Senate Academic Planning Task Force: Report April 2013

Executive Summary and Key Recommendations **4**
Executive Summary 4
Key Recommendations 5
List of Appendices **6**
List of Abbreviations **6**
Scope of the 2012-13 SAPTF Report **7**
Background on Online Learning 7
Insights from the Academic Planning Process 8
Priorities and Strategies in the 2012 Senate Academic Planning Task Force (SAPTF) Process 10
Part I. The Pedagogy of Online Learning **12**
Overview on the Pedagogy of Online Learning 12
Learning Modes at Queen's 12
The importance of distinguishing between the pedagogy and the medium 13
Should the traditional lecture-based course be the gold standard? 15
The importance of active learning 17
How do online technologies promote effective teaching and learning at Queen's? 18
Active learning approaches need not use online technologies 18
Many online technologies facilitate active learning 18
Many online technologies improve accessibility for all including students with disabilities. 19
Can online learning generate opportunities to improve writing skills? 20
Risks and benefits of online learning 21
What are the benefits of online learning for students? 21
What are the risks of online learning for students? 23
What are the benefits of online learning for faculty? 25
What are the risks of online learning for faculty? 26
What are the benefits of online learning for institutions? 28
What are the risks of online learning for institutions? 29
Lessons from Queen's Courses with Online Components 30
Faculty of Arts and Science 30
Faculty of Engineering and Applied Science: 35
Faculty of Health Sciences 35
Faculty of Education 36
Conclusions on the Pedagogy of Online Learning 37
SAPTF Recommendations and Conclusions in Relation to Pedagogy of Online Learning 38
1. Queen's should promote active learning approaches because they are generally more successful in engaging students in the learning process than are passive approaches. 38
2. There are benefits and risks to using online technologies in teaching and learning, and the relative balance depends on how the technology is employed and supported. 38
3. Queen's should do a better job identifying and recognizing faculty and staff who are innovators in teaching and promote synergies between them. 38
Part II. Overview of Online Learning Opportunities at Queen's **39**
Background on Online Learning at Queen's 39

Adopting Online Resources by Traditional Courses at Queen's 39
Promoting Online Technologies in Traditional Courses 39
Blended Courses 41
The Blended Learning Initiative (BLI) 43
Outcomes, successes, and failures 44
Fully Online Courses at Queen's 46
Table 1: Online Courses at Queen's: Faculty of Arts and Sciences 47
Recommendations and Conclusions on Online Learning at Queen's 49
4. Senate should facilitate efforts to utilize online technologies that promote active learning. 49
5. Senate should encourage the academic and nonacademic units to invest more thoughtfully in promotion of evidence-based teaching practices. 49
Part III. Technology and Support 50
Overview on the Role of Learning Management Systems in Online Learning 50
Overview of the Learning Management Systems used on Campus 50
Support for Course Development 52
What Can Queen's Do To Better Assist Instructors In Using Online Learning? 53
On the Role of the Centre for Teaching and Learning 54
Discussions with ITS 55
SAPTF Recommendations on Technology and Support 57
6. Queen's should explore ways in which the various pedagogical and technical support units can reorganize to support online learning more effectively. 57
7. Queen`s should establish mechanisms to enable synergistic interactions between faculty and staff who have gained expertise in online learning. 57
8. Queen's should place a high priority on improving support at all levels (financial, technical, pedagogical, accessibility, accommodation) to make the most of use of online teaching tools. 57
9. Queen's should ensure that the online learning environment is inclusive and fully accessible for students with disabilities. 58
Part IV: Quality Assurance in Online Teaching 59
Questions about evaluation of quality in online courses 59
Evaluating the Effectiveness of Online Learning at Queen's 59
Quality Control in Queen's Courses 61
Directed Survey 62
Development of courses with online teaching elements 62
Delivery of courses and ongoing quality assurance 64
Suggestions and considerations 65
Faculty Survey 66
Comments on the review practices for courses in relation to online learning 66
Recommendations for Quality Assurance Processes in Relation to Online Learning 68
The changing landscape of quality assurance processes 68
Exploring quality assurance in online teaching 69
SAPTF Recommendations and Conclusions on Quality Assurance in Courses 72
10 Courses adopting online technologies for delivery of content or facilitating particular styles of learning are unlikely to be demonstrably inferior to traditional alternatives. 72
11. Curriculum Committees should be staffed adequately to assure that changes in the mode of teaching meet teaching and learning criteria. 72
12. The Registrar should support the acquisition of comparative metrics to enable departments to identify potential problems in relation to student grades in online, blended and traditional face-to-face course variants. 72

13. Queen's should encourage the incorporation of evidence-based practices in developing courses, and using such changes to contribute to pedagogical research. 73
Part V. Long Term Planning for Online Learning at Queen's 74
Scope 74
Input from Stakeholders 74
Undergraduates (AMS) 74
March 2013 AMS Town Hall on Online Learning 75
Further Consultations with Student groups 77
QUFA 79
Departments 80
Continuing and Distance Studies in the Faculty of Arts and Sciences 82
Outstanding questions in relation to CDS 84
University and Senate 85
Outside the University 86
SAPTF Recommendations and Conclusions for Long Term Policies Related to Online Learning 89
14. Senate should elaborate on the relationship between academic freedom and teaching practices. 89
15. Senate should require Schools/Faculties to articulate standards in terms of design, delivery and support for online courses and work in partnership with their departments/areas to ensure that these are met. .89
16. FAS Department Heads need to take a more active role in ensuring that courses offered through CDS meet departmental requirements. 89
17. FAS departments should consider bringing their online courses into formal teaching assignments, to better ensure that the courses integrate with course and program expectations. 90
18. Queen's should not become involved in MOOCs until and unless there is greater support for online learning 90
19. Queen's should remain involved in discussions exploring the creation of the Ontario Online Institute. 90
Key References 91

Executive Summary and Key Recommendations

Executive Summary

The 2012-13 Senate Academic Planning Taskforce was asked to explore "virtualization and online learning" at Queen's. In the early days, we became familiar with the history of the discussions and identified a number of controversies that had made it difficult to reach a consensus on the role of online learning at Queen's. As new and familiar themes emerged, we realized that the issue of online learning is far more complex than it had seemed, reaching into areas such as course quality, curriculum planning, staffing, resource allocation, unit autonomy, and academic freedom. We hope that the report provided will address many of the issues about online learning that have been raised within the community. Recognizing that some of our recommendations will fall short of unanimous agreement from the community, we hope that the report will be received as balanced and progressive.

The question that permeates the discussions to date has been whether online learning is demonstrably better than traditional approaches. Our assessment of the pedagogical literature is that online approaches are at least as good as traditional approaches. The teaching technologies employed are less important than the fundamentals of course design. As with any academic program, it is in everyone's best interest to ensure that courses are as effective as possible. We would like to see the passion associated with the debate about online learning move away from the technology and move toward promoting evidence-based practices to improving course quality throughout the university.

