AHELO: The experience of Ontario's institutions

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Introduction

In 2011 Ontario joined the Organisation for Economic Co-operation and Development's (OECD) Assessment of Higher Education Learning Outcomes (AHELO) feasibility study. The Higher Education Quality Council of Ontario (HEQCO) led the project on behalf of the Ministry of Training, Colleges and Universities (MTCU) and in cooperation with the Council of Ministers of Education, Canada (CMEC).

Initiated in 2006, AHELO is a feasibility study to determine if standard generic and discipline-specific tests can be used in different countries to measure what university students know and are able to do. Intending to contribute to the international conversation on establishing better indications of learning quality, the study aimed to develop common learning outcomes and assess student performance at the end of a bachelor's degree (first cycle) in a variety of educational cultures, languages and institutions through standard tests. The feasibility study developed three assessments: one for generic skills, and two for discipline specific skills in economics and civil engineering.

Seventeen countries are represented in this global project, and Canada is one of nine jurisdictions participating in the engineering strand. Nine out of ten Ontario universities with civil engineering programs participated in the study. Nearly 450 Ontario students participated, representing approximately 61% of all civil engineering graduating students.

The following report reviews the experience of Ontario's participation in the feasibility study, focussing primarily on the implementation and administration activities, and the value to institutions. While the institutions did not gain specific insight on their programming, AHELO generated considerable interest in international assessments and comparative understanding, and provided significant experience in the administration of large-scale assessments.

Background and Rationale for the AHELO Feasibility Study

The late 20th century saw significant changes to higher education worldwide.[1] The massification of higher education produced a diverse profile of institutions, programs and students unlike the small elite systems of previous times (OECD, 2012a). This expansion was aided by a number of elements. Higher education is no longer contained by either bricks and mortar or national/jurisdictional boundaries. The proliferation of technology-enhanced learning allows programs to operate whenever and wherever the student chooses, and international student and faculty mobility have opened institutions to the world. Furthermore, the student demand for education has supported the creation of new and alternative providers, such as private institutions or those with specialised programming.

The now complex and global "market" for postsecondary education (PSE) demands new forms of governance, accountability and signalling mechanisms. In line with traditional forms of accountability and governance, measures of inputs (funding, library holdings, etc.) and outputs (retention rate, graduation rate, publications) have been the yardstick of performance both within systems and

[1] Information contained in this section is largely based on OECD documentation. For further information, please see Tremblay, Lalancette and Roseveare (2012) and OECD (2013a

internationally. International rankings based on these performance indicators play a significant role in weighing the research capacities of institutions.

What these traditional measures fail to capture is the quality of education: the teaching and learning that is the heart of most institutions. Recognition of this gap led to the inclusion of another set of indicators that can be called "proxies". These "proxies" of quality include student evaluations, surveys of student satisfaction and engagement, labour market outcomes, etc. These indicators suggest that if the student is satisfied and has fared-well beyond PSE, then the institution must have provided high-quality education.

More recently, and considered by some to be a paradigm shift (OECD, 2012a: 35), there has been a focus on learning outcomes as a means to understand, demonstrate and assess educational quality. Defined learning outcomes – clear statements of what a learner knows and can do – along with appropriate assessment measures, provide a transparent means to measure student learning. It is thus possible to gain an objective picture of the quality of teaching and learning, and ultimately the quality of education provided.

Clear indications of teaching and learning quality are beneficial in a number of ways. They support a better understanding of educational value to students, employers, and the public at large. They also enhance institutional and programmatic improvement in coordination, curriculum development and teaching practices. Furthermore, they can provide measures of what has been considered intangible until now in the world of quality assurance and accountability – educational quality. They also provide a transparency of programming, which allows for greater international and comparative understanding for institutions and programs. Hence, learning outcomes demystify education to the benefit of the program, institution, and wider public and international community, but ultimately they put students at the centre of it all. This indicates a significant shift towards student-centred learning.

The purpose of the feasibility study was to provide 'proof of concept' (OECD, 2009a; 15) to determine whether it is possible to measure what undergraduates know and can do at the international level, to provide relevant information to higher education institutions (HEI's), governments, and other stakeholders including students and employers (OECD 2009b: 2)

The primary questions that emerged from the work included:

- Is it possible to have international agreement of expected learning outcomes?
- Is it possible to implement the same test across cultures and languages?
- Are the assessments valid and reliable?

