop out or switch programs.

- **Gender:** Female PSE students are more likely to complete and to finish on time than males, which is why females make up 58 per cent of undergraduate enrolments at Ontario universities, and 63 per cent of graduates.<sup>3</sup>
- **Core Skills:** Increasing numbers of high school graduates are being admitted into Ontario colleges and universities without the requisite core reading and math skills to ensure student success in PSE (Fisher & Hoth, 2010).
- **Commitment:** Many have lamented a generation of students who are increasingly coddled by hovering “helicopter parents,” and who appear to be less able or willing to make financial and academic decisions for themselves. Others have commented on the growing tendency of many students to focus on surface or strategic learning strategies, pursuing only the bare minimum required to complete their credential (McElroy & Usher, 2010).

These are just some of the underlying factors related to the nature of both the program/institution and the student population that need to be factored into any attempt to calculate overall student success, or to assess the impact of an intervention designed to enhance student success.

## Intervention Options

All colleges and universities in Ontario provide some combination of initiatives and interventions intended to help students deal with the transition into PSE and to enhance their chances of academic success. Student Services/Affairs portfolios generally include a common set of services:

- Student leadership and community development;
- Counseling, health and accessibility services;
- Career services;
- Academic or learning skills services (literacy, numeracy, research methods);
- Services for diverse students (Aboriginal, first-generation, international, women, mature, second career, Lesbian Gay Bisexual Transgender Queer Questioning and Allied (LGBTQQA) etc.).

Programs and services in support of student success are an important administrative component of most colleges and universities. A similar trend has occurred with the emergence of teaching and learning centres at many Ontario colleges and universities,

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<sup>2</sup> MTCU User Reports (November 1<sup>st</sup> count). Age is calculated as age at end of calendar year of enrolment. COU-CUPA (CESPA), 2009.

<sup>3</sup> HEQCO calculations based on Statistics Canada, PSIS enrolment and graduation data.

and parallel initiatives designed to enhance student engagement and academic success, particularly within specific programs or courses. As a result, a number of campus surveys indicate that students consider the campus environment in general to be “supportive.” Initiatives that are made available to students can usually be categorized as follows:

- **First-Year Transitions:** Generally targeted at entering students, these tend to include orientation programs and “101” type courses – usually optional, sometimes for credit – that provide opportunities to enhance individual engagement (through mentoring, coaching, etc.) as well as basic skills such as writing, time management, etc.;
- **Targeted Populations:** Initiatives directed at sub-populations within the overall student population whose members are considered most “at-risk” based on past experience or research (Aboriginal, disabled, ESL, non-traditional, etc.);
- **Class-Based Interventions:** Usually targeted at specific courses or programs of study with particularly high DFW (D Grade, Failure, Withdrawal) rates;
- **Skill Enhancement:** Usually available to students in all programs and years of study, and consisting of a range of services that might include academic advising, career and personal counselling, writing skills, exam preparation, etc.
- **Financial:** A combination of endowment, tuition-funded and government initiatives designed to provide non-repayable grants and scholarships to students with financial need.

Nearly three years ago, HEQCO approved funding to assess 16 innovative practices already underway at Ontario colleges and universities, and 10 additional interventions targeted at classes with high DFW rates. The first series of final reports were published by HEQCO in 2010, and another group of final reports is being published this spring and summer. The broader findings of these interventions – especially as they relate to student awareness of their existence, willingness to utilize them, and the challenges in assessing their impact on student success – are summarized in this report. Also included is a summary of some of the difficulties and challenges in assessing the impact of these interventions, as well as promising practices to guide future research.

