

University Undergraduate Teaching Quality

Background

Ontario's 20 publicly assisted universities offer graduate and undergraduate degree programs in a wide variety of fields. In 2010/11, these universities enrolled the equivalent of about 390,000 full-time students, excluding about 44,000 foreign and other students taking courses not eligible for provincial assistance. These universities employed approximately 15,000 full-time faculty members. Faculty include tenure-stream staff, who have both teaching and research responsibilities; teaching staff, who generally have no research responsibilities; and part-time sessional instructors, who are under contract to teach one or more courses.

Most Ontario universities were established or continued by acts of the provincial legislature that set up their governing structures. University governance is often a shared responsibility between the Board and the Senate. The Board is generally responsible for the university's corporate side, including management of property, revenues, expenditures and other business affairs. The Senate is responsible for academic matters such as determining the courses of study, setting admission standards, and awarding diplomas and degrees.

Although historically Ontario universities have enjoyed a great deal of autonomy, they are

generally required to report on financial and other matters to the Ministry of Training, Colleges and Universities (Ministry). Also, in addition to tuition fees, funds from student services, donations and other miscellaneous revenue, universities depend on a significant amount of government funding. Excluding government funding for student assistance, research and capital grants, the Ministry provided approximately \$3.3 billion in operating funding to Ontario's universities in 2010/11.

The Ministry's vision for post-secondary education is to build the province's competitive advantage and enhance its quality of life by having the world's most educated people and the most highly skilled workforce. Since the Ministry expects that 70% of all new jobs will require education and training beyond the high school level, its goal is to have 70% of the people of Ontario attain post-secondary credentials by 2020.

University professors typically have two main responsibilities—teaching students and conducting research in their field of expertise. At the undergraduate level, instruction is more oriented to the classroom teaching of specific courses, while at the graduate level it tends to be done on more of a one-to-one basis or in small group settings. Teaching students contributes significantly to their learning, and ineffective teaching can have an adverse impact on learning. Consequently, high-quality instruction

can help the Ministry, the universities and Ontario's students achieve their goals.

Audit Objective and Scope

The objective of this audit was to assess the extent to which the Ministry and selected Ontario universities support, assess and periodically report meaningful performance information on the quality of instruction provided to undergraduate students.

Senior management at the Ministry and selected universities reviewed and agreed to our audit objective and associated criteria.

Our audit work was primarily conducted at Brock University, the University of Ontario Institute of Technology, the University of Toronto, and the Ministry of Training, Colleges and Universities. This work focused mainly on students at the undergraduate level, because undergraduates make up the majority of university students. We also met with the Council of Ontario Universities (COU), which represents the interests of Ontario's publicly assisted universities; the Ontario Confederation of University Faculty Associations, which represents the faculty associations of Ontario universities; and the Ontario Undergraduate Student Alliance, which represents the interests of undergraduate university students. We also spoke to representatives of the Higher Education Quality Council of Ontario, an Ontario government agency set up to generate evidence-based research to assist in the improvement of the post-secondary education system, and to the Ontario Universities Council on Quality Assurance (OUCQA). The OUCQA was established by the COU to oversee quality assurance processes for all academic programs offered by Ontario's publicly assisted universities.

In conducting our audit work we reviewed relevant legislation, policies and procedures, and met with appropriate staff of the Ministry and the universities we visited, including faculty members, department heads and deans (generally, a dean is

in charge of a professional faculty such as engineering or law, or an academic faculty such as humanities or social sciences). In addition, we met with a number of students at each university we visited, researched practices in other jurisdictions, and engaged an adviser who is recognized as a leading scholar in research on student development and teaching assessment.

We did not rely on the Ministry's or universities' internal audit departments to reduce the extent of our audit work, because they had not conducted any recent audit work on university teaching quality.

Summary

From the Ministry's perspective, a university's most important mandate is that it does a good job of teaching its students and preparing them for the future workforce. We believe students, their parents and the public would agree.

The administrators (deans and faculty or department heads) we spoke to at the universities visited noted that assessing undergraduate teaching quality in universities is complex and not easily quantifiable. Nevertheless, most felt that relevant measures could be developed to give insight into teaching quality. Although both the Ministry and the universities we visited were not formally assessing and reporting on teaching quality and effectiveness on a regular basis, we observed that information concerning teaching performance that may be useful in some capacity was available at all three universities. For instance, all Ontario universities, including the ones we visited, have instituted a good process whereby undergraduate students are generally given the opportunity to complete evaluations toward the end of the courses they take.

However, our review indicated that little aggregate analysis of the student evaluations is done at the universities we visited, and only about one-quarter of Ontario's universities indicated that they

make the summarized results of these evaluations available to students to assist them in their course selection decisions.

It should be acknowledged that, notwithstanding any issues regarding teaching quality, a recent survey of Ontario university students indicates that 78% of senior-year students were satisfied with their educational experience, and all three of the universities we visited had processes in place to varying degrees to improve teaching quality, such as establishing teaching centres and considering teaching performance in tenure and promotion decisions. Nevertheless, some of our key observations on teaching quality at the universities we visited and from available data at other universities suggest a need to better ensure that teaching quality is valued, encouraged and rewarded.