Online teaching is used most effectively when faculty create courses that build on the strengths of the technology and minimize the risks associated with working in the online environment. Central to the success of online learning is adequate support for course design and the technology. Many of the lingering concerns about online learning are related to the impression that it is an effort to create courses that are less expensive to offer. It seems clear to all parties that effective online learning requires intensive support. If incorporated into traditional courses, it should be done on the pedagogical merits, not perceived financial benefits. If Queen's is committed to developing online learning, there needs to be a substantial investment in support, and a rethinking of the way in which the various academic and support units interact.

Key Recommendations

1. Queen's should promote active learning approaches because they are generally more successful in engaging students in the learning process than are passive approaches. 38

2. There are benefits and risks to using online technologies in teaching and learning, and the relative balance depends on how the technology is employed and supported. 38

3. Queen's should do a better job identifying and recognizing faculty and staff who are innovators in teaching and promote synergies between them. 38

4. Senate should facilitate efforts to utilize online technologies that promote active learning. 49

5. Senate should encourage the academic and nonacademic units to invest more thoughtfully in promotion of evidence-based teaching practices. 49

6. Queen's should explore ways in which the various pedagogical and technical support units can reorganize to support online learning more effectively. 57

7. Queen`s should establish mechanisms to enable synergistic interactions between faculty and staff who have gained expertise in online learning. 57

8. Queen's should place a high priority on improving support at all levels (financial, technical, pedagogical, accessibility, accommodation) to make the most of use of online teaching tools. 57

9. Queen's should ensure that the online learning environment is inclusive and fully accessible for students with disabilities. 58

10 Courses adopting online technologies for delivery of content or facilitating particular styles of learning are unlikely to be demonstrably inferior to traditional alternatives. 72

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13. Queen's should encourage the incorporation of evidence-based practices in developing courses, and using such changes to contribute to pedagogical research. 73

14. Senate should elaborate on the relationship between academic freedom and teaching practices. 89

15. Senate should require Schools/Faculties to articulate standards in terms of design, delivery and support for online courses and work in partnership with their departments/areas to ensure that these are met. 89

16. FAS Department Heads need to take a more active role in ensuring that courses offered through CDS meet departmental requirements. 89

17. FAS departments should consider bringing their online courses into formal teaching assignments, to better ensure that the courses integrate with course and program expectations. 90

18. Queen's should not become involved in MOOCs until and unless there is greater support for online learning 90

19. Queen's should remain involved in discussions exploring the creation of the Ontario Online Institute. 90

List of Appendices

1. Jones Document on Virtualization

2. Small Inventory on Queen's Online Initiatives that can be found on Queen's websites (compiled by the CIO's Office)

3. Blended Learning Initiative Support and Process

4. Summary of SAPTF Surveys on Technology and Support

5. Quality Assurance for Online Courses offered through Continuing and Distance Studies

6. Summary of SAPTF Survey on Quality Assurance

List of Abbreviations

BLI: Blended Learning Initiative
CDS: Continuing and Distance Studies
CTL; Centre for Teaching and Learning
D2L; Desire to Learn
FAS; Faculty of Arts and Sciences
ITS, Information Technology Services
MOOC; Massive Open Online Course
Moodle; Modular Object-Oriented Dynamic Learning Environment
MTCU; Ministry of Training Colleges and Universities
OOI; Ontario Online Institute
QUQAP; Queen's University Quality Assurance Processes

Scope of the 2012-13 SAPTF Report

Background on Online Learning

The Academic Planning Task Force was struck by Queen's Senate in November 2010 with a mandate to consult widely and draft the University's Academic Plan, approved by Senate on November 22, 2011.

In the last of the Plan's guiding principles (#14), the authors state: *Planning cannot be a one-time event. The University must continuously adapt to changing circumstances. We view the creation of this Academic Plan as one phase in an on-going cycle.* As part of this ongoing process, the 2012-13 Academic Planning Task Force was struck by Senate with the following membership:

- Eril Berkok (Student representative) B.Comp '13
- Terry Bridges (Graduate student representative) PhD '13
- Jill Atkinson (Faculty representative) Department of Psychology, Faculty of Arts and Sciences
- Lindsay Davidson (Faculty representative) Department of Surgery, Faculty of Health Sciences
- Chris Moyes (Faculty representative) Department of Biology, Faculty of Arts and Sciences
- Mark Swartz (Staff representative) Library
- Steve Elliott (Dean representative) Faculty of Education

Chair: Chris Moyes
Secretary: Gail MacAllister

The mandate we were given was as follows:

> *The Task Force, using the consultation process established by the 2010-2011 APTF (including but not limited to sponsoring a series of widely accessible town-hall meetings to address specific key issues, and the use of an interactive website) shall consider, as recommended by the 2010-2011 Academic Planning Task Force, the issues of*:
>
> - *virtualization and online learning, and*
> - *faculty renewal as a starting point.*
>
> *The Academic Planning Task Force shall submit its Report, including recommendations and observations concerning the implementation of previous recommendations, to Senate for approval before the May meeting of the Senate.*
>
> *In order to ensure that the continuous cycle of Planning, Implementation, and Monitoring of the Academic Plan endorsed by Senate, the APTF shall also recommend a new planning issue or set of issues to be investigated by the task force of the subsequent year.*

The following document is a DRAFT of our Senate Academic Planning Task Force (SAPTF) report in relation to the first priority of our mandate*:* virtualization and online learning.

Insights from the Academic Planning Process

The final version of the Academic Plan is currently posted on the Secretariat's website[1]. Throughout the 2010-11 planning process, drafts of the Plan were posted for comments[2]. Virtualization was one of the dominant themes in the commentary. There was an extensive dialogue about the strengths and weaknesses of online learning and much discussion about Queen's policies, including an analysis of online learning[3], which we include in this report as **Appendix 1** with permission of the author.

The intensity of the discussion led the 2011 APTF to remove references of virtualization from the Academic Plan but it is worth examining the relevant sections that appeared in a earlier draft of their Plan. From *Pillar I. The Student Learning Experience*, we provide the following excerpt:

> *10. Virtualization and online learning.*
>
> *In many of the background documents, particularly in Where Next? and Imagining the Future, and in the response of departments, units and individuals to these documents, there has been considerable discussion of virtual learning. For us, "virtual learning" refers to any mode of learning in which technology is used to provide an intermediate learning aid between teacher (or course designer) and student. The rapid evolution of technology over the past years has made available, forms of communication which, if used wisely, can most certainly enhance learning. We know of no university that is not seriously investigating ways to capitalize on these developments.*
>
> *Technology can interact with learning in many ways. We focus on blended learning and distance learning as they seem particularly relevant to Queen's at this time.*
>
> *Blended learning refers to the use of technology to bring learning modules into the rooms or onto the desks of individual students who are studying in a traditional on-campus environment. The word "blended" indicates that this is a hybrid model, in which a component of the work traditionally done in the classroom can be presented online giving students control of timing and pacing. Lecture capture, for example, can be used to provide a video recording of a lecture to students who missed the lecture or who want to review it. More simply, short videos can be posted demonstrating technical routines or simple examples, or discussing conceptual highlights. We recommend this type of blended learning, as it facilitates the task-centred curriculum design. Students can access the information at the moment it is needed in their investigations while the instructor is free to spend more individual time with different students. An additional benefit would thus be the small-group learning experience.*

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[1] http://www.queensu.ca/saptf/wp-content/uploads/2011/10/Academic-Plan-for-SenatefinalNov221.pdf
[2] http://www.queensu.ca/saptf/wp-content/uploads/2012/09/Comments-received-2010-2011.pdf
[3] http://senatefacultycaucus.files.wordpress.com/2011/07/on-virtualization-and-differentiation-of-ontario-universities.pdf

In addition to text material, online enhancements can provide all sorts of "toys"— video demonstrations which bring the material to life. In this way, blended learning can be an effective way of enhancing the engagement of the current generation of visual learners. Having said that, we must continue to develop critical reading skills as they foster critical thinking and effective writing.