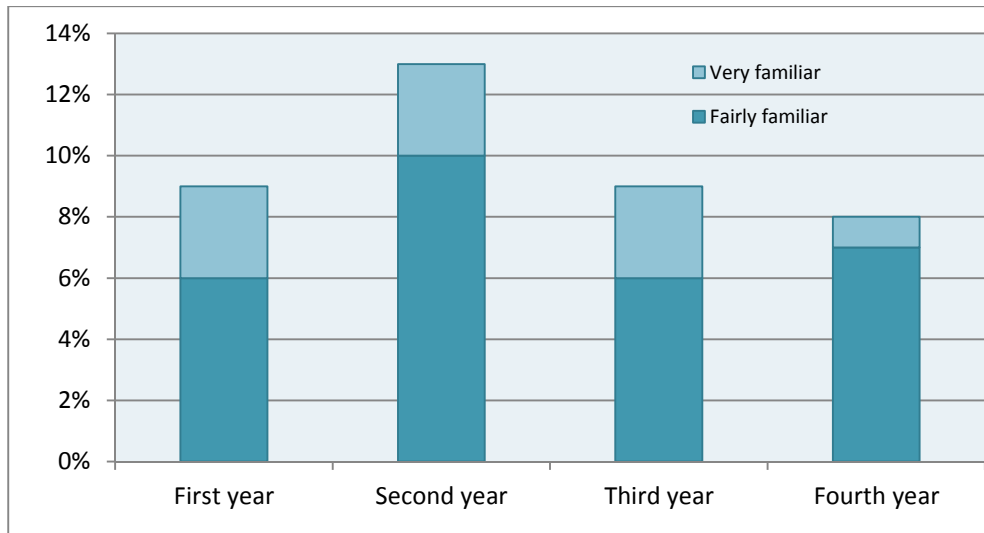
## Student Awareness

One of the first broad observations from the assessments already completed is that despite the best efforts of postsecondary institutions, and the dedicated staff who develop and implement these interventions, those students who might benefit the most from supplementary assistance often remain inadequately informed.

A prime example was Nipissing University’s UNIV1011, an introductory course intended to assist first-year students in the transition to postsecondary study. This credit course has been a fixture at Nipissing for more than a decade, and offers first-

year students upgrading in areas such as study skills, critical thinking, communication skills, time and stress management, health and wellness, and career planning. When Nipissing students were surveyed in the winter of 2009, however, few of the respondents (10 per cent) were aware that the course existed, especially among the first-year cohort towards which it was specifically targeted (Figure 2).

**Figure 2: Student Awareness (UNIV1011)**

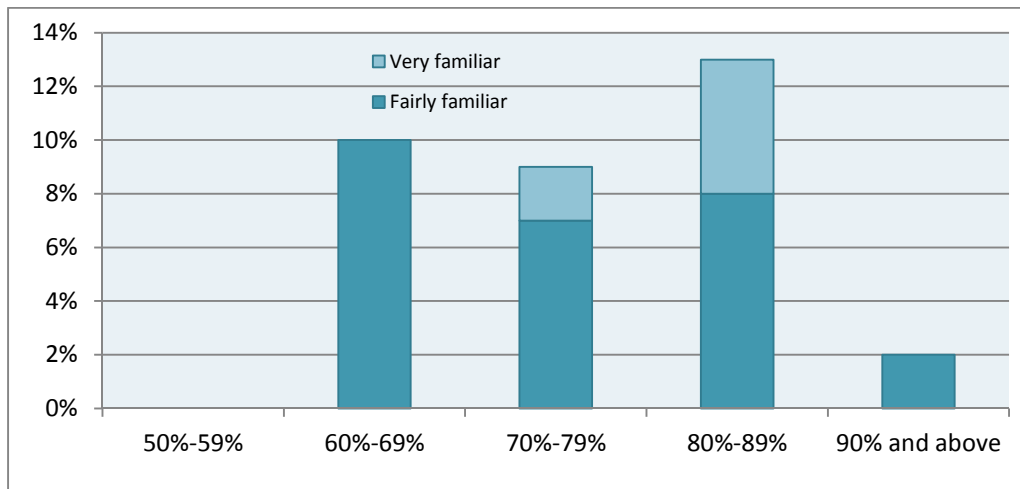


Source: Dunn, R. and Carfagnini, A. (2010). *First Year Transitions: An Evaluation of Nipissing University's UNIV1011*. Toronto: HEQCO.

Like similar general skills courses offered at other colleges and universities, UNIV1011 was created to assist students likely to face the greatest academic challenge during their transition from high school to first-year PSE. Yet students who were more likely to be “very familiar” with the course were those who entered Nipissing University with a high school GPA above 80 per cent and who were least likely to need to take the course (Figure 3).



**Figure 3: Student Familiarity by High School GPA (UNIV1011)**



Source: Dunn, R. and Carfagnini, A. (2010). *First Year Transitions: An Evaluation of Nipissing University's UNIV1011*. Toronto: HEQCO.

Moreover, the source and timing in which students heard about UNIV1011 was somewhat surprising. Students should have been informed about the availability of the course from academic advisors and faculty early in their first year, the time period when students are still able to enrol and take the course. However, few first-year students were aware of the existence of UNIV1011 at this critical time, and those who were aware had often been informed by course calendars, peers and family members rather than by university faculty or advisors (Dunn & Carfagnini, 2010).

