



Algonquin College

Academic White Paper

Academic Technologies

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Academic Technologies is one in a series of Academic Area white papers that includes:

- Accommodating Increased Enrolment
- Applied Research
- Apprenticeship
- Community and Business Integration
- College Programming Strategy
- Enrolment
- Internationalization
- Interprofessional Education
- Sustainability

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PREFACE

In 2007, Algonquin College began a five-year strategic planning process to re-think its focus and set a direction in line with current trends and future needs. In the context of that strategic exercise, the Academic Area is exploring key questions about the ways the College may sustain its reputation, enhance its educational offering, and deliver that offering consistently across all programs. The following is one of ten papers addressing specific issues that demand forward-looking consideration.

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EXECUTIVE SUMMARY

Algonquin College has a rich history in the application of technology at both the program level and in the wider context of supporting student learning and has, over the years, held a leadership position among Ontario Colleges in the areas of innovation and integration of technology into program delivery, support services and corporate systems. Lately however, other Colleges have made gains on Algonquin and significantly reduced the gap that separated us from others on several metrics, and in some cases surpassed us.

There is ample evidence through pedagogical research to suggest that the appropriate integration of technologies in the learning environment enhances student retention of knowledge, improves accessibility, improves student success, add flexibility and connects with today's digital native audience.

Innovation and Technology (and in particular Information Technology (IT)) is therefore seen as a means to overcome in part these challenges and set the College on a course to achieving several of its strategic goals.

As such, the College has reaffirmed in its 2008-2013 Strategic Plan its commitment to conducting twenty percent (20%) of its full-time daytime program hours online, something it was unable to achieve in its last strategic plan but is determined to do so over the next five years.

In addition, the College has recently submitted an \$11 million Virtual Campus Capital request to the Ministry of Training, Colleges and Universities (MTCU). The Algonquin College Virtual Campus (ACVC) proposal aims among other things to enhance student success, address access issues and increase enrolment capacity.

Finally, a number of complementary yet realizable recommendations detailed in this paper will, if implemented over the next five years, re-position the College well from a reputation and standing viewpoint amongst Ontario College and beyond. It is expected that through the implementation of these recommendations, innovative ideas will be applied in a variety of areas (applied research, development and delivery of programs, services supporting students, etc) and will aim to increase enrolment without the associated traditional physical footprint, address access issues in terms of targeted population segments (as defined by the Ontario government priorities), diversity of population and choice for students, and enhance College reputation as a leader in the integration of technology in education.

THE ISSUE

At a Glance

- Inability to maintain standing (perceived or real) as a technology leader among Ontario Colleges
- Failure to meet hybrid course delivery targets in the 2003 – 2008 Strategic Plan and inconsistent quality of online portion of hybrid courses
- Inability to address faculty- and program-level innovation towards the better use education technology
- A growing disparity between traditional forms of academic delivery and the requirements of today's "net generation" learners.

Ontario College Standing as a Technology Leader

Algonquin College has, over the years, held a leadership position among Ontario Colleges in the areas of innovation and integration of technology into program delivery, support services and corporate systems. From wide-area wireless network access to VoIP telephony, from campus-wide standardized adoption of the course management system Blackboard™ to the sophisticated electronic medical mannequins of the Health Centre simulation lab, the College was a leader amongst educational institutions, was the subject of accolades, admiration and envy.

Lately however, other Colleges have made gains on Algonquin and significantly reduced the gap that separated us from others on several metrics, and in some cases surpassed us (e.g. use of podcasts, YouTube-style videostreaming in marketing of programs). This can be attributed in part to our inability to maintain the momentum needed to stay at the technological forefront owing to the resource implications, competing internal priorities for limited resources (dollars, personnel, time), and the decreasing cost of ownership of those technologies which has facilitated entry into those markets by other institutions. In many respects, several areas of IT, which in the past would have been considered avant-garde, are now simply viewed as commodities, expected by everyone to be ubiquitous and reliable (e.g. network access, high bandwidth availability, email, calendar, etc).

Achieving Quantitative and Qualitative Hybrid Course Delivery Goals

The 2003 – 2008 College Strategic Plan set the direction for academic departments to adopt IT technology as a means to develop and deliver "online" a portion of the curriculum. These blended course offerings were labeled "hybrid" courses. The target set forth in that plan was that by 2008, 20% (a program-level target) of the overall full-time daytime scheduled program hours would be conducted online. In reality however, only 12.5% was achieved by 2008 and this figure includes fully online General Education Elective course activity. The 2008 – 2013 College Strategic Plan reaffirms this commitment of providing 20% of our combined programming hours in an online format and indicated the "College will explore new ways of delivering programs in an accelerated format to better meet the need of the adult learner. As well, increased parallel offerings of some programs in continuing education and/or distance education will facilitate schedules that are tailored to the students' needs." The plan also commits Algonquin to fostering "a culture of innovation which leads to new and creative practices."