Three primary areas of work made up the feasibility study. Three strands were developed to assess student performance. One sought to assess generic skills, such as capacities in critical thinking, analytical reasoning, problem solving, etc.[2]. The other two assessments concentrated on discipline-specific skills

[2] For more information, see Tremblay et al. (2012); p 112-114.

in economics[3] and engineering.[4] Rather than assessing content knowledge, both discipline assessments focused on the application of knowledge (i.e., can a student "think like an engineer"). An additional strand, "value-add", was intended to explore the contribution of higher education to student learning. It is expected that there will be gains in skills and competencies from when a student enters PSE and when they graduate (see OECD, 2013b).

In addition to these two areas of work, a Context Dimension[5] was developed to survey students, faculty, institutions and jurisdictions to better understand the educational environment of each jurisdiction and identify factors that might explain differences in observed performance of students.

Concurrent to the development of the assessment frameworks, the OECD invited member countries[6] and other interested countries to join the feasibility study, share in the development of the assessments and pilot the test to a sample of their institutions. Seventeen jurisdictions agreed to take part in the study, representing six continents and 12 languages. Ontario participated in the Civil Engineering Strand.

AHELO in Ontario

In July 2011, the Ministry of Training, Colleges and University in Ontario decided to join the study independent of other Canadian provinces[7]. The Higher Education Quality Council of Ontario (HEQCO[8]), an arms-length agency of the Ontario government, was asked to lead the project.

As part of a broad research agenda to understand and demonstrate the value of postsecondary education, Ontario, through HEQCO, has engaged in a number of research projects to explore learning outcomes. HEQCO has been engaged in a multitude of activities in the area, including establishing learning outcomes across sectors of disciplines (the Tuning project; see Lennon, Frank, Humphreys, Lenton, Madsen, Omri & Turner, forthcoming A); measuring generic learning outcomes through piloting the Collegiate Learning Assessment (see Lennon, forthcoming B); as well as supporting the incorporation and demonstration of leaning outcomes through a variety of institutional activities. Thus, participating in the international study supported the research base by providing comparative information on systems and programming.

Acting as the National Project Centre, HEQCO was responsible for liaising with the OECD and AHELO Consortium in order to administer and implement the assessment. This entailed acting as national experts to the OECD AHELO conversation, providing a National Project Manager (NPM), implementing and administering the study with participating institutions, and providing analysis.

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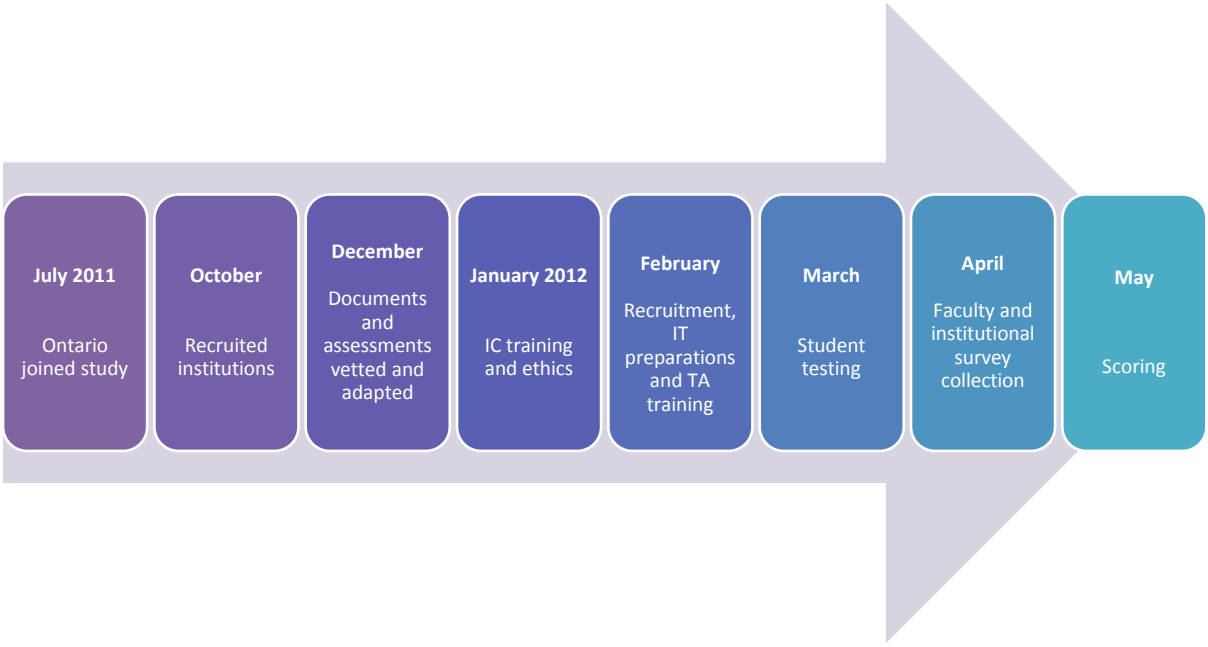
[3] For more information, see OECD 2011a; Tremblay et al. (2012), p 116-118.
[4] For more information, see OECD 2011b; Tremblay et al. (2012), p 121-123; OECD, 2012a; OECD 2012b
[5] For more information, see Tremblay et al. (2012) p 128-132; OECD, 2012c
[6] For a list of member countries, see http://www.oecd.org/general/listofoecdmembercountries-ratificationoftheconventionontheoecd.htm
[7] The Council of Ministers of Education Canada represents higher education at the OECD table and, with agreement from all of the provinces, engages in various OECD projects. Despite general interest, CMEC was unable to gain consensus from the provinces to join the feasibility study.
[8] See www.heqco.ca for more information