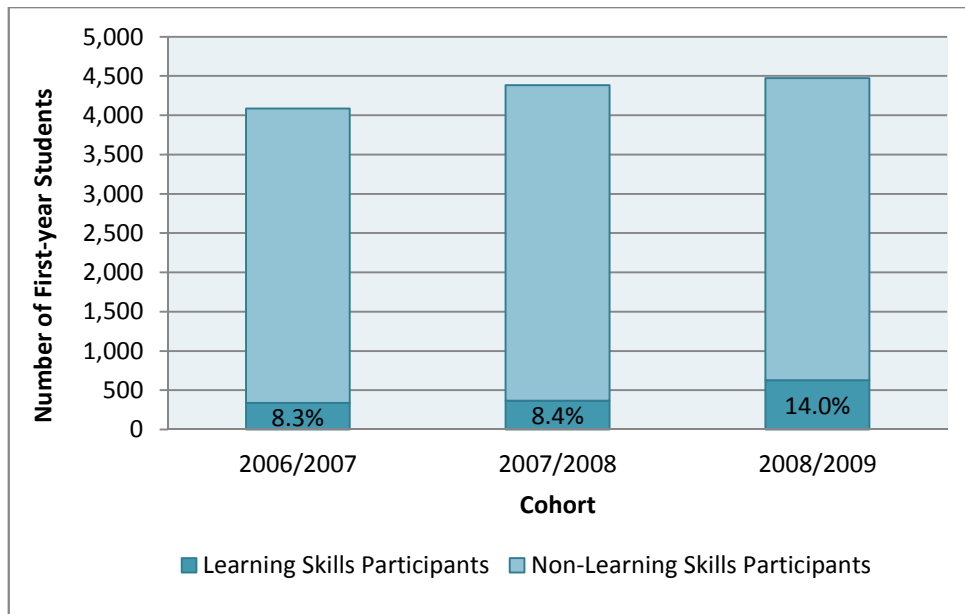
Brock University had a more encouraging experience promoting their Learning Skills Workshops. In 2009, two-thirds of respondents indicated that they were aware of the workshops, and the following year this number increased to 79 per cent as a result of additional enhancements to their awareness campaign. In particular, many first-year students heard about workshops via SmartStart, the summer orientation program that most students are encouraged to take prior to enrolment. The growing awareness of the Learning Skills Workshops, and the early timing, may have been enhanced by a university-wide rebranding exercise launched in 2010 in which Brock redesigned its website, and Learning Skills Services initiated a new online self-registration system, a more navigable link from the University's main page and additional signage around campus (Learning Skills Services & HESA, 2011).

### Student Utilization

Even when interventions hold out the promise of positive impacts and benefits, and most students appear to be aware of their existence, students still may not necessarily choose to take advantage of these opportunities. This section will discuss the findings of four recently completed HEQCO projects examining student utilization of co-curricular mentoring and advisement programming.

The first example, showcasing that awareness does not necessarily equal utilization, is Brock University’s Learning Skills Workshops. As reported above, awareness of Brock University’s Learning Skills Workshops has been generally strong and timely. Actual utilization of the workshops was limited until very recently, however, when it grew from just over 8 per cent to more than 14 per cent in the first-year population (Figure 4).

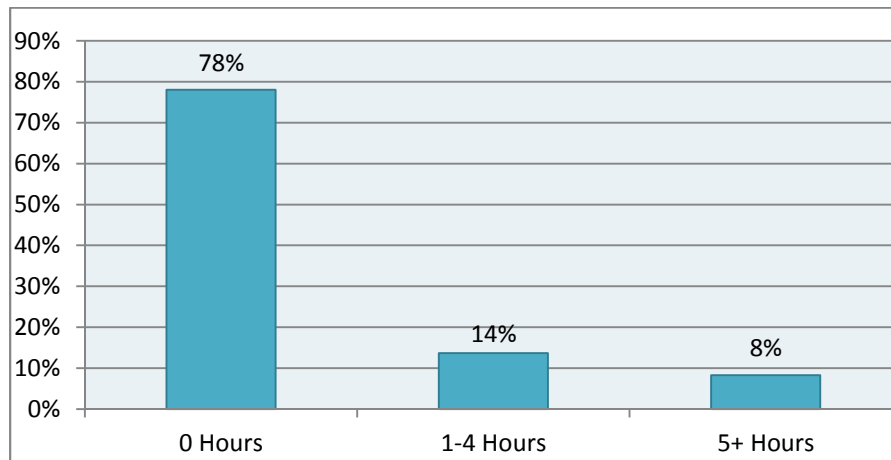
**Figure 4: First-Year Student Participation (Learning Skills Services)**



Source: Learning Skills Services and HESA (2011). *An Evaluation of the Impact of Learning Skills Services on Student Academic Success at Brock University*. Toronto: HEQCO.

A further example was provided by Carleton University’s Peer-Assisted Study Sessions (PASS). These opportunities for supplementary mentoring for courses with high DFW rates appear to have a clear positive impact on student academic performance in the courses in which they are offered, yet few students took advantage of PASS mentoring. While not all students may feel they require this co-curricular instruction, only 8 per cent of students participated in 5 hours or more of PASS mentoring over two semesters (Figure 5) (Miles, C.A., Polovina-Vukovic, D., Litteljohn, D. & Marini, A, 2010).