To put it in perspective, in order to achieve the 20% goal, we will not only have to maintain the current level of online activity (including General Education activity) but develop an additional two (2) hours/week (on average) of online offerings per program-level across all full-time daytime programs of study.

Equal to the importance of our continued development of our online offerings is the renewed focus on the quality of those offerings. The College presently lacks a mechanism for the continuous assessment and quality improvement of its online or hybrid courses. To some extent, this has in the past led to the simple import of course content to an online format without due consideration of the quality of the online experience, resulting in some student dissatisfaction.

Creating a Lifelong Technology Learning Culture for Teachers

We often hear teachers say that the moment they are hired as full-time teachers by the College, they begin to lose touch with their industry and many begin to lose touch with technological advancements necessary to:

- Impart the knowledge and skills of their subject matter,
- Prepare their students for tomorrow's job market, and
- Stay in relative technological synchronicity with their audience.

While the College offers some professional development (PD) avenues to mitigate the above-raised issues, evidence suggests the need to do more to alleviate the "rust-out" technology factor in our teaching cadre.

BACKGROUND AND CONSIDERATIONS

As outlined in the Executive Summary, Algonquin College has a rich history in the application of technology at both the program level and in the wider context of supporting student learning.

The College Technologies Committee annually makes recommendations for capital IT funding projects that total on average \$2 million per year. These investments have enabled the College to provide a secure and robust central backbone, equip faculty with the technology they require, and transform over 230 College classrooms and labs into eclassrooms. This Capital funding does not however often extend to include program-specific technology acquisitions. Program-specific technology acquisitions are dealt with through the annual call for capital funding submission process. There is however no mechanism to address or fund individual faculty technology or innovation requests.

Development of online courses targeted for delivery to our full-time daytime student population began in 2000 with the initial development of 12 online general education electives. In the Fall Semester of 2008, students are provided a choice among 32 online general education courses and through the 2008 – 2009 Academic year over 6,000 students will enroll in at least one online general education course accounting for almost 4% of our program activity.

There were 231 unique hybrid courses (560 total sections) offered during the Fall 2008 semester. Hybrid courses were first offered in the fall of 2002 and the development of these courses grew rapidly during the 2003 – 2005 period. While the most typical hybrid course blends one hour of online activity with 2 hours of in class/ lab activity there is considerable variation in each program area on the nature of the split and the type of activity that occurs during the online portion. The 560 sections of hybrid courses offered in the Fall 2008 semester accounted for almost 22,000 course enrolments and can be equated to 8.5% of the total program hours offered that term.

Algonquin College has, over the years, held a leadership position among Ontario Colleges in the areas of innovation and integration of technology into program delivery, support services and corporate systems. Examples of the Colleges use of innovative technologies and applications include but are not limited to:

- The Colleges first computer access centre in 1996.
- Wide-area wireless network access first implemented in 2000 and now providing 100% campus wide coverage.
- The first eclassroom completed in 2000 to our current 230 e-classrooms and e-labs all designed to a College standard.
- The introduction of the first student laptop computing program in 2000, which has grown to 9 programs and 700 students in 2008.
- VoIP telephony first implemented in 2000, and extended to all classrooms in 2007.
- Campus-wide standardized adoption of the course management system Blackboard™ in 2001.

- The development of the first online general education electives in 2001 to our current offering of 32 course online electives reaching 3000 students per semester.
- Hybrid course development beginning in 2002, which has evolved to over 550 courses and course section per semester.
- The introduction of faculty laptop computers in 2001 (originally assigned to faculty in mobile computing programs or involved in the development of online/hybrid courses), to the practice of equipping all full-time and part-time faculty members with mobile computing devices as required for program delivery.
- The sophisticated electronic medical mannequins and the construction of the Health Centre simulation lab in 2005.
- The Introduction of “The SAM, Assessment and Training for Microsoft Office program” to over 1,500 students in the School of Business beginning in 2004.

These and many more examples of past accomplishments show that the College has been a leader amongst educational institutions in the innovative use of technologies both at the program-level and in the wider context of student learning.

In September 2008, Algonquin College submitted the Algonquin College Virtual Campus (ACVC) capital request to the Ministry of Training, Colleges and Universities and in this submission the College clearly outlined that the ACVC would promote student success, increase enrolment capacity, address access issues and enable employed individuals to remain productive members of the Ontario economy while at the same time acquiring new knowledge and skills.

Considerations at a Glance

- MTCU position (or lack thereof) on the future of Post-Secondary Education.
- Recent long-term capital infrastructure plan submission to MTCU.
- The evolving profile and technological sophistication of incoming students.
- Changing demographics.
- College’s commitment to employee development.
- Impact of doing nothing.

OPPORTUNITIES

Through a commitment to providing resources and funding, the College has the opportunity to focus in on the use of innovative program-level technologies to better prepare our students for their chosen careers. The College also has the opportunity to provide all our students with a rich and engaging technology enhanced learning experience that will provide flexibility, credit recovery options, more specialized labs, and help address our enrolment capacity issues.