There were a number of activities involved in setting up and administering the study in Ontario (see Figure 2). The feasibility study, operationalized by the Consortium, provided guidance and protocols for implementation in order to ensure that comparable activities took place in all jurisdictions. The following sections review the primary areas of field work and implementation, documenting both OECD protocols and Ontario's actions.

Figure 1: Basic Timeline for Ontario's Implementation Activities



Institution Recruitment and Participation

The OECD recommended that each jurisdiction have a convenience sample of 10 institutions to represent a range of types of institutions providing bachelor-level (or first-cycle) civil engineering degrees. It was desirable to have public and private universities/polytechnics/colleges, institutions of different sizes and with different mandates (teaching or research), and those in rural and urban settings, etc. The goal was to ensure that all types of institutions and of students were adequately represented in order to have a valid and reliable understanding of each of the systems.

In Ontario, 10 institutions provide bachelor-level civil engineering programs. Hence, each institution was invited to participate via a letter to the vice-presidents academic and the deans of engineering. To support participation in the project, each institution was offered a nominal sum to cover the costs of administration. Responses from the institutions were immediate and extremely favourable: nine out of 10 institutions agreed to participate, noting their interest in taking part in this international assessment as a way of understanding their own students and program, as well as those internationally.

Ontario Engineering programs were already familiar with notions of learning outcomes and strategies to assess them. As part of the Washington Accord agreement, and for accreditation purposes, engineering programs across Canada are moving to outcomes-based programming, assessment and accreditation for 2016 (EGADS, 2013). Hence there was considerable interest in exploring this large-scale assessment as a

tool. Approximately 90% of all of Ontario's civil engineering students were represented in these programs.

The participating institutions were all public institutions offering a broad range of arts and science programs up to the doctoral level. Located primarily in urban areas, they ranged in size from 14,595 to 75,941 full-time equivalent (FTE) students. Participating institutions included:

- Carleton University
- University of Ottawa
- Ryerson University
- University of Waterloo
- University of Windsor
- McMaster University
- Queen's University
- University of Toronto
- Western University

The civil engineering programs were housed in faculties of engineering and were occasionally partnered with environmental engineering. The programs had between 17 and 40 faculty members. The full-time equivalent (FTE) student populations in the programs ranged from 231 to 573. The number of undergraduate degrees awarded annually ranged from 20 to 101 in the 2010 academic year.

Adapting, Vetting and Validating the Documents

A Lead Scorer was identified in each country to provide discipline/content expertise in the development of the assessments. The individual, a recognised expert in his or her field, was required to review all test documentation, adapting the assessments and translations to ensure appropriateness for their jurisdiction, and vet the assessment documents through pilot tests of students and faculty. The lead scorers from each country worked together to determined appropriate grading of test items and were responsible for training an in-country scoring team.