**Figure 5: Student Participation and Intensity (PASS)**



Source: Miles, C.A. et al. (2010) *The Effectiveness of the Peer-Assisted Study Sessions (PASS) Program in Enhancing Student Academic Success at Carleton University*. Toronto: HEQCO.

The third example is Queen’s University’s Supported Learning Groups (SLG), which are very similar in nature to Carleton’s PASS program. Upon analyzing the uptake of this intervention the researchers determined that participation rates ranged from 6.7 to 8.8 per cent in the three targeted courses (two first-year Biology and one Psychology). It is also worth noting that in this intervention, as in many others, female students were nearly twice as likely to seek additional help (11.1 per cent) as male students (6.2 per cent) (Massey, forthcoming).

The Niagara College/Brock University Partners Program, meanwhile, demonstrates that even mandatory intervention programs may not be utilized by students. The program provides an opportunity for applicants who did not meet the admission standards at Brock to pursue a year of study and mentorship at Niagara. Students can earn transfer credits, and are expected to attend a minimum of four sessions with an academic advisor over the course of the year. However, the reported average of actual academic advisor office visits was only 2.5. Further, the number of workshops offered to Partners Program students were reduced due to low attendance rates (Wilson, McCaughan & Han, 2011).<sup>4</sup>

Overall it is worth noting that even if you build an intervention designed to help students achieve academic success, they may not actually come.

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<sup>4</sup> A similar mandatory counselling initiative at Lakehead University appeared to gain more positive reaction from the students who attended; see Browne, S. & Doyle, H. (2010). *Discovering the Benefits of a First Year Experience Program for Under-represented Students: A Preliminary Assessment of Lakehead University’s Gateway Program*. Toronto: HEQCO.