Distance learning refers to the delivery of the complete learning experience to students who are unable to attend classes on campus. Queen's has offered distance courses for many years and indeed is a Canadian pioneer in this enterprise. The recent developments in technology have brought lectures, discussions, and demonstrations into the lives of our students in ways that are more engaging and lively than ever before.

Whether or not Queen's should invest resources to expand its distance education is a matter of current debate. Some say that this is a good investment with a long-term payoff both in terms of reputation, new networks, and additional revenues (which could be invested in on-campus programs). Others warn that the costs are greater than might at first be supposed. These are complex issues and caution is needed. However, there is no doubt there will be special projects for which we will want a version of the Queen's experience to be available at a distant location.

The draft of the report also included two goals in relation to online learning, listed below.

20. Blended learning. Queen's should continue to explore the ways in which blended learning technologies with their potential for increasing flexibility in learning and enhancing student engagement can be used to enrich the student experience.

21. Distance learning. Queen's is a Canadian pioneer in distance learning and it should continue to use recent developments in technology to bring the classroom experience in a lively and engaging manner into the lives of distant students. Caution is needed, however, as to what extent and in what direction its investment in distance learning

From the outset of our work on the 2012-13 report, a few aspects of this draft report stood out.

- The use of the term "virtual" in the context of learning is ill-advised. If "virtual reality" is "not quite reality", then what is the literal interpretation of "virtual learning"? Throughout this document, we refer to "online learning".
- Identification of specific online learning activities unnecessarily constrains the impression of the range of online activities currently used on campus.
- There seems to be recognition that the financial case for greater investment in online learning is dubious. Thus, any policies should be based on quality of teaching and learning activities, rather than financial benefits.
- Distance learning as a synonym for fully online courses is confusing. In some Faculties and Schools, most of the students taking online courses are residential students.

Priorities and Strategies in the 2012 Senate Academic Planning Task Force (SAPTF) Process

Against this background, we re-entered the fray of discussion on the role of "virtualization" at Queen's. Our review of the comments suggested that the main concerns were:

- whether academic quality is well served by efforts to facilitate online learning
- whether the initiatives promoting online learning are driven by financial priorities, at the expense of academic outcomes
- whether the institution is supporting online learning with a sufficient commitment to ensure that academic quality is not limited by resources

Even among the most strident antagonists, there is an acknowledgment that online teaching approaches have the potential to facilitate student learning. Furthermore, we could envision no scenario where a modern university would divorce itself from online technologies. In tackling this project, the SAPTF assumed that online learning technologies were here to stay. We envisioned our role to be in providing a balanced review of their place at Queen's now, and provide recommendations for policies and practices that would ensure that what we do, we do well.

The discussion of online learning has occupied many hours in Senate and various committees throughout the University. Our view is that the attention is unduly focused on the technology when it should be focused on the student experience. We frequently encountered a suspicion that the push for more online learning was driven by financial motives. We do not deny that broader adoption of online learning has financial ramifications, but we decided early in this process that we would not address these financial issues directly. We recognize that the University administration has an obligation to ensure that revenue goals are met, but feel that the Senate should be focused on ensuring that academic priorities are well served by any practices adopted or promoted by the administration. However, if online learning is applied in ways that are better in achieving student learning, then it should be embraced for that reason alone and the motives of different stakeholders become moot.

Our main priority was to use this process to promote Queen's online policies and practices that facilitate student learning. We subdivided our "virtualization and online learning" mandate into three themes: (i) technology and support, (ii) quality assurance practices, and (iii) long-term institutional policies. In each theme we began by reviewing the commentary from the 2010-2011 academic planning exercise, and then collected information on existing knowledge and practices in the various units at Queen's. Because of the rich history of debate on "virtualization and online learning", we began the process with an understanding of the major issues. We created surveys to fill in the gaps in our knowledge about the Queen's perspectives. We targeted the surveys to individuals and groups with interest and expertise in the area, and had interviews with individuals and small groups. We anticipated that in compiling the information from various sources, we would be able to identify the strengths and weakness of the current situation, from which progressive policy recommendations would emerge.

Our report is organized into five sections, each focusing on a more specific aspect of online learning.

- **Part I** of this report is a brief overview of the nature of online learning approaches currently used at Queen's, and a summary of the reasons why online teaching issues have moved to the forefront in recent years.
- **Part II** explores the current state of online learning activities at Queen's in the major units. The Faulty of Arts and Sciences is the largest of the units, but each Faculty/ School has a unique history and set of experiences with online learning.
- **Part III** compares how different units deal with the challenges of online technology and support in relation to teaching.
- **Part IV** explores the issues associated with ensuring quality control in blended and online courses, comparing the procedures used for assessing traditional courses.
- **Part V** considers the current policies of the various stakeholders, and offers recommendations that should be taken into consideration when developing long-term policies in the different units and the University as a whole.

Part I. The Pedagogy of Online Learning

Overview on the Pedagogy of Online Learning

As the activities of the SAPTF progressed, it became clear that there are many deep divisions on the issue of online learning and its application at Queen's. In this section, we survey the most recent studies on the merits of online teaching and learning. We believe that any recommendations must be rooted in robust, peer-reviewed pedagogical research, and any policies recommended must be evidence based. Within Queen's there will undoubtedly be individuals, groups, or disciplines that disagree with the conclusions, but we would encourage a dialogue that is evidence-based using pedagogical research rather than general impressions and anecdotes.

Learning Modes at Queen's

Considerable debate has arisen in our discussions about the terminology used to define different class types. The following terminology is currently used by the Faculty of Arts and Sciences[4] to describe courses in relation to their use of online teaching.