Ontario's Lead Scorer, in collaboration with the National Project Manager, organised various activities to vet the test in the Ontario context, including piloting the test to students[9] and seeking feedback on the test from faculty members and senior graduate students. The feedback commented on the suitability of the content and difficulty level of the questions and their appropriateness for the Ontario context (including issues of language nuances and technical jargon).

This information was presented to the OECD and incorporated into the assessment. Ontario recommended few significant changes. Indeed there were very few items of contention within the entire international scoring team, and jurisdictional lead scorers came to agreement rather quickly.

Institutional Activities

Each institution participating in the study identified an institutional coordinator. This individual was responsible for administering the study within their institution and liaising with the HEQCO as the National Centre. Playing a vital role in the AHELO study, institutional coordinators were responsible for operationalizing AHELO within their institutions.

[9] Five third-year students wrote the test and provided feedback. Third-year students were selected so that the population of fourth-year students would not be compromised.

Standardising field activities was critical to ensure that any resulting information would be reliable. Regardless of how well-designed the assessment might have been, administration and implementation issues could have impacted the validity and reliability of the data. Thus, an important part of the feasibility study involved securing common field activities.

Operationalizing AHELO Within Institutions

Each institution was in close contact with its National Centre to ensure consistency of implementation across a jurisdiction, and also to receive any support required. In Ontario, Institutional Coordinators (ICs), many of whom were the chairs of civil engineering, were identified within their institutions. The nine individuals attended a one-day training session at HEQCO to provide them with context and background on AHELO, and a roadmap for activities. Following the face-to-face meeting, the ICs and the NMP had weekly teleconferences to provide support and advice on activities.

There were a number of tasks involved in operationalizing the field work, and each institutional coordinator developed a team to assist them in the tasks. Recommended team members included an IT specialist and test administrators. The majority of Ontario institutions followed this recommendation, some with larger teams than others.

One of the ICs' first tasks was to apply for institutional ethics approval to implement the test. Unlike other jurisdictions, Ontario institutions require permission to perform research on human subjects, including students. Based on the short timelines and the need to implement the test quickly, Ontario institutions were required to modify the parameters of the research in order to obtain ethics approval.

For example, whereas AHELO had requested that the ICs have access to students' administrative information (to ensure that the sample was representative of the general population and to better understand the assessment results based on GPA, high school average, etc.), Ontario institutions were not given permission to link the AHELO test results to student files[10]. This resulted in less reliable information on the student sample writing the test and reduced institutions' ability to examine the data. For example, had institutions had access to administrative files, they would have been able to examine individual AHELO test scores with other indicators of student ability, such as GPA. Institutional information of this nature would have supported a better understanding of the validity of the AHELO scores in Ontario[11].

Implementing Field Work

Student and faulty recruitment

Student recruitment was a critical aspect of the AHELO feasibility study. Each institution was requested to identify a sample 200 students to write the test and aim for a 75% recruitment rate. For those institutions with more than 200 students in the designated area (engineering or economics, or the entire

[10] Only ICs were to have access to the student administrative data. The national centre, consortium and OECD would not.

[11] Despite the challenges of gaining ethics approval for this feasibility study, any subsequent assessment of this nature would likely be accepted without significant modification given additional time to develop ethics applications and to communicate the goals of the study.

institution in the case of Generic Skills), ICs were required to provide a sampling frame indicating which students were identified as potential participants.[12] This purposeful sampling frame was intended to ensure that a representative sample of the population wrote the test. In cases where institutions had less than 200 potential test writers, the goal was to have all students participate as a census. All Ontario civil engineering programs had less than 200 final-year students[13], so all eligible students[14] were identified as potential candidates for the assessment at each institution.

Jurisdictions independently determined their own student recruitment strategies. While some made student participation mandatory, others made it voluntary. Those with voluntary participation did not always incentivize students, though the majority did (OECD, 2013a, p. 169). Student participation in Ontario was entirely voluntary. ICs recruited students in any way they felt was appropriate, as long as it was within the guidelines of their ethical protocol. A range of promotional activities and incentives were offered to students to entice participation, such as posters and information sessions, offers of gift certificates, prize draws and donations to civil engineering class societies. Recognising that it was imperative to have sufficient numbers to conduct any type of analysis, student recruitment was by far the most time-consuming and anxiety-provoking activity for ICs. As student participation was voluntary, all Ontario institutions ended up with a non-random, voluntary sample.