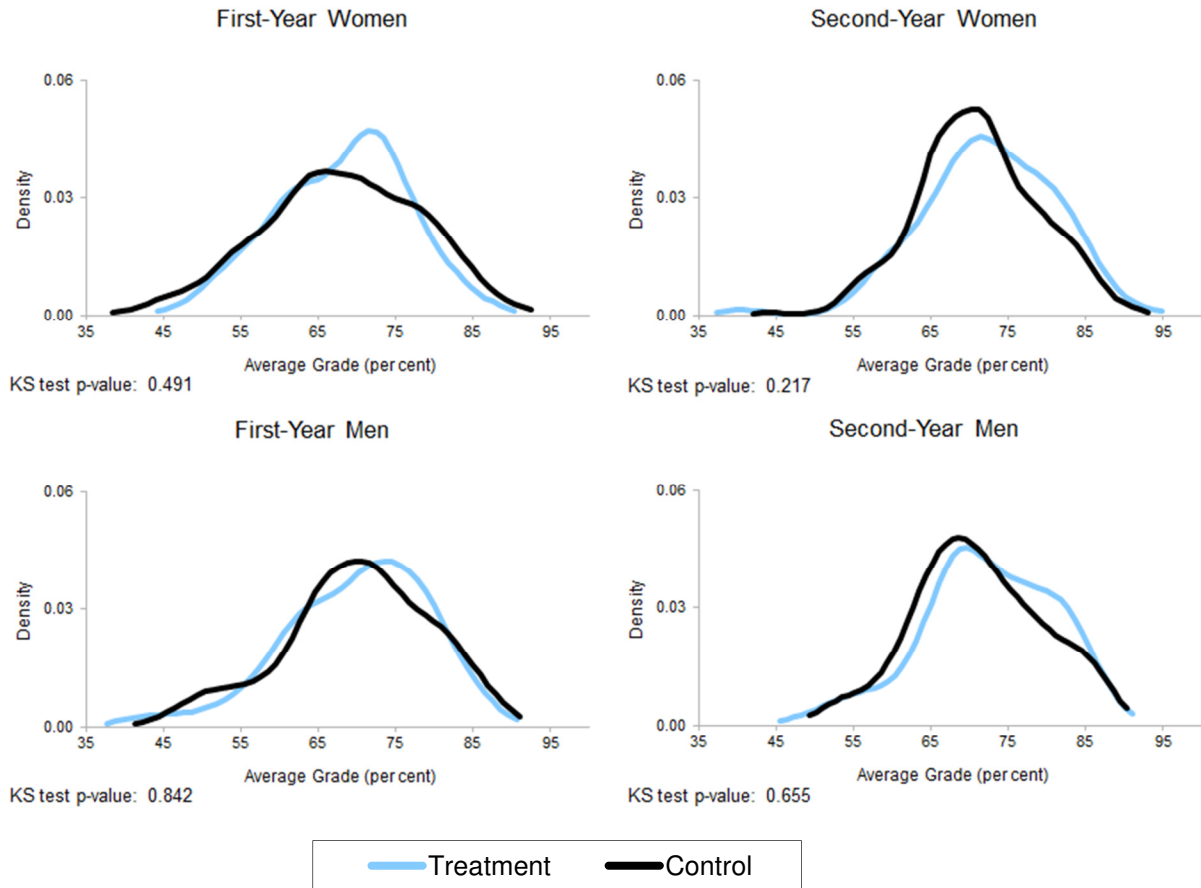
## Impact on Student Success

When attempting to assess student service or course-based interventions, recent experience in HEQCO-funded projects suggests that it is generally best not to expect clear or significant improvements in student performance in areas such as overall grades, retention, etc. Because most interventions consist of only several hours of workshops, mentoring sessions, or other contact time with faculty, mentors, etc., any impacts that might result are likely to be marginal or indirect at best, if they can be measured at all. Here again, three recently published examples are highlighted.

Huron University College’s Writing Proficiency Assessment (WPA) demonstrates the challenge of measuring and interpreting the impact of an intervention. The first observation of note was that although all students are required to complete the WPA – a 1,200 word summary of a reading and a critical essay – during their first year of undergraduate study at the college, and again in their final year prior to graduation, not all students who agreed to participate in the study actually completed both WPA assessments, and the 21 who did constituted a relatively small sample size. Among those who did complete both tests, while there was an increase in all of the sub-scores for the assessment of summary writing skills (argument, organization, detail and clarity), the scores for the essay-writing component (thesis, support, conclusion and coherence) revealed few significant improvements after the completion of four years of essay-based courses. In this case it is possible that either the sample size was too small, or the assessment instrument (the WPA) or method requires refinement (Hyland, Howell & Zhang, 2010).

Another intervention that resulted in a marginal impact on student success was Opportunity Knocks. Like a similar experimental design research project undertaken at three Ontario colleges and funded by the Canada Millennium Scholarship Foundation, this intervention was designed to evaluate the effectiveness of supplemental merit scholarships offered to first- and second-year university students at the University of Toronto at Scarborough (UTSC). Participating students were randomly selected for treatment and control groups, with the treatment group offered merit scholarships for grades of 70 per cent grade or higher. In the end, this experimental design project – considered to be one of the most accurate and reliable methods of intervention assessment – concluded that the impact of financial incentives on grades was close to zero, and even slightly negative during the winter semester (Figure 6) (Angrist, Chambers, Oreopoulos & Williams, 2010).

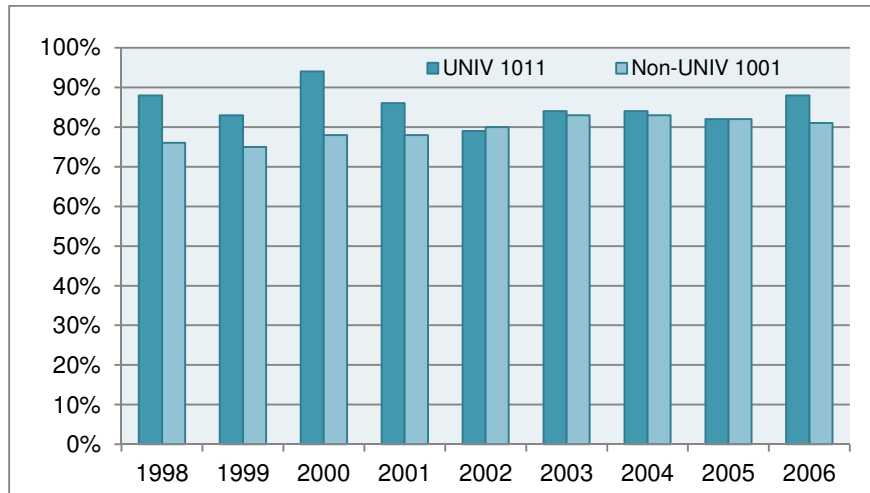
**Figure 6: Full-Year Average Grade for Treatment and Control (Opportunity Knocks)**



Source: Angrist, et al. (2010). *The “Opportunity Knocks” Supplemental Merit Scholarships Project: A Randomized Evaluation of Merit Aid for Students Receiving Need-Based Aid*. Toronto: HEQCO.