These observations include the following:

- Only one of the universities we visited periodically aggregated undergraduate student course evaluation data, although one of the other universities informed us that it was in the process of establishing a new course evaluation framework and planned to aggregate course evaluation results and analyze them once the system was fully implemented. The third university we visited was not aggregating and reporting the results of student evaluations, nor did it plan to. In fact, we were advised that a decision to defer a faculty member's tenure was reversed on appeal in part because this university's administrators did not have aggregate student evaluation data to demonstrate that the results of this professor's student evaluations were below their expectations.
- A number of faculty we spoke to felt that their annual performance appraisals did not provide them with appropriate feedback on teaching performance. We noted examples where student evaluations had been critical of teaching performance but there was no evidence that specific guidance was provided or that the faculty members had sought assistance to improve their teaching skills. Also, none of the universities visited required providing written performance appraisals to sessional instructors, even though they accounted for between 10% and 24% of full-time-equivalent staff.
- We reviewed a sample of tenure and promotion decisions at the three universities visited and noted that the documentation available on teaching quality was generally positive. However, at one university we were able to review documentation relating to 2011 only, because documentation for previous decisions had been destroyed in accordance with the university's collective agreement. At another university, one individual who was granted tenure was rated well below average in student course evaluations, and administration had consistently suggested improvement in teaching performance. This university did not have the option to defer tenure decisions until performance improved, because a negative tenure decision leads to termination according to its agreement with faculty.
- According to aggregate undergraduate student course evaluation results at one of the universities visited, the university's Faculty of Education consistently outperformed all other faculties by a significant margin in overall ratings of teacher effectiveness. We were told that virtually all members of this faculty, unlike those of other faculties, had formal training in how to teach. Ontario universities in general do not require faculty members to have formal training in teaching. At all three universities visited, performance appraisals revealed examples where, to varying degrees, there was room for improvement in teaching effectiveness, but we did not see evidence that these instructors had been provided with specific guidance or sought assistance from the universities' teaching and learning centres. In fact, at two of the universities visited, records at the centres indicated that faculty

attendance at teaching workshops averaged less than one hour per instructor per year.

- While ministry funding to Ontario universities has increased significantly over the past decade, according to the Council of Ontario Universities (COU), Ontario universities receive less government funding per student than universities in any other Canadian province. A recent COU study also noted that Ontario's student-to-faculty ratio is the highest in Canada. In one university visited, 75% of first-year classroom spaces in several faculties were in classes with over 100 students. Research indicates that large classes can pose challenges to providing effective instruction, which can impact student learning. In a recent survey, faculty across the province noted that their workload had increased over the last five years, resulting in their reducing one-on-one time with students outside the classroom, giving more multiple-choice tests and giving fewer writing assignments.
- The Ministry is making progress toward achieving its goal of having 70% of Ontario's population hold post-secondary credentials by 2020. It reported in 2011 that 64% of Ontarians aged 25 to 64 had post-secondary credentials, compared to 56% in 2002. However, we found that two years after graduation only 65% of graduates surveyed were employed full-time in a job that was related to the skills acquired in their studies. The Ontario Undergraduate Student Alliance indicated to us that students would find such information on graduate employment outcomes beneficial in choosing their university and program of study.

Detailed Audit Observations

PROCEDURES TO ASSESS TEACHING QUALITY

Although the administrators we spoke to at the universities we visited (such as deans and faculty department heads) noted that assessing undergraduate teaching quality is complex and not easily quantifiable, most felt that relevant measures could be developed to give insight into teaching quality. Administrators also noted that no one indicator was sufficient in itself to assess teaching quality. Although the universities we visited were not formally assessing and reporting on teaching quality and effectiveness on a regular basis, we observed that information on teaching performance that may be useful in some capacity—such as student course evaluations, performance appraisals of instructors, student surveys and program reviews—was available at all three universities.

Student Course Evaluations

Student course evaluations are questionnaires that require a written or selected response on a wide range of topics such as course content and the quality of instruction. Although the process differed at the three universities we visited, questionnaires are typically given to students two to three weeks before the final course exam, and results are not provided to instructors until after the final exam is marked and student grades are submitted. In general, policies surrounding the student evaluation process were designed to ensure that the instructor does not influence the responses and that the responses are provided anonymously.

Research on student evaluations reveals that some faculty members question the ability of students to properly assess instructors, but other research indicates that most have a positive view of student course evaluations. Even though research shows that students cannot accurately assess an

instructor's knowledge or competency in the discipline, a number of studies conclude that student evaluations are valid, reliable and useful when examined thoroughly. In addition, these studies indicate that students can very accurately assess the effectiveness of in-class teaching, including presentation, clarity, the instructor's level of organization, the course workload and their own overall learning experience.

We reviewed the student evaluation process at the three universities and were informed that most undergraduate courses were being evaluated. Exceptions were small classes and one university that did not always evaluate courses taught by part-time sessional staff. Only one of the three universities used a common questionnaire for all undergraduate courses. The other two universities did not have a common student evaluation questionnaire to be used across different faculties and, in one case, student evaluation questionnaires even differed across departments within a single faculty.

The university that used a common questionnaire had also taken the initiative of developing an online system where data could be aggregated and compared at the faculty and university levels. Our analysis of this data revealed that, over the last five years, the average instructor score was 1.22 on a scale of -2 to +2, indicating that students were generally satisfied with the quality of instruction they had received. Further analysis of this data revealed the following:

- There were significant differences in professors' scores between faculties, with the average scores over the last five years ranging from 1.03 to 1.46. However, the university had not formally investigated reasons for differences between faculties in order to identify and share best practices that could improve teaching quality at lower-performing faculties.
- We also noted differences in the performance of different types of instructors. For example, over the last three years, tenure-stream and teaching-stream faculty were rated almost identically (1.23 and 1.25) by students,

whereas sessional instructors on average received lower scores (1.03). This university relies heavily on the use of sessional staff, who accounted for 24% of its full-time-equivalent staff and were responsible for teaching approximately 40% of its courses. This overall student assessment was consistent with the opinions of the administrators we spoke to, who indicated that, partly because sessional staff often have competing employment commitments, they generally provided instruction that was of lower quality.

One of the other universities visited informed us that it was in the process of establishing a new online course evaluation framework with core questions common to all faculties and departments. As well, this university planned to aggregate the results and undertake analysis of the data once the system was fully implemented. At this university, the vast majority of faculty received a teaching rating of at least "good" in the student course evaluations we reviewed.

We could not review student course evaluations at the third university because its collective agreement with faculty stipulates evaluations to be the property of the professor, and we were not given access to them. The collective agreement stipulates that student evaluations can be used by administration in the tenure and promotion process, and for annual appraisals. However, a score from student evaluations was recorded in about half the activity reports we reviewed (faculty members submit these reports to administrators for annual appraisal purposes). Most of these scores were positive, although we could not verify their accuracy, and in many cases it was unclear whether the score represented an overall average of different questions concerning teaching performance, or whether it reflected the answers to a single question. We observed an instance at this university where the decision to defer a faculty member's tenure, based on concerns about teaching, had been reversed on appeal. University administrators informed us that this was due in part to the fact that they did not have aggregate

student evaluation data to demonstrate that the results of this professor's student evaluations were below their expectations.