- In a **Traditional Class** students attend all class sessions in an assigned face-to-face environment
- In a **Technology-enhanced Class** students attend all class sessions in an assigned face-to-face environment. Technology is primarily used as a supplement to engage the students with the curriculum and learning process
- In a **Blended Class,** students attend some of the class sessions in an assigned face-to-face environment, and complete other class learning in an online environment. Technology is used in a complementary way to create a substitute for some of the classroom learning experiences.
- In a **Flexible Class** students can choose to attend class sessions in two ways: in an assigned face-to-face environment **or** in an online environment. Technology is primarily used (*sic*) to provide the students with flexibility in their choice of educational experience.
- In an **Online** (Distance) **Class** students attend all class sessions in an online environment. Technology is primarily used (*sic*) to create a substitute for an entire course learning experience.

In developing our report, we found a weakness in the definitions of the various types of classes, and modified them to more accurately reflect the continuum of teaching and learning modes. These definitions look beyond the 3 hour ”class" to the sum of what students are expected to do in each "course". We provide these modified descriptions to better reflect how students learn, when and where the different components take place. The argument is that we should consider the whole enterprise and not just the transmission of material.

- In a **Traditional Course** students attend class sessions in an assigned face-to-face environment and complete reading, practice and review in unstructured private time outside class. Such a course may use online technologies for simple support purposes, such as email exchanges with students, student

[4] http://www.queensu.ca/artsci/academics/teaching-and-learning/delivery-methods

notifications, and posting of course notes. Technology may also be used as a supplement to engage the students with the curriculum and learning process (optional discussion boards, electronic repository of readings, lecture slides, etc.).

- In a **Blended Course,** both in-class and online resources are used to transmit information, promote application and practice, and obtain feedback.
- In a **Flexible Course,** students can choose to learn in one of two ways: in an assigned face-to-face environment **or** in an online environment. Technology is primarily used to provide the students with flexibility in their choice of educational experience.[5]
- In an **Online Course,** online technology is used to deliver all course material, learning activities and feedback. The nature of this type of course permits students to take classes while in residence or as distance learners, but there is no face-to-face experience.

In addition, this report uses the term **Face-to-Face Course**, which can be any of the first three options, excluding only Online Courses. In using these terms, we see that online technologies can play important roles in each type of course. Resist the urge to equate *online learning* with an **Online Course**, where all of the interactions between professor and student are mediated via online technologies.

The importance of distinguishing between the pedagogy and the medium

The widespread use and misuse of the term *virtualization* invites criticisms and tangential arguments that detract from the far more important message about the **quality of courses**. There is likely little opposition to pedagogical approaches that more effectively engage students and promote learning. In a comprehensive review of engineering courses, Prince (2004) concludes that active, collaborative, cooperative and problem-based learning can each contribute to the effectiveness of learning, though there are many examples of situations where particular practices are less effective[6]. The importance of student engagement is reflected in the principles of effective teaching, as articulated by Chickering and Gamson (1987):

1. Encourages contacts between students and faculty.
2. Develops reciprocity and cooperation among students (learning communities).
3. Uses active learning techniques.
4. Gives prompt feedback.
5. Emphasizes time on task.
6. Communicates high expectations.
7. Respects diverse talents and ways of learning.

[5] FILM 240 is the only example of a Flexible Course. There are 700 face-to-face seats and 700 online slots. Both sections run simultaneously in the Fall with a single instructor; students register in one of the two sections.

[6] In a recent study, Andrews *et al.* (2011) found no association between students' learning gains and the use of active learning instruction in a large random sample of college biology courses. They conclude that college science teachers are incorporating active learning methods, but are doing so ineffectively. They point to evidence that "…somewhere in the communication between science education researchers and typical college science instructors, elements of evidence-based methods and curricula crucial to student learning are lost" (p.403).

These principles can be realized in face-to-face or online environments; however, there is little evidence to suggest that in lectures where students passively listen to an expert speaker and have little opportunity to interact with one another, are as effective as they may be thought to be (Crouch *et al.*, 2004; Matheson 2008; Cardall *et al.* 2010; Smith & Cardaciotto 2011; Deslauriers *et al.*, 2011). While much of the research included in this report emanates from the science disciplines, an understanding of how individuals learn sheds light on why traditional lecturing, regardless of the discipline, is unlikely to be effective on its own. Without a way of assessing where one's students are at, providing them with an opportunity to discuss and work though concepts, and receive frequent feedback, learning will be compromised in any discipline (Fink, 2003; Ambrose *et al.*, 2010).

Seminars, with their hallmark small size and rich discussion between students and an expert, are ideal places for learning, if students are sufficiently motivated to come prepared and engage with their peers and instructor. For larger classes or less motivated students, a different approach is needed[7]. Online technologies have gained greater prominence at Queen's in recent years, but it is important to acknowledge that these are merely tools- a means to an end. The important question is whether their use and promotion achieves the desired outcome, which in the context of this Senate document, is successful learning.

Online tools offer a great many opportunities for student learning but they are not in and of themselves a magic bullet. A 2010 report from the US Department of Education authored by Means *et al.* (2010) conducted a systematic meta-analysis of pedagogical research on online learning[8]. They reviewed all research studies published between 1996 and 2008 that examined the effectiveness of online learning. Of the 1132 studies assessed, 45 studies were used in the final meta-analysis. These were the studies that employed a **rigorous research design** (random assignment or quasi experimental), **measured student learning objectively** (did not use student or instructor perceptions of student learning or mediators such as student affect or motivation), **tested an online or blended condition against a face-to-face condition**, and provided sufficient data to **compute effect sizes**[9]. In the end, 50 effect sizes, tests of face-to-face versus online or blended conditions, were used in the meta-analysis. We place a great deal of emphasis on this study because of its experimental nature and rigorous statistical approach. The key findings were:

i) Students in online conditions (fully and blended) performed slightly better, on average, than those learning the same material through traditional face-to-face instruction. The average effect size was +0.20 favouring online conditions and was significant at $p<0.001$, meaning that the finding is reliable and would only be expected by chance 1/1000 times.

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[7] see the "wristband study" in which Poh & Picard 2010 captured an MIT student's activity levels across a week of activities such as sleep, studying, laboratory work, and attending lectures. Discussed by Eric Mazur at a recent online learning summit.

[8] http://www2.ed.gov/rschstat/eval/tech/evidence-based-practices/finalreport.pdf

[9] An effect size is the magnitude of the difference between conditions, expressed relative to the standard deviation. To put this in context for an effect size of 0.35: if your class mean was 70% (SD 8%), then a blended variant would have (on average) a class mean 0.35 x 8% higher, or 72.8% in this example.

ii) This effect was driven by the blended conditions in which the advantage over face-to-face was larger (average effect size was +0.35, $p<0.001$). For purely online compared to face-to-face, the effect size was +0.05 and was not significant (could have been due to chance).
iii) Effect sizes were larger for studies in which the online instruction was collaborative (+0.25) or instructor-directed (+0.39) than in those studies where online learners worked independently (+0.05).
iv) The effectiveness of online learning approaches appears quite broad across a wide range of content (academic and professional studies) and learners (undergraduates and graduate students).
v) When the curriculum and instructional strategies were the same across conditions, there was a significantly smaller effect (+0.13) than when these varied between conditions (+0.40) suggesting that the medium is not driving these effects but other variables, such as the content and instructional practice, are responsible.