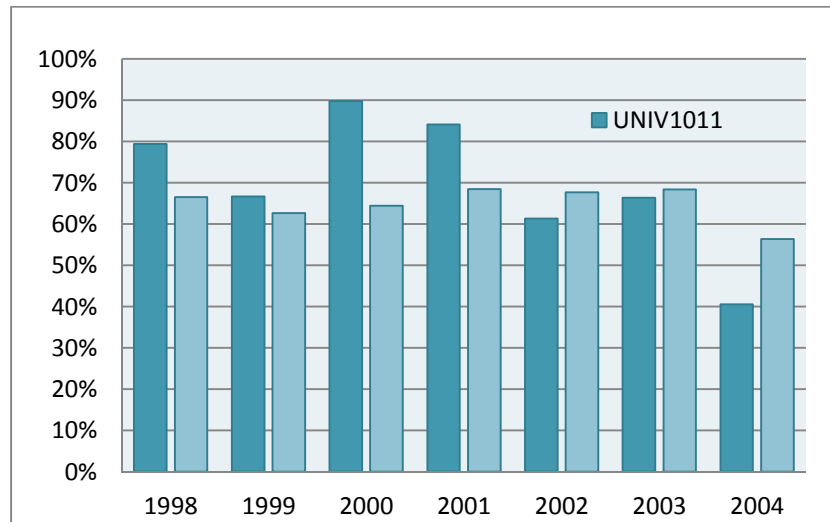
In the case of Nipissing’s UNIV1011 – a substantial intervention involving a semester-long credit course –some cohorts of students who completed the course actually had retention and graduation rates similar to and even lower than the overall undergraduate population (Figures 7 and 8). Since the underlying GPA and other characteristics of the students who completed UNIV1011 were similar to the non-UNIV1011 population, did this mean that the intervention actually had a negative impact in some years on students’ academic performance? This is unlikely. It is possible that the sample of participating students was either too small each year to allow accurate measures to be made, or that some students who seemed to have dropped out may have transferred to other PSE institutions to complete their credential.

**Figure 7: Year 1-2 Retention Rates of Participants and Non-Participants (UNIV1011)**



Source: Dunn, R. and Carfagnini, A. (2010). *First Year Transitions: An Evaluation of Nipissing University's UNIV1011*. Toronto: HEQCO.

**Figure 8: Degrees Conferred on Participants and Non-Participants (UNIV1011)**



Source: Dunn, R. and Carfagnini, A. (2010). *First Year Transitions: An Evaluation of Nipissing University's UNIV1011*. Toronto: HEQCO.

What the research suggests is that most student service and course-based interventions are actually difficult to assess. While participants will generally applaud the content, delivery and overall value of individual interventions in course or post-workshop evaluations, or when interviewed or surveyed, there is seldom an easy and credible method that can quantitatively measure the positive impact on student engagement, academic achievement or retention.

In addition to possibly being too limited in scope to begin with, impacts could also overlap. Most institutions have many different class-based and student service interventions— including some targeted at specific “at risk” populations, first-year students, etc. – making it even more difficult to measure the impact of any individual intervention. It may not be possible to measure the impact of even the most specialized or targeted intervention on improved writing skills, study habits or academic performance in a single course or in a single year’s retention. At best, it may only be possible to attempt to measure more general impacts in other areas such as improved student self-confidence, engagement, overall grades or eventual graduation.

### Challenges in Research Design and Measurement

Even when measurements of impact seem feasible, there may be other challenges. Figure 9 provides a brief summary of the research methods and designs employed in several groups of HEQCO research projects upon which this @Issue paper was based. The most common design is mixed methods (23 of a total of 37 projects examined), combining both quantitative and qualitative research, while nine relied on qualitative research and five on quantitative only. In terms of research tools, student administrative data (25 of 37) and surveys (26 of 37) are most frequently employed.

**Figure 9. Research Methods and Designs of HEQCO Projects, 2005-2011**

Student Data	Skills Assessment	Survey or Questionnaire	Focus Groups	Interviews	Consultations Site Visits	Laboratory Experiment	Mixed Methods	Quantitative	Qualitative
<b>Student Services Research</b>									
11	4	10	9	7	---	---	14	2	---
<b>Implementing Engagement Improvements: NSSE Research</b>									
9	1	10	3	1	---	---	4	6	---
<b>Additional HEQCO Research</b>									
5	---	6	3	4	3	3	5	1	5

Some areas where particular challenges have been experienced are sampling bias, experimental design, and surveys, focus groups and ethics review processes.

## *Sampling*

Sampling bias is often a challenge when conducting research with student populations. In some cases, the response rate is so low that it is difficult to infer more than general observations. When researchers at Ryerson University examined the experiences in three different programs, they had difficulty recruiting study participants for a qualitative study that required the completion of an extensive interview (1-2 hours). In one case, the Road to Ryerson program, only three participants originally involved in high school and now enrolled at the university agreed to be interviewed. The second program, the Tri-Mentoring Program, was designed to support undergraduates already at Ryerson from several different under-represented populations (first-generation, low-income and diverse students) and consisted of three different stages and types of mentorship. While 1700 students were enrolled overall in the program during the 2007-08 academic year, only 71 participants with varying roles in the program were interviewed, including only 13 mentees and 24 mentors. Meanwhile, in a third program, Bridges to Ryerson, almost all of the students from a particular cohort participated (Vetere, Abramovitch, Malik & Guan, 2011).