We found that only one of the three universities gave students access to the summarized results of course evaluations, and this university informed us that only half of its students could easily access the results. This university also informed us that once its new framework is implemented, students would have access to the summarized course evaluation results unless the instructor elects to opt out of the process. The students we spoke to at all three universities, as well as representatives from the Ontario Undergraduate Student Alliance (OUSA), felt that students would find the results of student course evaluations useful for making decisions regarding future course selection. As well, OUSA representatives and some students we spoke to noted that when results are not available, students tend to not take the evaluation process as seriously. This was because they feel that the results are not actually used by the university or the professor. We contacted all 20 publicly funded universities in Ontario and were informed that they all provide most students the opportunity to complete course evaluations. However, just five indicated that the results of these evaluations are generally made available to students.

While administrators at two of the three universities generally felt that the results of student course evaluations could be used along with other indicators to provide insight into teaching quality, none of the three universities formally used such evaluations in aggregate to periodically analyze and report on teaching quality at the level of the university as a whole or at the faculties we focused our work on.

Annual Performance Appraisals of Faculty

The annual appraisal of faculty can assist faculty members in their career development and identify weaknesses in performance to facilitate improvement. The three universities we visited had policies

in place to annually assess the teaching performance of tenure-stream and teaching-stream faculty. Although the three institutions used different processes, all three included a requirement for faculty members to submit an activity report to the administration detailing, among other things, their teaching activities. This activity report could include information on courses taught, supervision of students, course development, awards and honours, improvements in teaching, and professional development. We were informed that these activity reports and other relevant information are considered along with student course evaluations in the appraisal of the faculty members' overall and teaching performance. The primary source of data available to assess in-class teaching performance at the three universities we visited was student course evaluations, because in almost all cases these were the only documented assessments of classroom instruction.

At one of the universities visited, administrators gave the vast majority of faculty selected for review an overall rating indicating satisfactory teaching performance. At the second university, although the faculty members we selected had received an annual appraisal, about half the professors evaluated did not receive a quantitative score or a qualitative rating tied to specific performance criteria. At the third university, the vast majority of faculty were appraised as being in compliance with their collective agreement—which, according to the agreement, implies satisfactory teaching performance. The administration at this university was generally of the opinion that recognizing differing levels of performance would be useful in facilitating improvements in teaching. However, under the collective agreement, there was no requirement to provide faculty members with a performance appraisal unless a performance-related concern arose.

We reviewed a sample of faculty performance appraisals at the three universities visited and noted the following:

- In a few instances at one university, student evaluations suggested that there may be room

for improvement in teaching performance, but there was no evidence in the appraisal or in the file that specific guidance had been provided to the faculty members or that any action had been taken by the faculty members to facilitate improvement.

- Another university's institution-wide student evaluation results indicated that its students were not fully satisfied with the performance of approximately 20% of full-time faculty members. Yet, despite the suggestion in student evaluations that there was room for improvement, in some instances we saw no evidence that the faculty member either had been directed to seek or had sought help. We also observed instances where the administration's appraisal of satisfactory performance was not in line with the results of student course evaluations. In one such case, a faculty member's student evaluation results were well below the average, and the administrator had recommended that this individual seek help with teaching skills, but, nevertheless, this faculty member's teaching performance was appraised as eight out of 10.
- At the third university, student comments recorded on course evaluations were not generally reviewed, and the administration often evaluated only the one question on the student evaluations that asks about overall performance. This was despite the availability of student responses to a number of potentially informative questions, including whether the instructor presented material in an organized and well-planned manner, explained concepts clearly with appropriate use of examples, and communicated enthusiasm and interest in the course materials. In our review of a sample of student evaluations, in some cases it was not evident whether the administration had provided feedback to faculty members whose teaching in specific areas likely had room for improvement (although the vast majority of faculty members received

an overall score qualitatively associated with good performance).

At the three universities we visited, a number of professors told us that student course evaluations factored too highly in the assessment of teaching and that their performance appraisals did not provide them with appropriate feedback on their teaching. Some professors at one university suggested that other evaluation techniques, such as periodic peer reviews by other professors, could be used to augment student course evaluations of in-class instruction. However, none of the universities visited used these other evaluation techniques to do so on a regular basis.

Performance Appraisals of Sessional Instructors

As a general rule, none of the universities visited provided written annual performance appraisals to their sessional instructors. Sessional instructors at the three universities accounted for between 10% and 24% of full-time-equivalent faculty. At the university that had the largest proportion of sessional staff, many of them had been employed at the university for several years.

The sessional instructors we sampled generally received favourable evaluations from students at two of the three universities visited. At the third university, we observed several instances where sessional instructors received lower course evaluation scores than the faculty average, and there was no evidence that university administrators instructed these faculty members to seek assistance. In one case a sessional instructor received a contract to teach full time after consistently receiving some of the poorest student evaluations in three successive years. While we were informed that the administration had referred this individual to the university's teaching and learning centre, our review of the centre's attendance log did not indicate attendance at any workshops by this instructor during the previous two years, and there was no documentation for any other professional development work done at the centre.

Because two of the three universities did not provide annual performance appraisals to their sessional instructors, and one did so only occasionally, documentation concerning the teaching performance of sessional staff was generally limited to the results of student course evaluations. This was of concern, as research suggests that no one source of information is sufficient to assess teaching quality and that student course evaluations are just one of the factors to consider. As well, one university had no requirement to administer student evaluations if the course was taught by a sessional instructor. Consequently, for some sessional staff, there may be nothing on file to indicate the quality of their teaching.