Faculty participation in the short context survey was conducted in a similar way. If a faculty (or institution in the case of generic skills) had more than 40 members, a sampling frame was conducted to ensure that a representative sample was recruited. If there were fewer than 40 faculty members, as was the case in all participating Ontario institutions, a census of all students was attempted. Unable to mandate or entice all faculty members to participate in the survey, Ontario institutions ended up with a voluntary sample of volunteers.

Test administration

The AHELO test system was operational between February and June 2012, and institutions could test their students at any time during this window. Each institution was required to a run test of the computer platform to ensure there were no technical difficulties. The times and dates of test sessions were reported in advance to the NPM (in case of technical or emergency issues), who reported this information in turn to the consortium to ensure that the online system was prepared to handle the influx of activity. Institutional coordinators were responsible for organizing the AHELO test session and ensuring that the test administrator (invigilator) was suitably trained (based on AHELO training guidelines).

In Ontario, the timing of the test window was challenging. The academic calendars schedule a one-week break in mid-February followed by mid-term exams and the close of the academic year in April, preceded by final projects and exams. As a result, a very short period of time remained for test administration. Most institutions ran their tests in early to mid-March. Institutions offered the test at a variety of times and days, often taking into consideration student class schedules.

[12] This sampling framework was conducted under the guidance of the Consortium.
[13] Participating programs had between 34 and 137 final year-students
[14] Student were excluded if they were out of the country or had disabilities requiring special arrangements.

Despite testing the system, one Ontario institution ran into technical difficulties and students were unable to submit their tests. While the Consortium rectified the technical issue, all but 8% of student responses were lost at that institution.

Scoring

While the multiple choice questions on student assessments were scored automatically using a computerized system, each jurisdiction was responsible for the manual scoring of the constructed responses of its own students. The lead scorers attended two training sessions with fellow lead scorers to finalize the assessment questions and determine appropriate scoring matrices. This activity ensured the consistency of marking around the world. The lead scorer, in collaboration with the NPM, was responsible for recruiting a small team of scorers and training them in both the test system and the scoring matrix.

In Ontario, a team of six engineers made up the scoring team. The majority of scorers were ICs interested in reviewing the assessments and the work of Ontario students. Scoring took place over two days in June 2012 at the National Centre. As part of a memorandum of understanding (MOU) with Australia[15], Ontario scored some Australian answers and vice versa. This was conducted as an experiment in inter-rater reliability between scoring jurisdictions and as a point of interest for the scoring teams (who would not otherwise have seen other jurisdictions' student responses).

Successes and Challenges of Administration

A primary objective of the AHELO feasibility study was to understand if it was administratively possible to implement a standard assessment, online, in a common way, to students around the world. Indeed it was proven to be possible: experts and faculty members agreed on the common learning outcomes and the assessment questions, and project management and execution of tasks followed a common protocol around the world. There were minor administrative issues in various countries –some institutions dropped out, others had very low response rates or technical issues – but overall the administration of the international assessment was proven successful. The first volume of the AHELO report lays out a number of international lessons learned from the administration phase of the study (OECD, 2012a, Ch. 6).

There were considerable differences in administrative successes and challenges between participating jurisdictions, as well differences between the three strands. For example, one country recognised that the institutions did not have enough computers for the number of students completing the assessments, and thus required a travelling van to deliver computers to the institutions. Incredibly, Egypt was scheduled to implement the test during the Arab Spring, which created significant – though not insurmountable – challenges. The Generic Skills strand faced challenges in student recruitment.

These implementation issues are critical to understanding the practicality of administering the test – a primary goal of the study. Hence, a great deal of work has been done in collecting and international experiences (see OECD, 2013a; Ch. 8 for a description of each nations' experience).

[15] More on the MOU sections below.