Through a review and updating of all current online and hybrid courses, the College has the opportunity to address issues of student dissatisfaction with online and hybrid courses that are not engaging, or that offer no value beyond the standard face-to-face instructional mode.

The College really does not have the option of ignoring the advancements made possible by technology, or the student expectations for the use of technology in their education.

RECOMMENDATIONS

1. The Academic area will establish a Technology Innovation Fund to be administered through the College Technologies Committee or some other centralized body. This approach will ensure that duplication of initiatives is avoided (thereby maximizing the funding opportunities) and that those charged with eventually supporting these new technologies are able to plan accordingly. This Technology Innovation fund would be the appropriate vehicle through which, for instance, faculty could explore the possibilities and potential benefits of simulation and virtualization technologies and their applicability in an applied learning environment. This will be a closed-loop process that will provide accountability by including a mechanism for sharing lessons learned, a measure of the return on investment via the impact on student success, and a mechanism for disseminating best practices to other parts of Area 5.
 - a. Individual faculty members will, via a bi-annual application process, be able to request funding that will allow for the investigation or deployment of new technologies (for classroom, lab, online or virtual delivery modalities) that will enhance the learning environment and promote student success.
 - b. College Chairs will be invited to submit program-level technology enhancement or equipment requests. The requests must demonstrate how new technologies, applications and simulations will enhance learning and promote student success.

2. The Academic area will take into account universal ownership of computing and communication equipment and student expectations on the use of technology.
 - a. All students in all programs will be encouraged to purchase or lease the appropriate level of mobile technology to enable them to access online learning materials while either at the College or at home. College financial assistance mechanisms will be reviewed to ensure that student access to mobile technology (from an affordability point of view) is not an obstacle to student success.
 - b. The College will assume all students have mobile access by the end of the current strategic plan.
 - c. The College will ensure that new or renovated physical learning and study spaces take into account the requirements of mobile learners and program-level technology requirements.
 - d. The College will incorporate the information technology tools most appropriate and relevant to mobile learners (collaborative software tools, web 2.0 tools, wikis, etc) in the learning and student services environment.

- 3) Each Faculty or School will demonstrate, on an annual basis, the amount of fully online and hybrid activity as a percentage of total program hours with the ultimate goal of providing 20% of all program hours offered in an online format.
 - a. All existing online General Education courses and hybrid courses in each program area will undergo a full review to establish the quality and nature of learning activities that form the out-of-class activity. A template will be provided for this review. Such a review would occur on a periodic basis to ensure continuous improvement of these offerings.
 - i. Each program area will undertake to update or redevelop current offered hybrid courses to ensure online component relates to established course learning outcomes, stresses student engagement and motivational activities such as, online collaboration, self-paced learning activities, case-based learning, and problem-based learning.
 - b. Similarly, new courses being proposed for hybrid development will be required to demonstrate how the online component relates to established course learning outcomes, stresses student engagement and motivational activities such as, online collaboration, self-paced learning activities, case-based learning, and problem-based learning. A template will be provided for this review.
 - c. Departments seeking exception to the 20% target for any of their programs of study will present a rationale document to the VPA.
 - d. Departments will be required to meet with curriculum development faculty in the Centre for Organizational Learning to assess current and future hybrid activity levels.

- 4) Faculty assigned to significantly redevelop an existing hybrid course, or to develop a new hybrid course will be provided the required release time to develop the course and to obtain pedagogical and technical assistance in the design of online activities that stress student engagement.
 - a. The College will commit to hire three additional online curriculum development experts.
 - b. The Academic area will shift resource allocations and spending to ensure that up to 100 faculty members per year are provided appropriate release to undertake such activities each year for the next 5 years.
 - c. Released faculty will be assigned to work under the guidance of an online curriculum development expert in Learning and Teaching Services (LTS). This working arrangement may occur in a number of ways including doing some development work in the May – June period, in August prior to start of the Fall term, doing some consultation with LTS online or via face-to-face meetings; and
 - d. Part-time faculty will be mentored and provided PD opportunities in the use of online teaching tools, allowing the College to ensure consistency in its academic delivery, irrespective of the employment status (full-time versus part-time) of the faculty member.
- 5) Each department will establish a PD plan for each faculty member that takes into account elements of the “professor of the 21st Century”, and in particular those related to effective use of educational technologies. The Academic area will establish a fund to assist with the execution of these PD plans.
 - a. Modeling the successful TALL (Teaching Adult Lifelong Learners) program LTS will develop a series of one-semester courses dealing with subjects such as Educational Best Practices related to the use of educational technologies in the learning environment and Student Success. All Algonquin College full-time and part-time faculty members will be required to participate in this course, as well as subsequent refreshers (every 3 – 4 years) meant to reflect the evolving nature of educational technologies. The course would have built-in modularity and flexibility (e.g. different entry points) to address the varying degree of educational technologies knowledge sophistication of faculty.
- 6) Virtual College – to be inserted here.