Student Surveys

All three of the universities we visited participated in national student surveys that gather information to gain insight into the students' undergraduate and graduate school experiences. The National Survey of Student Engagement (NSSE) was the most-used survey and applicable to the widest cross-section of students. The NSSE is described as the leading tool used to measure student engagement in universities, and there is significant literature associating student engagement with learning outcomes. While the NSSE survey asks a lot of informative questions, those responsible for reviewing and analyzing the results at the universities we visited generally felt that the results of the NSSE could be used only to a limited degree to assess teaching quality. Consequently, they were not using the results for such purposes.

Nevertheless, we found that the NSSE solicits information that can inform universities of areas where improvements can be made. To illustrate, at two of the universities we visited, between 25% and 31% of first-year students selected reducing class size as an item the university needs to address to improve their learning experience. Our discussions with one of the survey's creators identified that NSSE results are more useful at the faculty and

department levels than at the university level to identify specific areas that require further scrutiny or action.

Overall, NSSE survey results indicate that students were generally satisfied with their educational experience. For example, in 2011, between 71% and 86% of senior-year students at the three universities rated their educational experience as either good or excellent. The Ontario average was 78%. In comparison, American peer institutions had an average of 84%.

All three universities had also participated in the 2010 Canadian Graduate and Professional Student Survey, in which students were asked, among other things, to comment directly on graduate-level teaching quality. Although none of the universities visited had formally used this survey to identify and address weaknesses, we observed that in aggregate all three performed close to the Ontario average in questions that directly concern teaching quality. For example, for all Ontario universities, an average of 87% of students surveyed rated the overall quality of graduate-level teaching as good to excellent, and all three universities we visited received similar results. At the undergraduate level, two of the three universities we visited participated in the Canadian University Survey Consortium's 2009 survey and again performed close to the average with respect to teaching quality. Overall, 90% of students surveyed were generally satisfied with the quality of teaching they received, and the two universities scored 88% and 93%, respectively.

Program Reviews

In 2010, the Council of Ontario Universities (COU) established the Ontario Universities Council on Quality Assurance (OUCQA). The OUCQA was established to oversee quality assurance processes for all academic programs offered by Ontario's publicly assisted universities and to bring the quality assurance processes that had been in existence for many years under a common framework. The OUCQA is also responsible for auditing each

university's quality assurance processes and approving new graduate and undergraduate programs. We were informed that all universities adhere to this quality assurance framework and that ministry funding for new programs is conditional on the programs' approval by the OUCQA.

The emphasis of the quality assurance framework is on evaluating the overall quality of programs offered by universities. As part of this process, universities are required to self-assess their existing programs once every eight years against a set of criteria that includes an evaluation of the program's curriculum, teaching and assessment methods, and human and financial resources. As well, universities are required to assess whether student learning outcomes have been achieved. Learning outcomes include not only the acquisition of specific knowledge in a given field, but also general competencies such as the ability to think critically, communicate effectively and work well with others.

Program reviews offer the possibility of providing at least indirect feedback on teaching quality, since teaching contributes significantly to student learning outcomes. However, discussions with university staff and our examination of program reviews completed under the new quality assurance framework at two of the universities visited revealed that measuring student learning outcomes continues to pose challenges for universities, a view also shared by representatives we spoke to from the OUCQA and the COU. Recognizing this, the COU developed a Teaching and Learning Task Force in 2011 to identify and promote practices to improve teaching and learning outcomes. We were informed that the Task Force was currently in the process of surveying university administrators to identify how learning outcomes are being assessed and to gather opinions on how to improve the assessment of learning outcomes.

The program reviews at one of the universities identified that it had taken steps to move beyond the presumption that offering appropriate courses with appropriate learning objectives would ultimately lead to students meeting the intended learn-

ing outcomes. This university had used responses from student surveys to illustrate that learning outcomes had been achieved. However, student perceptions of their learning outcomes may not be indicative of actual student achievement. For example, although the students surveyed were confident of their writing ability, faculty noted their concerns with the quality of student essays and writing skills. Representatives at this university indicated that they were still working on ways to measure student learning outcomes, and some suggested that standardized tests of key competencies could assist in this measurement.

Program reviews, supplemented by independent audits of the review process, can provide valuable feedback about program quality, and we believe that with further refinement they could also provide useful feedback on student learning outcomes.

RECOMMENDATION 1

To help ensure that administrators and students have sufficient information to make informed decisions, and that all faculty members receive the necessary feedback to maintain or enhance teaching quality, universities should:

- consider means to aggregate student course evaluation information at the university, faculty and department levels so that administrators can identify best practices and areas requiring attention;
- develop a core set of student course evaluation questions to be used throughout the university to facilitate comparison of student evaluation results;
- provide students with the summarized results of student course evaluations to assist them in making informed decisions on course selection; and
- ensure that faculty, including sessional faculty, periodically receive constructive feedback on their teaching effectiveness, and encourage faculty to undertake any necessary professional development.

SUMMARY OF UNIVERSITIES' RESPONSES

The universities generally agreed that both university administration and students need sufficient information to make informed decisions and that faculty should receive sufficient feedback to enhance their teaching skills as appropriate. One university notes that it is already well-advanced in the implementation of the recommendations, which it expects will strengthen both the quality of post-secondary education and its accountability.

Another university stated that it is already in the process of implementing an online course evaluation framework that utilizes common university-wide questions that will be answered by all students to ensure consistency and enable aggregation and comparability. In addition, once implemented, the new system will further enhance student access to the results of course evaluations and will facilitate constructive, comparative feedback for instructors and administrators. This university is also committed to ensuring that all sessional instructors periodically receive constructive feedback on their teaching effectiveness.

The third university noted that it was interested in developing a core set of student course evaluation questions that could be used throughout the university. As well, the university understands the use and value of aggregate data and providing students with the results of such evaluations. However, to accomplish this, the university will need to work with its faculty association through the collective bargaining process.