In this study, they only considered combinations of courses where there were legitimate experimental controls that used empirical measures, rather than faculty or student impressions. They provide conclusions that are central to questions about the effectiveness of online learning.

- They found that online and blended learning was more successful than face-to-face learning using a robust statistical analysis.
- They concluded that blended courses were superior, not because of the technology, but rather the course design. The opportunities for active learning, increased time on task, and frequent feedback, were thought likely to be responsible for the observed benefits, not the online medium per se.
- They also provided evidence that some online activities and design features worked better than others.

In the following sections, we explore the connections between the different pedagogical approaches employed at Queen's, and identify the roles played by online learning technologies.

Should the traditional lecture-based course be the gold standard?

The tenor of discussion about online learning at Queen's has been strongly influenced by broad statements about the relative quality of traditional, blended, and online courses. Our impression was that vocal antagonists of online learning at Queen's were making arguments that online learning was **inferior** to face-to-face learning. In many cases, the position is based upon the individual experiences or perceptions of the faculty member. It would be fair to say that the SAPTF found itself in the position of having to address these positions as part of our exploration of online learning at Queen's. The SAPTF felt that it was important to listen to the diversity of opinion, but that any recommendations for policy would be based on evidence-based arguments. We understand that there is considerable variation in the nature of a "lecture-based" course and it would be a mistake to assess praise or damn the entire category. In this light, our goal is not to promote online learning as a panacea for all lecture-based courses, but rather as an opportunity to improve courses that rely on passive teaching.

We received comments that our draft report reflected our greater familiarity with the sciences (though we note that two of the SAPTF academic members are in the Faculty of Education). Lecturing practices are not homogeneous; they differ widely between individuals, courses, and disciplines. Though we conclude that online technologies present many opportunities to improve learning, there are certainly courses, even lecture-based courses, where they offer little advantage. Many of the current initiatives and policies promoting online learning target large courses that have relied on traditional, "sage-on-the-stage" lecturing. Our impression is that the antagonism to online learning sets up traditional lecture-based courses as the "gold-standard" for comparing different styles of courses; that any deviations from the traditional approach, such as online or blended learning, must demonstrate that the alternative is better than traditional approach at achieving the learning goals. It is perhaps better to make the case that a change, introduced for whatever motivation, ought to be at least as good as the form it replaces.

One area where we see online technologies having the greatest potential for improving learning is in large lecture-oriented classes. In a recent article,[10] Clay Shirky, an Associate Professor at NYU, suggested that the technology that had the greatest impact on education was the microphone. Voice amplification allowed class sizes to grow, which led to increases in lecture hall capacities and institutional enrollments. As a consequence of that technology, the same number of professors could teach a much larger number of students. This had obvious advantages for the administrative priorities, but it was the beginning of a rise in student: faculty ratios. Educators lament the increase in student: faculty ratios, and search for creative mechanisms to overcome the challenges associated with teaching large classes.

In discussions about adopting new online technologies in learning, a recurring criticism is that it is a technology that permits increased enrollment within the existing administrative constraints (faculty number, classroom space). There is an unavoidable dichotomy that arises in policies that intertwine blended learning and enrollment. On one hand, it could be argued that blended learning models facilitate teaching in large-enrolment lecture sections. Conversely, is it a plan to facilitate enlarging enrollments? Our main concern is that any policies that the university promotes should foster academic goals. What is frequently lost in the discussion is the question of whether online learning approaches overcome some of the challenges associated with large class sizes. Many Queen's faculty report concerns about low attendance in classes, particularly in the large first and second year courses. In such cases, the notion of face-to-face learning as the gold-standard seems difficult to justify.

The distinction between active and passive learning: Many factors influence the effectiveness of lecture-based courses. Small courses with rich peer-to-peer and peer-instructor interactions and active learning opportunities may be extraordinary experiences for students and professors. Many other courses could benefit greatly from non-lecture approaches that move away from a lecture-oriented traditional class. Few would question the merits of laboratories, tutorials, and seminars, which are active learning exercises. These provide valuable opportunities for students to interact with each other and with the instructor(s) in small groups. There is a wide range of practices in “traditional” courses designated as “lecture,” and many of them involve significant interaction. In humanities courses, for instance, we are told that it is common for lecture sections to be punctuated with discussion or even

[10] http://www.theawl.com/2013/02/how-to-save-college

broken into discussion groups. Some “lecture” courses function in ways similar to seminars, despite large numbers of students. Likewise, in some small seminars, the instructor will lecture for much of the contact time. In exploring how online technologies are used at Queen's, the most successful approaches are effective at engaging students through active learning.

The gold standard therefore, might be better conceptualized as “active learning” rather than lecturing (Springer *et al.*, 1999). Rather than focus on the medium, the use of technology, or even the contact hours, we can best judge effectiveness by applying what we know about how humans learn complex information. Educational research suggests that, in order to learn, students need the opportunity to get information into their long term memories and continue to modify it as they gain more and more sophisticated understanding (Conway et al. 1992; Kirschner 2002). Students need to be able to ‘hook’ material into their existing frameworks or understanding. Frequent feedback from learner to instructor, via homework assessments or in class polling using response systems, plays an important role in identifying students’ current thinking. With accessible yet challenging material available, students must be motivated to elaborate and practice so that this new information is assimilated into their existing understanding. Their understanding is then modified and made richer, and new connections between ideas formed, thus enabling storage in long term memory with a rich network of retrieval cues. Understanding how instructional strategies and multimedia presentations promote such learning is the focus of instructional design. (Kirschner, 2002; Mayer & Morena, 2003; vanMerrienbooer & Sweller, 2005).

Passive learning, where students are told what they need to know, is not sufficient for conceptual understanding and thus long term retention. While they may be able to memorize large chunks of facts and theories and retrieve them for an exam in the short term, they will not have processed the information at a deep enough level to retain it into the future (Michael 2006; Wirth 2007; Smith & Cardaciotto 2011; Minhas *et al.* 2012). We see well-constructed online learning approaches to be a means to improve student engagement.

The importance of active learning

Perhaps the greatest challenge we face is in teaching the large traditional courses, where face-to-face lecturing remains the norm. As mentioned previously, many of our traditional "lecture" courses have rich opportunities for active learning. Classes as large as 100 students can involve opportunities for discussion and active participation. Traditional courses that are typically passive can be made more effective by enhancing opportunities for active learning. In a study of a large introductory physics course, Deslaurier *et al.* (2011)[11] contrast the experiences of students taught by a highly rated instructor with expertise in physics and an inexperienced instructor using a teaching approach based on research in cognitive psychology and physics education. Students taught by the inexperienced instructor had higher attendance, greater engagement, and more than twice the learning success than those taught by the expert in the field.

[11] It should be noted that this study was a single experiment comparing two sections of one course over one week, and may not be applicable to smaller lecture courses in other disciplines.