Similar challenges were experienced in assessing Huron University College’s Writing Proficiency Assessment (WPA). The research team was able to recruit 29 participants out of a total graduating population of 174, but those who volunteered were not representative of the population of graduating students in terms of gender, country of origin or program of study, and only 21 were actually able to provide all of the data required for the assessment.<sup>5</sup>

In other cases, while the overall number of study participants may be larger, the sample may still not represent the overall population. York University’s study on recent immigrant adult students (RIAS) attempted to draw data from students at five different postsecondary institutions through posters, newspaper advertisements and in-class recruitment initiatives. While the combined sample (426 respondents 24 years and older) was sufficiently large to undertake some statistical analyses, a low response rate from one university means that generalizability of the results must be treated with caution. The results may also not represent the larger RIAS population in terms of ethnic background (Lum & Grabke, forthcoming).

## *Experimental Design*

As mentioned previously, when students are invited to participate in a revised service or program or an intervention that is being assessed, doubts often exist about the comparability of those who volunteer to the overall population. To overcome the potential for self-selection bias, HEQCO has funded at least three experimental design research projects, including Opportunity Knocks.



This type of assessment requires the creation of similar control and experimental groups achieved through random selection from the target population. A distinct “treatment” is then applied to the experimental group, and the effect is measured independent of all external influences. Such conditions are rarely if ever achieved, however, particularly in a college/university setting where it requires, in effect, “experiments” on students. It is also nearly impossible to control for all intervening variables that could contribute to the outcome of the “experiment.” The random selection of students for assignment to control and experimental groups also often poses serious research ethics concerns, especially in regards to the denial of potential benefits to the control group members.

If launched, any experimental design must also be able to account for the potential for subsequent attrition by participating students, as well as participation by students in the intervention at varying levels of intensity (Conway, 2010).

### *Surveys*

Student surveys have been one of the most commonly utilized tools of assessment employed. Surveys among postsecondary students typically achieve response rates in the 20-50 per cent range, though with “survey fatigue” growing as the result of the expanding number of instruments being administered for various purposes, even those ratios are optimistic (Conway, 2010). Many institutions that have switched their course/instructor evaluations to online administration have seen response rates fall below 10 per cent.

As explained in greater detail in the previous section, the first challenge is to obtain a sample of respondents that is broadly representative of the overall population of students and that will allow the results to be generalized. Administering surveys in-class can often generate higher response rates. In the case of Nipissing University’s assessment of UNIV1011, it was just over 61 per cent in the thirteen classes in which the paper survey was administered. The researchers of Niagara/Brock’s Partners Program, meanwhile, planned to administer the survey in-class near the end of the semester, but a last-minute class cancellation meant that the survey had to be sent electronically instead (resulting in a lower response rate than the previous year’s administration). There is also the factor of student mistrust of data collection, including a fear of their response being connected with their grades in a course even when anonymity is assured.

Linking surveys longitudinally can also garner useful results. The University of Guelph was able to obtain some fascinating insights into the “disappointment gap” between initial expectations and reality experienced by first-year students by administering one survey upon admission (the Beginning College Survey of Student Engagement or BCSSE) and another on completion of Year 1 (of the National Survey of Student Engagement or NSSE). Similarly, an assessment by Queen’s University of their Discovery Project linked a custom survey with the Classroom Survey of Student Engagement (CLASSE) to measure improvements in faculty-student interaction in first-

year Psychology courses (a similar effort to link CLASSE with NSSE was less successful) (Conway, 2010).

Finally, the importance of survey construction was confirmed when Brock University attempted to assess student knowledge of and satisfaction with the Learning Skills Workshops. The results of two surveys administered in 2009 and 2010 changed dramatically when the more common terminology for the University’s “tutoring service” was utilized. While only one in four students in 2009 were aware of the “one-on-one tutoring sessions,” 63 per cent of students in 2010 were aware of “the Learning Skills Drop-In service in the Learning Commons.”

Another solution is to rely on existing survey instruments to assess interventions. Chris Conway of Queen’s University was the lead researcher for a group of 10 course-based interventions funded by HEQCO. His final report concluded that the NSSE instrument is “clearly not sufficiently sensitive to detect the scale and intensity of the interventions,” while CLASSE – which is really just another version of NSSE appropriate for course-specific analysis – “was extremely useful in assessment of the course-based interventions (and) is sufficiently sensitive to detect many key experimental effects (Conway, 2010).

### *Focus Groups*

There are many reasons why researchers rely on focus groups; in particular, inconsistencies and trends identified in quantitative data can often be explained or better understood by utilizing complementary qualitative data. This explains why a high number of the research projects funded by HEQCO employ a mixed methods research design (Figure 9). When the bulk of the assessment of an intervention is drawn from interviews or focus groups, however, it can often be difficult to verify or draw generalizable findings. Focus groups can also be expensive to conduct, and finding campus locations that are conducive to undertaking such research can be difficult.