TENURE AND PROMOTION OF FACULTY

Faculty members referred to as tenured have met a university's probationary requirements pertaining to teaching, research and other service to the

university. Tenure-stream faculty are the traditional means by which universities are staffed and represent the largest group of full-time-equivalent faculty at all three universities visited. Their responsibilities generally consist of 40% teaching, 40% research and 20% other service (such as participating on committees and performing other administrative duties). At the universities visited, faculty members who achieved tenure were generally awarded the rank of associate professor. Once faculty members receive tenure, it is very difficult for the university to terminate them for performance concerns, although, as in any job, their further progress depends on their ongoing performance. Summaries of tenure applications over the last three years revealed that the three universities granted tenure to 95%, 96% and 100% of the applicants, respectively. We were advised that competition for tenure-stream positions results in numerous well-qualified candidates applying for tenure positions, and therefore high success rates are to be expected.

During their probationary period, tenure-stream faculty members must demonstrate sufficient competence in both teaching and research. At the three universities visited, the probationary period was five to six years. Two of the universities also had interim review processes during the probationary period to assess and provide feedback on the faculty member's progress. At the conclusion of the probationary period, faculty members at all three universities are to prepare documentation with respect to teaching and research, among other achievements, in support of their application for tenure.

While the method of reviewing applications for tenure and promotion differed at the three universities visited, all three included the review of tenure and promotion applications by multiple committees, and approval by the university's academic vice-president and/or president. Information at the disposal of these committees concerning teaching included a teaching dossier that typically contained a description of the individual's teaching philosophy, course development work, sample

assignments, letters from students, letters from colleagues, and relevant honours and awards. The summarized results of student evaluations were also typically available to the committees.

Our review of the tenure and promotion processes at all three universities revealed that, while it was evident what information on teaching performance was being provided for the committees' consideration, it was unclear to what degree this information factored into the committees' decisions. We also noted that even though all three universities appraise full-time faculty members' performance annually, the appraisals were not used to inform tenure and promotion decisions at one university, and at the other two universities it was unclear whether they were used.

We reviewed a sample of tenure and promotion cases at the three universities in detail. At one university, while it was unclear to what degree different sources of information factored into tenure and promotion decisions, the documentation submitted on teaching quality was generally positive and supported committee decisions. We noted from this university's record of tenure decisions over the last three years that 94% of faculty had achieved tenure on the basis of a combination of excellent research and competent teaching, and only one faculty member had received tenure on the basis of excellent teaching and competent research. While research is important to the quality of education provided by a university and to its reputation, faculty seeking tenure might not be sufficiently motivated to pursue excellence in their teaching if they believe such results to be indicative of the relative value placed on teaching in tenure decisions.

At another university, we were told that student course evaluations were heavily relied on for tenure and promotion decisions. However, these were not available for our review because of restrictions in the university's collective agreement. While we did not have access to actual student evaluation results, a score was generally recorded in the documentation made available to us. In the decisions that were available for our review, the majority of evaluations

were positive. However, we could not check the actual student evaluations to verify the accuracy of such information.

At this same university, although peer evaluations were solicited for tenure and promotion decisions, generally such evaluations did not include an in-class evaluation of the prospective candidate's instruction as was done at one of the other universities visited. The information that we could review at this university did not identify significant concerns about teaching quality in tenure and promotion decisions—although, as previously noted, one decision to defer tenure was overturned on appeal because the administration did not have sufficient information to demonstrate that the faculty member's teaching performance was significantly below average. At this university we were able to review documentation relating only to the 2011 tenure and promotion decisions. This was due to the collective agreement, which required all materials relating to the tenure and promotion process to be destroyed immediately after a decision is reached unless an appeal or grievance is lodged. Therefore, the university could not demonstrate that a sound process had been followed in reaching any previous decisions.

The tenure and promotion decisions that we reviewed at the remaining university included examples where faculty members who received student evaluation scores below the average for their faculty were granted tenure and/or promotion to full professor. In each of these cases, the administration noted that the faculty member's research was highly rated. These cases included one where, in the two years leading up to tenure, students rated the faculty member's performance well below average. The administration had on several occasions suggested the faculty member seek out opportunities to improve teaching performance. We observed that, unlike one of the other universities we visited, this university's agreement with its faculty did not give it the option to defer decisions on tenure once the application was under review. A negative decision leads to the faculty member's termination. This was of concern, as we noted a number of examples

where, after the granting of tenure or promotion, student evaluation results declined or did not improve substantially. In some circumstances, allowing the deferral of tenure decisions could give candidates for tenure an incentive to improve their teaching and the additional time to take formal training.

RECOMMENDATION 2

To help ensure that tenure and promotion decisions and the underlying documentation appropriately reflect the relative importance of a professor's teaching ability, the universities should:

- ensure that all relevant information on teaching performance is made available to tenure and promotion committees and that all documentation supporting their recommendations is retained for an appropriate period of time; and
- explore means to ensure that tenure and promotion processes clearly reflect the relative importance teaching ability has with respect to such decisions.

SUMMARY OF UNIVERSITIES' RESPONSES

The universities supported this recommendation and indicated they strongly value their professors' teaching abilities. One university added that it will review its policies and processes to explore means to provide as much information as possible with regard to teaching and other duties and responsibilities in order to further strengthen existing tenure and promotion processes. Another university noted that its current policies address this recommendation, and it will endeavour to strengthen these policies even further. As well, the university noted that it will enhance the communication and training for academic administrators and members of tenure and promotion committees and put in place more specific guidelines for the retention of related documentation.

TRAINING AND PROFESSIONAL DEVELOPMENT

Ontario universities in general do not require faculty members to have formal training in teaching like elementary and secondary school teachers, who are required, at a minimum, to take a one-year program of teacher education. In addition, the three universities we visited did not require faculty members to undertake periodic professional development related to teaching. Nevertheless, most administrators and faculty members we spoke to at all three universities felt that some formal training was beneficial to being an effective university teacher.

Research we reviewed on other jurisdictions identified that initial training of university instructors is now common in several countries, including the United Kingdom. Some institutions in these countries can require 120 to 500 hours of teacher training. In some cases, the completion of this training factors into tenure and promotion decisions. As well, a study done at 22 universities in eight countries found that students judged that professors who had received training in teaching had improved in areas such as enthusiasm, organizational ability and rapport with students.