Engaging students makes it more likely that they will learn. Research in physics education indicates that few students read their text before coming to class (Cummings *et al.,* 2002; Stelzer, *et al.,* 2008) and therefore have little in the way of a framework in which to incorporate the lecturer's material. They are then usually left on their own to practice and apply the provided material, perhaps using questions from the text, or by rereading and 'studying' on their own. Recognizing the importance of structured practice and time on task, the newer, flipped classroom approaches use face-to-face time for practice and move the transmission of material online. In this way, students can be provided with just-in-time-teaching, or help from a peer, TA or instructor when they need it, to understand a concept that they are struggling with. This just-in-time problem solving support, or scaffolding, capitalizes on students' motivation to understand the problem at hand (Crouch & Mazur, 2001; Stelzer *et al*., 2008; Chen *et al.*, 2010). Online technologies have an important place in teaching because of their ability to incorporate active learning tasks (Schell *et al.*, 2013).

How do online technologies promote effective teaching and learning at Queen's?

Active learning approaches need not use online technologies

Many faculty at Queen's have incorporated active learning approaches because they believe that traditional lectures are less effective at promoting comprehension than more active learning approaches. They came to this conclusion from reviewing pedagogical literature, coupled with consultation with colleagues and developers at the CTL. They have adopted research-based active learning approaches such as Peer Instruction and Team Based Learning, or other forms of small-group, active-learning, such as Community Service, Problem-based and Inquiry-based learning into their courses.

These approaches remain a challenge for a number of reasons, including departmental culture, faculty workload, financial, classroom layout and technical resource limitations. Scaling up active learning to the largest classes requires specific technology and learning analytics, such as regular automated feedback of students' understanding of the course material. The "limiting factor" is often the nature of support: pedagogical, instructional, and technological.

Many online technologies facilitate active learning

A key to active learning is to facilitate activities that allow students the opportunity to build their own schema, test out their understanding via application, and extend or create new knowledge with their peers. Thus, with small classes and committed faculty conversant with pedagogical innovations, it is possible to employ more active learning in traditional courses. However, many of the opportunities for active learning in our largest classes are facilitated by technologies. These allow instructors to present material to students at different levels, allow students to assimilate the material at their own pace and, because they free up valuable contact hours for small-group activities, they provide the opportunity for students to apply what they have learned, discuss it with their peers and instructor, and construct a more sophisticated understanding.

The increased use of online materials has resulted in a focus among cognitive psychologists on how best to design multimedia modules that do not tax our capacity to process information but instead free up cognitive resources that can be devoted to learning (Mayer & Moreno, 2003; vanMerrienboer & Sweller, 2005; Levinson *et al.*, 2007). If Queen's wishes to design high-quality online tools in blended or online courses, then attention to proper media design is crucial.

Chickering and Gamson's *Seven Principles for Good Practice in Undergraduate Teaching* have been used to encourage the development of effective teaching, and have been applied specifically to online learning. Graham *et al.* (2001)[12] offer the following simple suggestions for applying these principles in online courses. (Visit the article for a more detailed treatment of each principle)

1. ***Good Practice Encourages Student-Faculty Contact:*** *Instructors should provide clear guidelines for interaction with students.*
2. ***Good Practice Encourages Cooperation Among Students:*** *Well designed discussion assignments facilitate meaningful cooperation among students.*
3. ***Good Practice Encourages Active Learning****: Students should present course projects.*
4. ***Good Practice Gives Prompt Feedback:*** *Instructors need to provide two types of feedback: information feedback and acknowledgment feedback.*
5. ***Good Practice Emphasizes Time on Task****: Online courses need deadlines.*
6. ***Good Practice Communicates High Expectations:*** *Challenging tasks, sample cases, and praise for quality work communicate high expectations.*
7. ***Good Practice Respects Diverse Talents and Ways of Learning:*** *Allowing students to choose project topics incorporates diverse views into online courses.*

As the collective experience at Queen's grows, there will be growth in the number of faculty with experience using online tools. Queen's should make every effort to ensure that the expertise of individuals can be used synergistically to create a critical mass of faculty, reducing the likelihood that inexperienced faculty are dissuaded from adopting of online resources to pursue their teaching goals.

Many online technologies improve accessibility for all including students with disabilities.

Technological advances have created unprecedented opportunities to offer education at a distance to a diverse student population with limited access to education, including students with disabilities (Anderson, 2008; Moisey, 2004). A study by Fichten *et al.* (2003) indicated that Canadian universities had 2% and distance education had 3% of students with disabilities in their overall population. Using Universal Design for Learning (UDL) in the online environment enables educators to meet the diverse learning needs of diverse student population.

When UDL principles are incorporated into a course during its design and development, they lay the foundation with learning outcomes, activities, assessments, and teaching methods that improve accessibility for all learners (Rose & Meyer, 2002). A course designed using UDL principles is more

[12] http://www.technologysource.org/article/seven_principles_of_effective_teaching/

flexible and student-centred, enabling the students to make choices or be more involved in the learning process by providing multiple ways to access content and express their learning. When principles of universal design are applied to the learning environment, it improves opportunities for learning for all students.

Not only does UDL support the Ontario government's mandate under the Accessibility for Ontarians with Disabilities Act legislation, it also supports the strategic direction of the University for more learner-centric, inclusive, enriching and innovative learning environments.

Can online learning generate opportunities to improve writing skills?

Our current Academic Plan advocates improving writing skills throughout the curriculum. It has been noted that one concern of faculty is that reliance on online technologies will diminish opportunities for gaining writing skills. There is also concern that increased enrollments and increased student: faculty ratios have the potential to exacerbate challenges associated with those activities that demand the most faculty time.

At first blush, online learning would seem to present an obstacle to certain types of skill development such as such as laboratory work. Indeed, it can be a challenge to translate what goes on in the classroom into online learning activities and, in some cases, it may not be possible. However when it comes to writing, which often takes place outside the classroom in any case, automated programs have been developed to aid in promoting writing and critical thinking in large classes where marking papers would not be possible for a single instructor or team of TAs. Two different approaches are peer assessment and latent semantic analysis, and we are aware of evidence that use of the former has been found to improve student's critical thinking and writing (Luxton-Reilly 2009).

While peer assessment has historically been done via exchange of hard copies of writing and evaluation in small classes, new online tools enable peer assessment to be used in large classes. The benefits of using an online program to manage the peer assessment of writing is self-evident, including the automation of many of the administrative logistics such as the submission of essays, anonymising and random distribution of essays, making feedback available and calculation of marks, but what is less obvious perhaps, are the benefits to student learning. These programs (including a Workshop tool in Moodle) are designed to scaffold inexperienced students when assessing their peers' work. In their paper on the differences between face-to-face peer learning and online activities, Mostert & Snowball (2010) report that online peer assessment supports the development of student writing. It does so by providing a structure for iterative revisions of student writing in response to feedback. Peer Scholar, developed at the University of Toronto by cognitive psychologist Steve Joordens and his grad student Dwayne Pare, supports the development of critical thought and communication (Joordens *et al.* 2009). Once thought impossible to carry out in classes of over one hundred, these online tools allow us to add writing and critical thinking, to the curriculum in large first year classes.