As with surveys, low participation rates are a common concern with focus groups, and can jeopardize the integrity of the research project if not handled correctly. Generally, focus groups should be composed of 6-12 people; large enough to allow for multiple and diverse perspectives and small enough for everyone to have their insights heard (Krueger, 1994). Focus groups are also often conducted in series; multiple groups with similar participants are often needed to detect patterns. On the whole, they should be composed of people who are similar to one another but hold varying opinions on a central issue. The researcher should also be able to remain objective, and if this is not possible should not be the one leading the group session.

While financial incentives were often used as a means of increasing participation in the examples cited throughout this paper, they proved to be no guarantee of adequate participation, and often also raised concerns on various research ethics panels. It appears that gift certificates and cash incentives generally were not very effective as a means of increasing what was generally low focus group participation.

## Research Ethics

Finally, inconsistency in the application of Tri-Council standards can be difficult to navigate. Multi-institution studies will often require ethics to be applied for across all institutions resulting in varied timelines, requirements and turn around. These difficulties can delay project timelines and result in small windows for data collection thus resulting in many of the challenges discussed above. The length and complexity of these processes are often not taken into account in research timelines.

## Conclusions

It is appropriate that the focus of governments and postsecondary institutions has expanded from barriers to access, and from first- and second-year retention and persistence towards the broader and more all-encompassing concept of student success. Ontario colleges and universities have made increasing efforts and investments in recent years – often working in consultation or collaboration with student associations, faculty members, and teaching and learning centre and student services staff – to promote student engagement, improve the overall quality of the teaching and learning environment, and enhance student learning outcomes and overall success both within PSE and after.

What the research undertaken by HEQCO has shown is that some challenges remain:

- **Awareness:** Despite the best efforts of postsecondary institutions and governments, many students who most need to be aware of the supplementary assistance and interventions available to them are still **not being adequately** informed about the importance and value of these opportunities;
- **Utilization:** In voluntary interventions designed to promote student success, those who seek out assistance are often **not those most at-risk**;
- **Impact:** There are likely to be **few if any “silver bullets”** that clearly improve student performance in individual courses or programs. The scope and scale of an intervention may make it difficult to measure considerable impacts on student success, especially in the short term when extracting one innovation’s effect has proven challenging for researchers. Improvements will most likely be a culmination of other factors including the intervention, other support received, etc. ;
- **Measurement:** While participants will generally applaud the value of the interventions when interviewed or surveyed, there is seldom an easy and credible method to **measure a significant impact** on student engagement, academic achievement or retention.

As HEQCO’s funded research projects progress toward completion, while we may not have any “silver bullets,” we have tried to identify at least a few best practices. Some institutions have adapted their interventions in light of the assessment findings,

including Brock University with their advertising and promotion strategy and Niagara College with their Partners Program. Others have introduced improved methods to assess impacts in the future; a 15-college study led by Cambrian College introduced a method of detailed record keeping regarding student use of mental health services. Brock University is keeping similarly detailed records of student utilization of their Learning Skills workshops that can be linked with administrative records. The assessment of a group of university interventions identified CLASSE an optimal off-the-shelf survey tool to measure levels of student engagement in course-based initiatives, and several other research projects have successfully linked multiple surveys. Other suggestions include the following (Figure 10):

**Figure 10: Challenges to Student Success and Potential Solutions**

Challenge	Solutions
<b>Awareness</b>	Geographically centralize/co-locate support services
	Centralize and simplify information (handbook, website, etc.)
	Make information available early, possibly even pre-registration
	Improve information dispersal via faculty, student associations, etc.
<b>Utilization</b>	More active efforts to target and remind students
	Consider compulsory interventions for students on probation, etc.
	Recognize that even students who are not “at risk” can and should benefit
	Faculty buy-in to encourage students to participate
<b>Impact</b>	Most interventions are too limited in scope to expect impacts
	Most assessments are too limited in scope to measure long term impacts
	Clear and obvious impacts may simply not be measurable
	Acknowledge that interventions often overlap
<b>Measurement</b>	Pilot surveys, and/or use existing and proven instruments
	Develop a system to track individual student participation in interventions
	Link participation and survey responses with student administrative data
	Longitudinal tracking to graduation (5 years or longer)
	Learning outcomes at the course, program and institutional level

To the extent that it is able to do so, HEQCO will continue to seek ways to work with Ontario’s PSE institutions to appropriately assess and enhance the impact of interventions intended to promote student success. In the meantime, we would like to applaud those incredibly dedicated individuals within each Ontario college and university – including student associations in many cases – who have put so much thought and effort over the years into creating, maintaining, assessing and improving these initiatives.

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