Within Ontario, challenges and successes were both generic to all large-scale testing and specific to the AHELO context. Generally, student recruitment for low-stakes testing is extremely challenging. It is time consuming in both the advertising (posters, emails, class visits, etc.) and in the organizing of test sessions. Furthermore it can become extremely expensive when students are provided with material incentives, financial or otherwise. Despite the challenges of student recruitment, the institutions were extremely creative in their strategies, and despite being the most time-consuming activity, it was quite rewarding for the ICs to see their students participate.

As one would expect in a feasibility study, there were a few hiccups in Ontario. The need to obtain ethics approval quickly required institutions to modify the assessment framework to reduce the institutional capacity to link the AHELO results to individual student level data. This reduced the potential value of the results for the institutions; at the time of writing, no institution has yet analysed their own institutional data but have expressed interest in examining it when they receive the comparative jurisdictional report.

In follow up interviews and surveys student and faculty participants indicated appreciation in participating in an international exercise, thereby validating their decision to participate in the study. This suggests that rather than being fearful of benchmarks or comparisons, there was true interest, from all levels, in understanding their programmatic characteristics, strengths and weaknesses compared to those of others in jurisdictions around the world.

Discussion and Conclusions

Analysis of Ontario's Results

Nine jurisdictions and more than 70 institutions participated in the engineering strand of the feasibility study. In Ontario, out of the ten institutions that currently offer a civil engineering program, nine of them participated in the engineering strand of AHELO. Context information was collected from institutions. Across the nine participating institutions in Ontario, there were 155 faculty members and 443 final-year students who participated in the engineering strand of AHELO. Ontario had a response rate of 72% for faculty and 61%[16] for students. While the demographic characteristics, employment status and qualifications of the faculty who participated in AHELO were similar across the institutions in Ontario, there was a noticeable difference in the amount of time faculty reported to spend on teaching and research. Focusing on the student population within the civil engineering program that participated in AHELO, there were also differences in involvement characteristics, such as how students spend their time preparing for class, attending class, or working in paid work related to or unrelated to field of study. Please see Lennon, forthcoming C, for more information on the institutional, faculty, and student characteristics of the participating institutions in Ontario and how they compared to Australia and all nine participating jurisdictions.

[16] For institution 9, out of the 36 students that participated in the assessment, 33 of the responses were not recorded as a result of a technological difficulty with the online system. The response rate for Ontario was determine using the number of students that participated in the assessment rather than the number of actual recorded responses.

What does AHELO contribute to our understanding?

Recall that this feasibility study was not intended to provide any comparative ranking data, but rather to explore the potential for this type of work in both field work and in trialling the assessment tools. Thus, the potential for digging into to the data was either a) not agreed to in the framework, or b) impossible due to data limitations discovered later.

Acknowledging that the data gathered must be interpreted with extreme caution, it is impossible to comment on the results and value they provide to stakeholders (i.e. jurisdictions, institutions, faculty members and students), as they are unable to presently use the information.

Thus, the feasibility study revealed that the tools need to be refined in order to say what contribution the information can make. What also became apparent, is that any reworking of the frameworks or assessments further begs the question of *who* is this information valuable to, in order to tailor it appropriately.

Let us now consider the value of the feasibility results in two ways:

1. What did the various stakeholder groups hope to gain from participating in AHELO?
2. How could the assessments be tailored to suit the needs of the various groups?

Jurisdictions

At the outset of AHELO it was made clear that the purpose was not for international rankings of countries or institutions either internationally or within a jurisdiction. However, the potential for comparing and contrasting across and within countries/jurisdictions was a significant draw. For governments, the ability to know how their institutions and programs are organised and examine the impact on student learning presents valuable information. This has the potential to lead to better comparative policy understanding, and improve the way systems interact with their institutions.

For a variety of reasons, this was not possible in the AHELO feasibility study, but the potential for system-level learning exists. For example, if the information was presented in a way that did not permit for rankings on simple data points, but instead provided comparable information to peer countries or an international average, the potential for international comparisons is possible.

Institutional and program level data

The primary goal of the AHELO feasibility study was to provide information to institutions on how their students performed in various capacities compared to others. Similarly, information collected in the context surveys was intended to provide insight into the characteristics of the educational environments in which students work.