According to aggregate student course evaluation results at one of the universities we visited, its Faculty of Education consistently outperformed all other faculties by a significant margin in terms of overall professor ratings. Although the university had not formally identified the reasons for this difference, we were informed that virtually all members of this faculty had formal training in how to teach.

At all three universities visited, our review of faculty performance appraisals revealed examples where there was room for improvement in teaching performance, but we did not see evidence that the administration provided specific guidance to faculty or that faculty subsequently sought out assistance. We noted that, while one university had a good initiative to identify and review the bottom 10% of faculty members based on student evaluation

results, the review and any recommended actions were informal. Consequently, it was unclear who the administration determined needed assistance and whether recommendations to obtain assistance were made.

We observed that the three universities visited had teaching and learning centres to support, promote and advance the quality of teaching at their institutions. We also noted that among the services provided at all three of these teaching and learning centres were one-on-one consultations and a variety of teaching workshops open to all faculty members. The faculty members we spoke to at all three universities generally had a positive opinion of the quality of services offered by these teaching and learning centres. However, the available attendance records at the centres (attendance records are not maintained for all services provided) indicate that average attendance in teaching workshops per faculty member was less than two hours annually at one of the three universities and, at the other two universities, less than one hour per year.

All three universities offered orientation to newly hired faculty that included topics related to teaching. We observed that at one of the universities, in addition to a one-day general orientation provided to all new employees, orientation aimed specifically at new faculty was just four hours in length. Attendance records indicate that it was attended by less than 25% of new hires in 2011. We observed that the other two universities offered far more extensive orientation, providing programming over a full week that covered topics such as how to manage the classroom, engage students, design assignments, use technology in the classroom, and plan and maintain courses. At one of these universities, the orientation sessions were open to all instructors, including sessional staff, but we were unable to accurately estimate attendance. At the other university, in which attendance was mandatory, we observed that attendance exceeded 80% of new full-time staff. However, this orientation was not open to sessional instructors; a separate one-day voluntary orientation was provided to them, attended by 60% of new sessional staff.

We noted that the teaching and learning centres at all three universities offered comprehensive training to students serving in a teaching capacity, including programs that provide a teaching certificate upon completion. These programs varied in length, with the longest certificate programs at each university requiring participation in eight to 16 workshops over approximately one to two years. Similar programs were generally not in place for faculty members at the universities, although one university informed us that it had recently opened its certificate program to all faculty members, and another offered a program that awarded a certificate to faculty who had completed at least six teaching workshops.

RECOMMENDATION 3

To help ensure that all faculty members provide effective classroom instruction, universities should work with faculty to encourage greater participation in professional development activities and implement procedures to ensure that faculty who would benefit from additional teacher training are formally encouraged to participate in these activities.

SUMMARY OF UNIVERSITIES' RESPONSES

The universities generally concurred with this recommendation and noted they will continue to emphasize the importance of ongoing development of teaching expertise for all instructors through their teaching and learning centres. One university further noted that it would put in place a mechanism by which those instructors who require additional teaching support are identified and encouraged to engage in suitable professional development. Another university agreed with the importance of effective classroom instruction and will work with its faculty association and faculty to pursue strategies to encourage greater participation in teaching-specific professional development, particularly

for those faculty members who stand to benefit from such training. In support of its commitment to strong teaching and learning, this university created a new position—Vice Provost of Teaching and Learning—and enhanced the role of its Centre for Pedagogical Innovation in order to highlight the importance of pedagogy, teaching and learning. This university also noted that it would review its processes to further encourage staff to undertake any necessary professional development.

FACULTY COST AND WORKLOAD

Total operating revenue for Ontario universities amounted to almost \$7.5 billion in the 2010/11 fiscal year, with the Ministry's operating grants accounting for a significant portion of this amount. Over the last 10 years, ministry assistance to universities has almost doubled, increasing from \$1.7 billion (2000/01) to \$3.3 billion (2010/11). After adjusting for the effects of inflation, this amounts to a 57% increase, which compares to a 54% increase in enrolment, from 253,000 to 390,000 students. While ministry funding to Ontario universities has increased significantly over the past decade, according to COU analysis Ontario universities receive less government funding per student than universities in any other Canadian province. Even when tuition is considered, ministry and COU analyses show that Ontario universities rank at or near the bottom of all Canadian universities with respect to revenue received per full-time-equivalent student.

Expenditures on the salaries of faculty holding an academic rank, such as tenure- and teaching-stream staff, increased from \$1.05 billion to \$2.1 billion between 2000/01 and 2010/11, an increase of about 60% over and above inflation. Over this same period, the number of full-time faculty increased by 25%, from about 12,000 to 15,000. Since student enrolment has outpaced

the growth in the number of full-time faculty, the student-to-faculty ratio has increased. According to a recent sector publication, the average salary of Ontario's full-time faculty is 6% higher than the average for all Canadian provinces and the highest in Canada.

Estimates of the ratio of full-time-equivalent students to full-time faculty in Ontario suggest that it increased from 17 students per faculty member in 1988 to 25 students per faculty member in 2008. A recent estimate prepared by the COU noted that, in 2008/09, if all other instructional and academic staff were included, the student-to-faculty ratio would still be about 20 students per faculty member, the highest of all Canadian provinces.

An increase in the average number of students per faculty member typically results in an increase in average class size. While some studies indicate that factors such as the skill of the instructor and the teaching methods used can compensate for larger classes, many studies on the impact of class size suggest that large classes pose challenges to providing effective instruction, which may in turn impact student learning outcomes. Such challenges include less student interaction with faculty, and difficulties in maintaining the students' attention and motivation. In a recent Ontario Confederation of University Faculty Associations survey of faculty members at Ontario universities, 63% noted that average class size had increased in the last five years, and most respondents expressed concern over the increase. Those surveyed noted that the top three changes they had made to their teaching approach in response to an increased workload were to reduce one-on-one time with students outside the classroom, to give more multiple-choice tests and to give fewer writing assignments.