Risks and benefits of online learning

A well-designed course can draw upon a variety of methods to deliver content, provide opportunities for students to apply and extend their understanding, to interact with one another and the instructor, and to receive timely feedback and check their understanding. However, the methods we choose to help students meet our learning goals depends on a variety of factors - our experience and comfort, our beliefs about what works, our comfort with and the availability of technology, support for technology, and classroom space and design. Without diminishing the efforts of those successfully employing low-tech approaches, the reality is that there is a great diversity in online technologies designed to improve the effectiveness of teaching and learning. If we are to further develop this area, most would agree that we should endeavour to do it well.

The following sections draw upon information contributed by various advocates and antagonists of online learning, augmented by information collected through the SAPTF surveys. Our goal was not to conduct a comprehensive literature review of the area, but rather identify issues that are commonly raised in relation to risks and benefits. CTL has provided the SAPTF with a number of references from the peer-reviewed literature for readers who may want to learn more about the research in this area[13]. The nature of the collective experience with different teaching and learning modes is such that there is rarely consensus on specific costs and benefits. Some positions are based on individual experiences, which may or may not be accurate, and may or may not apply more generally to other courses, even within disciplines. We do not intend to debate the merits or validity of any particular point provided below and note that some may be realistic but not applicable to Queen's.

What are the benefits of online learning for students?

Advocates of online learning identify a number of advantages that are presumed to culminate in successful student learning, either through better pedagogy or by conferring flexibility that allows students to reach their potential (Bernard *et al.* 2009; Cook *et al.* 2010). Below we provide a list of possible benefits of online learning from the online advocacy group World Wide Learn[14]. We recognize that this is an advocacy group but the list is a starting point for discussions of the potential benefits of online teaching.

1. *Students can "attend" a course at anytime, from anywhere. This means that parents can attend to their children, then sit down to class; working students can attend classes no matter what their work schedule might be, folks that travel for business or pleasure can attend class from anywhere in the world that has internet access.*

[13] **Institution:** Pfeffer 2003; Wallace 2007; Oh & Park 2009; Moskal *et al*. 2012; Gedik 2013. **Faculty:** Easton 2003; Wallace 2007; Massoud *et al* . 2011; Moskal *et al*. 2012; Gedik 2013. **Learner**: Bernard *et al.* 2009; Cook *et al.* 2010; Su 2006; Baxter 2012; Marchand, & Gutierrez 2012; Moskal *et al*. 2012

[14] http://www.worldwidelearn.com/education-articles/benefits-of-online-learning.htm

2. *Online learning enables student-centered teaching approaches. Every student has their own way of learning that works best for them. Some learn visually others do better when they "learn by doing."*[15]
3. *Course material is accessible 24 hours a day 7 days a week. Students have the ability to read and re read lectures, discussions, explanations and comments. Often spoken material in the classroom passes students by due to a number of distractions, missed classes, tiredness or boredom.*
4. *In an online environment, attendance to class is only evident if the student actually participates in classroom discussion. This increases student interaction and the diversity of opinion, because everyone gets a say, not just the most talkative.*
5. *Online instructors come with practical knowledge and may be from any location across the globe. This allows students to be exposed to knowledge that can't be learned in books and see how class concepts are applied in real business situations.*
6. *Using the internet to attend class, research information and communication with other students teaches skills in using technologies that will be critical to workers in the 21st century business community that works with colleagues globally and across time zones.*
7. *Participating online is much less intimidating than "in the classroom." Anonymity provides students a level playing field undisturbed by bias caused by seating arrangement, gender, race and age. Students can also think longer about what they want to say and add their comments when ready. In a traditional class room, the conversation could have gone way past the point where the student wants to comment.*
8. *Because online institutions often offer "chat rooms" for informal conversation between students, where student bios and non-class discussions can take place, there appears to be increased bonding and camaraderie over traditional class environments.*
9. *The online environment makes instructors more approachable. Students can talk openly with their teachers through online chats, email and in newsgroup discussions, without waiting for office hours that may not be convenient. This option for communication provides enhanced contact between instructors and students.*
10. *Online course development allows for a broad spectrum of content. Students can access the school's library from their PC's for research articles, ebook content and other material without worries that the material is already "checked out."*
11. *Students often feel that they can actually listen to the comments made by other students. Because everyone gets a chance to contribute, students are less irritated with those that "over contribute" and can ask for clarification of any comments that are unclear.*
12. *Online classrooms also facilitate team learning by providing chatrooms and newsgroups for meetings and joint work. This eliminates the problems of mismatched schedules, finding a meeting location and distributing work for review between meetings.*

[15] Though this is a common position, it is not supported by the research*, see* Pashler, H., McDaniel, M., Rohrer, D. and Bjork, R. (2005). Learning Styles: Concepts and evidence. *Psychological Science, 9(3).* 105-119. And Massa, L.J. and Mayer, R. E. (2006) Testing the ATI hypothesis*. Learning and Individual Differences, 16*, 321-335.

13. *Students often comment that online learning lets them attend class when fully awake and attend in increments of convenient time block, rather than rigid 2 or 4 hour stretches once or twice a week.*
14. *Because there are no geographic barriers to online learning, students can find a diversity of course material that may not be available to them where they live or work. This is especially true for professional training such as medical billing training or purchasing training and for students in remote rural areas that cannot support college or vocational training centers.*

Notes on accessibility: We note that an issue of particular concern to the Queen's community is the accommodations for students with different accessibility constraints. Some aspects of online learning can be beneficial. Students with mobility problems can take classes from the comfort of their physically accessible environment. A variety of formats improves accessibility for students with different disabilities and learning styles.

What are the risks of online learning for students?

There are a number of concerns about online teaching in relation to the student learning experience. For example, the University of Illinois provides an overview of the main weaknesses of online learning:[16]

> *While an online method of education can be a highly effective alternative medium of education for the mature, self-disciplined student, it is an inappropriate learning environment for more dependent learners. Online asynchronous education gives students control over their learning experience, and allows for flexibility of study schedules for non-traditional students; however, this places a greater responsibility on the student. In order to successfully participate in an online program, student must be well organized, self-motivated, and possess a high degree of time management skills in order to keep up with the pace of the course. For these reasons, online education is not appropriate for younger students (i.e. elementary or secondary school age), and other students who are dependent learners and have difficulty assuming responsibilities required by the online paradigm.*

Our discussions with stakeholders identified many of these same concerns about online learning specifically at Queen's. There is a more general question about the extent to which we cultivate dependent versus independent learners through our academic programs.