The assessments used in AHELO were not sensitive enough to provide institution level information on student capacities by specific competency areas[17]. Thus, it was not possible to compare institutions on

[17] Engineering Design, Practice, and Analysis, and Generic and Basic Engineering skills.

anything other than the aggregate score of their students. This was disappointing to institutions participating in the feasibility study, however, with a refined tool it would be possible it develop a test that compares competency areas of students in institutions. This information would be very useful in providing an understanding of their strengths and weaknesses. For example, an institution might discover they are very strong in design and practice, but weaker in basic engineering skills. This type of detailed information could provide significant information to program and faculty members when considering curriculum design[18]. Understanding of how they compared to other programs in the jurisdiction or internationally was the primary reason Ontario institutions chose to participate in the study. Despite not being able to receive this information, the potential to reshape the tests in order to do it is possible.

The context data collected at the institutional and program level also has the potential to hold valuable information. Ontario institutions also collect administrative information on faculty and students. Thus, much of this information is readily available in other sources, and the information on their own learning environments was not particularly new information to institutions or programs, nor is the within-jurisdiction comparison.

Yet, the point of interest came from seeing the institutions and programs in comparison to others and the international averages. It could be possible to compare institutions and programs around the world to see the commonalities and differences in learning environments and understand if they impact student capacities. Similarly, a pooled analysis of the international trends in program design and environmental characteristics could be provocative in providing information on trends of successful programs or in providing benchmarking through common structural traits.

Thus, while there is value in the institutional information and comparisons currently provided, greater insight would be gained from international contrasts, as well as pooled information on global trends.

Student level data

Student-level data collected in AHELO had the possibility to provide information on observable trends in student demographics and characteristics, and assessment scores.

However, within the feasibility study framework, it was expected that institutions would be provided a comparison of their students' situations to those in local institutions, and that with that information they might be better able to support student success. For example, discovering that older students are less likely to be successful - perhaps due to outside employment - institutions could choose to develop different student support strategies. Providing comparative information might also encourage collaborations between programs grappling with similar issues. While not provided in the current AHELO framework, it would be interesting to identify international trends in habits of student success, thus supporting cooperation and collaboration regardless of jurisdictional boundaries.

[18] It has been suggested that proper assessment of competency levels would require a re-design of the assessment, and would likely necessitate a longer test for students.

The tests were not designed in a way to deliver student level feedback, as the intention was to combine student-level data at the institutional level. However it became clear in discussions that there is value and interest in providing student-level feedback: a way for students to demonstrate their capacities compared to their peers. In order to provide student level feedback the test would need to be significantly altered to ensure each student was writing a precisely equivalent (or same) test.

One aspect that was discussed at length by participating AHELO jurisdictions, the Consortium, and the OECD was the possibility of providing students with feedback on their assessment scores. The assessment frameworks were not designed in a way to provide reliable scores at the individual level, as it intended to provide institution level feedback. However, if students received their scores relative to others (either in the institution, jurisdiction, or internationally), there could be increased interest from students as it would provide a global and objective documentation of their abilities. This, in turn, could improve student recruitment and student effort in writing the test (creating more reliable information). This was not the intention of the AHELO feasibility study, but was of significant interest to many participating jurisdictions. This is one of many possible outputs of this type of assessment, but to doing so would necessitate a different assessment framework.

Conclusion

The AHELO feasibility study was a successful enterprise in building international relationships, aiding comparative system-level understanding, supporting institutional/programmatic understanding and exploring the potential of international student-level assessments. A great deal was learned from this research, both within jurisdictions and at the international level of the OECD. We know, for example, that is it is possible to administer a standard test to students around the world, and it seems there is interest from a variety of stakeholders, particularly the engineering programs, to do so.

Within Ontario, we benefited from participating in the international conversation on the broader value of establishing and measuring learning outcomes. As Ontario is grappling with how to develop a system that incorporates learning outcomes, understanding how other systems are engaging with them has been appreciated. It was particularly interesting to see the tension between how various jurisdictions desire to use international learning outcomes assessments as either system level benchmarks or for institutional and program level improvement.

As a feasibility study, the AHELO work produced many lessons learned but raised even more questions. It was found that there is there is interest in international assessments from governments, institutions, programs, faculty members and students. It was also determined that it is possible to have agreement on expected learning outcomes and appropriate assessments from around the world. Furthermore, it was found that it is possible to test students around the world in compatible ways. These were the primary questions of the AHELO study.

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