Data we saw at two of the universities we visited demonstrated that their undergraduate class sizes had increased. Although administrators at one of these universities had concerns about the accuracy of their data, the other university calculated that average class size had increased by 20% over the last 10 years. The third university

had not calculated average class size but did have class-size distribution data for select faculties. For these faculties, more than 75% of available first-year classroom spaces were in classes of over 100 students. In addition, we observed that, although the full-time-equivalent student enrolment at this university increased by 50% between 1998 and 2010, the number of full-time faculty had remained essentially unchanged.

Research suggests that even though larger class sizes have increased faculty workloads for each course taught, the number of courses taught by tenure-stream faculty has declined in the last 20 years from a norm of 3 full courses in previous years. At all three universities we visited, the expected teaching load was generally 2 full courses per year for tenure-stream faculty. The workload for a typical course consists of three hours of classroom instruction per week for eight months, as well as time spent on course preparation, office hours to address student questions and time to mark tests. We were able to obtain sufficient information from some of the faculties or departments that we focused on to gain some insight into actual teaching loads. At two of the universities we visited, the actual teaching load in the departments reviewed that had such information was 1.4 courses per faculty member per year (although teaching-load calculations do not necessarily include the supervision of graduate students, which, for some professors, can be a significant responsibility). At the remaining university, administrators estimated that the annual teaching load for tenure-stream faculty throughout the university averaged between 1.5 and 1.75 courses per year. Although the expected teaching load at all three universities was generally 2 full courses per year, there were a number of reasons why the actual teaching load differed, including that all three universities offered tenure-stream faculty the opportunity to take a one-year paid leave from the university for every six years worked, primarily to undertake focused research. As well, we were advised that the decline in course workloads over

the last 20 years has also been due to a significant increase in the number of graduate students at some Ontario universities over this period. Professors who supervise graduate-level students typically spend less time teaching specific courses and more time providing one-on-one guidance or teaching small groups.

The teaching load for tenure-stream faculty is also significantly affected by their research responsibilities. As previously noted, tenure-stream faculty are typically expected to devote about 40% of their time to research. We noted that all three universities we visited also employed full-time or contract faculty considered as teaching staff, whose primary responsibility is to teach and who accounted for between about 5% and 20% of full-time-equivalent faculty. The expected teaching load for teaching-stream faculty ranged from 3+ to 4 full courses per year. As well, with information supplied to us by the universities, we calculated that the average salary of teaching-stream faculty for the three universities ranged from \$74,000 to \$100,000 annually, whereas the average tenure-stream faculty salary ranged from \$118,000 to \$135,000.

At the two universities we visited that employed the highest percentage of teaching-stream faculty, those we spoke to generally felt that using such staff was a good way to address resource constraints. However, none of the three universities visited had undertaken any documented analysis to determine whether they were using the right proportion of teaching-stream staff. As well, concern was raised at all three universities that having too many teaching-stream faculty on staff can affect the university's ability to conduct leading-edge research, which is generally acknowledged as being a secondary, if not the primary, mandate of a university. This could eventually have an impact on teaching quality if faculty do not keep up to date.

The available performance and promotion information at two of the universities suggests that the quality of teaching provided by teaching-stream faculty is as effective as that provided by tenure-stream faculty. A recent study on teaching

staff concluded that a reasonable inference can be made that there is a positive relationship between the presence of teaching faculty and the quality of the student learning experience. At one university, teaching-stream faculty had to undergo a probationary period similar to tenure-stream faculty during which they were required to demonstrate that they were excellent teachers. Conversely, at this same university, few faculty in the tenure stream had received tenure on the basis of excellent teaching; the vast majority of tenure awards were based on a combination of excellent research and competent teaching.

Sessional instructors also provide an opportunity for universities to address resource constraints. At all three universities visited, sessional staff were generally paid less than \$15,000 per full course taught. Figures provided at the three universities we visited show that sessional faculty accounted for between 10% and 24% of the full-time-equivalent staff. However, sessional faculty are responsible for a larger proportion of the teaching at all three universities. For example, we calculated that at the university where sessional faculty accounted for about 10% of full-time-equivalent staff, they were responsible for teaching 25% of the courses.

The administrators we spoke to at all three universities visited indicated that there are circumstances where sessional faculty may be the most qualified to teach a specific course. However, using these faculty is often not an appropriate way to address resource constraints. Among the reasons cited are that sessional faculty often have other employment commitments that take priority and they are usually not as available to students outside the classroom. At the one university that had institution-wide data, our analysis of student evaluation results identified that although students were generally satisfied with the performance of sessional faculty, teaching-stream and tenure-stream faculty on average tended to perform better than their sessional counterparts.

RECOMMENDATION 4

To enhance their understanding of the impact that use of various teaching resources has on teaching quality and student outcomes, universities should:

- assess the impact of class size on teaching quality and study how best to address the challenges posed by large classes; and
- weigh the impact of using teaching and sessional faculty and the extent to which they can best be used to address resource constraints.

SUMMARY OF UNIVERSITIES' RESPONSES

The universities agreed that teaching quality can have an effect on student outcomes. One university noted that it will undertake an assessment of the impact of class size on teaching quality and of how best to address any challenges posed by large classes. As well, the university would continue to weigh carefully the impact of sessional faculty and the ways in which they can be fairly and effectively used to help the university's students. Another university stated that it would continue to use existing research and data in this area to explore means to measure the impact of various teaching resources on teaching quality and learning outcomes and will take action where opportunities are found to improve student outcomes.

PERFORMANCE MEASUREMENT AND REPORTING BY THE MINISTRY

In May 2011, the Ministry announced a new strategy for post-secondary education. The Ministry's ultimate goal is for 70% of Ontario's population to hold post-secondary education credentials by 2020 that will prepare them for the workforce of the future.

The Ministry expects that 70% of new jobs will require education and training beyond high school.

In 2011, the Ministry reported that 64% of Ontarians aged 25 to 64 had post-secondary credentials, a notable increase from 56% in 2002. To further increase the number of post-secondary graduates, the province has pursued a growth strategy that has resulted in a more than 50% increase in the number of university students over the last 10 years, from approximately 250,000 full-time-equivalent students in 2000/01 to 390,000 in 2010/11. In addition, as part of its May 2011 plan, the Ministry has committed to funding an additional 40,000 university spaces by 2015/16.

Working with students, faculty and post-secondary institutions to identify and measure the essential elements of teaching excellence to ensure that teaching is improved is another key goal of the Ministry's strategy. While the Ministry has committed significant financial resources to support increased enrolment in Ontario's universities, a significant portion of faculty surveyed recently by the Ontario Confederation of University Faculty Associations believed that the quality of undergraduate education had declined over the previous five years. The Higher Education Quality Council of Ontario (HEQCO) and the Commission on the Reform of Ontario's Public Service (Drummond report) have expressed similar concerns that the quality of education at Ontario universities has diminished, for reasons including increased class sizes and the use of more sessional instructors. The quality and effectiveness of teaching can have a considerable impact on student learning outcomes

as well as on the Ministry's ability to achieve its goal to adequately prepare Ontario's workforce for the future.

Although the Ministry currently does not directly assess teaching quality in Ontario universities, it collects information that can assist in the assessment of student outcomes, which are in part dependent on teaching quality. For example, the Ministry surveys university graduates and publishes graduate employment rates by program type and institution for the periods six months and two years after graduation. Although it is not published, a significant amount of additional graduate employment information is also collected from these surveys, such as whether graduates are employed full time and the annual salary of graduates.

Many university staff and administrators we spoke to felt that graduate employment outcomes can be used in combination with other indicators to provide insight into teaching quality. In addition, the Ontario Undergraduate Student Alliance as well as the students we spoke to at the universities we visited said that students want additional information on graduate employment outcomes to assist them with choosing a university and program of study that could help them get a good job when they finish university.

The latest survey of 2008 graduates highlighted that more than 90% of graduates are employed two years after graduation. However, our calculations, shown in Figure 1, indicate that a significantly smaller percentage are employed full-time in a job that is somewhat or closely related to the skills acquired in their studies. Employment outside one's

Figure 1: Employment Situation of Ontario's 2008 University Graduation Class (%)

Source of data: Ministry of Training, Colleges and Universities

Graduates Two Years after Graduation	Universities Visited			All Ontario Universities
	A	B	C	
Employed	91	95	94	94
Employed full-time*	77	81	77	78
Employed full-time in a job related to skills acquired in university*	61	73	62	65

* unpublished (calculated)

original field of study may very well be rewarding for many graduates; nevertheless, undergraduate students in the process of considering their career options would still find it beneficial to know what the actual employment outcomes for graduates are. As well, by our calculations, only 59% of graduates surveyed across Ontario indicated that they were employed in a full-time job that required at least some university education.

Other jurisdictions publish information on graduate outcomes that is significantly more comprehensive than that published in Ontario. In particular, students in British Columbia are surveyed about their status two and five years after graduation, and the results are reported by survey year, discipline and institution. The surveys' goals are to address university accountability, gather relevant data for program evaluation and planning, and provide students with information to help them make informed decisions. In addition to employment outcomes, the B.C. reports include graduates' opinions on the usefulness of skills acquired in the program of study to their functioning in their jobs, the quality of instruction and learning outcomes. For example, graduates are asked their views on how their university program helped develop skills such as written and oral communication, reading and comprehension, group collaboration and critical analysis. One of the universities we visited stated that it has agreed to participate in a new survey of graduates that is modelled after the B.C. survey.

In 2005, the Ministry created the Higher Education Quality Council of Ontario (HEQCO) to generate evidence-based research to assist in improving the post-secondary education system. Since HEQCO was established, it has published many research papers that have a bearing on teaching quality. Topics covered include the approaches taken to deal with the challenges of large classes, the use of teaching-stream faculty to address increased enrolment, and the validity of student course evaluations as an effective measure of teaching quality. At the time of our audit, HEQCO was

in the process of developing a set of performance indicators including measures to monitor, evaluate and improve the quality of education in Ontario's post-secondary education system.

RECOMMENDATION 5

To assist students in making informed decisions on university and program selection and to help achieve its goal of adequately preparing Ontario students for the future workforce, the Ministry of Training, Colleges and Universities should:

- collect and make public sufficient information on student outcomes, including information on graduate employment outcomes and students' satisfaction with the quality of their education; and
- work with the university sector to support the development of meaningful measures for student learning outcomes as a way to maintain teaching quality.

MINISTRY RESPONSE

The Ministry supports the Auditor General's recommendation and agrees that assessing teaching quality in the university sector is not easily quantifiable and is difficult to measure.

The Ministry currently publishes student outcome data, including graduation and employment rates for university graduates, and it is committed to making public additional information that it has collected on graduate employment outcomes.

As well, the Ministry is currently working with universities to implement an Ontario Education Number that will improve collection of student-level data, and the Ministry will consider utilizing performance-reporting mechanisms already in place with universities to collect additional information relating to teaching quality.

As it is increasingly recognized that student learning outcomes may be an effective way to measure teaching quality, the Ministry has made student learning outcomes a key focus of its future direction and has recently started to engage sector stakeholders, including universities, on learning outcomes. In addition, the Higher Education Quality Council of Ontario (HEQCO) supports this focus through several projects aimed at defining and understanding student learning outcomes, including co-ordinating Ontario's participation in an OECD feasibility study, and evaluating the use of learning-outcome measurement tools in pilot universities. As well, HEQCO is working with the post-secondary education sector on system performance measures, including indicators of quality.

SUMMARY OF UNIVERSITIES' RESPONSES

The universities agree that meaningful information would benefit students in making informed decisions on university and program selection, and they will work with the Ministry and the university sector to develop meaningful measures for student learning outcomes. One university noted that it already collects information on teaching quality and student outcomes and will continue to improve on these efforts. In 2012/13, the university will be implementing a Graduate Outcomes Survey for graduates of undergraduate programs who are five years post-graduation. The survey will provide valuable feedback on the status, experiences and perspectives of graduates as they become established in their post-graduation careers.