The importance of student engagement: It is vital in our online courses to ensure student engagement, and those students that lack the motivation and time management skills will be at risk. However, the same challenge exists for students in a lecture course that fails to promote regular engagement. It is unclear whether this concern is greater in an online course than a large lecture; students may attend each week paying some attention but not study or review the materials until the week of the exam. Any course runs the risk of losing the unmotivated student if it fails to provide incentives to keep up with the

[16] http://www.ion.uillinois.edu/resources/tutorials/overview/weaknesses.asp

material and opportunities for frequent application and feedback. As discussed earlier, active learning and frequent feedback are two of the principles of effective teaching (Chickering and Gamson, 1987).

The impact on attendance: A common concern with online learning is the loss of face-to-face time, the value of which diminishes with attendance. Some online technologies use video-capture as a lecture substitute. There is a concern that the availability of recorded lectures would further diminish the incentive to attend the live lectures. Others have explored the impact of online lectures on attendance (Cardall et al. 2010; Traphagan et al. 2010). In general, video-captured lectures have a negative impact on attendance, but overall they have positive effects on learning.

The importance of current material: Some of our informants noted that online courses may be more prone to becoming stale and outdated once they are developed. A frequent concern was the perception that the institutional strategy for developing online courses promoted design and content features that had a long shelf life. The risk was noted that this permitted a course to ride on existing structure and content with little novelty from year to year. The centralized control of the Faculty of arts and Sciences (FAS) online courses through Continuing and Distance Studies (CDS) was thought to exacerbate these concerns, but we saw little in the way of evidence that this was the reality. For example, CDS spearheads a formal review of online courses on a regular basis in consultation with departments. Contrast this review process with face-to-face courses in FAS that are not required to undergo any regular review. As we will discuss later on, the distance between CDS and the faculty member lead to tension, frustration, and suspicion about the efficacy of the review process.

Though some faculty are concerned about online learning content becoming stale, an instructor in medicine noted that one of the advantages of online notes over traditional textbooks is that the notes are current, as they can be continually modified as new information becomes available.

The importance of the residential experience: Queen's, more so than many universities, is committed to a residential school experience and many responses in our survey identified the risk that courses increasing their online components may diminish that face-to-face experience. This may manifest as a sense of isolation among residential students, and the promotion of fully online courses could run counter to the Queen's residential brand. Interacting via computer is not the same as discussing concepts face-to-face, though we should note that it need not be worse or less effective when it comes to learning.

Computer literacy amongst students: It is frequently assumed that young people are fully confident and experienced with technology, and therefore with technology-enhanced learning. However, there are students who struggle with the technology. Arunima Khanna, from Health, Counselling and Disability Services reports: *As a psychologist/counsellor who works at Health, Counselling and Disability Services, I have come across a number of first year international students from developing countries who have not had much access to technology in their home countries. They are definitely behind in their computer literacy and some of them have commented that they are not as efficient while doing on-line quizzes and exams. They have noticed that they do well in terms of in-class exams, but not on their on-line quizzes. Just wondering if your group may recommend some ways of building computer competency.* While we

cannot forget the needs of the minority, it is better to have programs that help them overcome the challenges rather than creating courses that are constrained by a relatively small group of students.

Heterogeneities in computer access: In requiring online elements in otherwise traditional courses, we make the assumption that students have sufficient access to a computer with an internet connection. While there are options for using university computers, the need to physically relocate to a university site diminishes the flexibility advantage of online learning. This specific scenario raises a more general concern about whether online, blended, and traditional courses meet the needs of those with various disabilities. Obviously both having to attend class at a certain time and having to use a computer could present a problem. The argument is usually that online courses allow for more universal access for individuals who are blind, deaf, or mobility impaired and require less accommodation, or need for self-advocacy or self-identification.

New and old barriers for students with disabilities in the online environment: Fichten et al. (2001) concluded that although computer technologies have potential to remove barriers for students with disabilities, they can also create new electronic environmental barriers. Accessibility of services and infrastructure, affordability, stigma of requesting accommodation, and attitudes of faculty and peers have been identified in the literature as some of the barriers to higher education faced by students with disabilities (CHRC, 2012; Denhart, 2008). These barriers are environmental or social in nature and not linked to any personal impairment or medical condition; however, they become disabling conditions when students with disabilities interact with environment, preventing (or interfering with) the fulfillment of their basic human right to education. Applying the theory of interaction as a lens to analyze the barriers shows that the failure to accommodate students with disabilities can result in disabling barriers in students' interactions with content (infrastructure/curriculum structure), peers, and/or instructors (stigma and attitudes) (Anderson, 2008; Simonson et al., 2012).

What are the benefits of online learning for faculty?

Many advocates of online teaching explain why, apart from pedagogical gains for students, it is in the interest of faculty to get on board. The following list is extracted from a longer list benefits provided by the World Wide Learning website[17]. We have deleted select points from their list where we saw little relevance to Queen's.

1. *Online teaching allows for 24/7 access to class materials, online classrooms etc. This allows part time instructors with full time jobs the ability to perform their teaching duties at their convenience.*[18]
2. *Using the internet as a classroom provides the instructor (with) the ability to conduct classes with students from across multiple time zones, without having to travel. Because of this, smaller specialized classes are more likely to have enough students to be feasible. This allows instructors*

[17] http://www.worldwidelearn.com/education-articles/benefits-of-teaching-online.htm

[18] Online teaching allows faculty whose research takes them away from campus to continue to teach and interact with their students from away. However, it is a potential a risk if it facilitates the casualization of the professorate.

more opportunities to teach and is especially valuable for training offered by professional organizations.

3. *The online environment aids in some of the more sensitive areas of classroom administration. Online assignment posting areas provides a secure and time documented avenue for turning in assignments. Servers that retain chat session and newsgroup documentation provide indisputable records of class participation for both volume and quality. This reduces the hassles associated with face-to-face instruction.*
4. *Many online institutions are specifically looking for professional people to teach their online courses. This strategy brings practical experience to the students. This approach, combined with the online environment that can be accessed from anywhere in the world, makes it possible for more people to teach and earn extra income.*
5. *Because online classes are structured to compel discussion from all students, a teacher can see immediately if the student does not comprehend the material. Immediate, private correction can be made, putting the student back on course. In traditional environments the problems might not be uncovered until a major test or a major paper has been failed. (Thus) a good bit of frustration and failure can be avoided.* valuation of the

What are the risks of online learning for faculty?

The University of Illinois also provides a list of potential concerns associated with the faculty teaching online courses.[19]

1. *Some environments are disruptive to the successful implementation of an online program. Administrators and/or faculty members who are uncomfortable with change and working with technology or feel that online programs cannot offer quality education often inhibit the process of implementation. These people represent a considerable weakness in an online program because they can inhibit its success.*

2. *Sometimes administration cannot see beyond the bottom line and look at online programs only as ways to increase revenues and are thus not committed to seeing online programs as a means of providing quality education to people who would otherwise not be able to access it. In such a case, an institution that is not aware of the importance of proper facilitator training, essential facilitator characteristics, and limitations of class size would not understand the impact that these elements can have on the success of an online program.*

3. *Successful on-ground instruction does not always translate to successful online instruction. If facilitators are not properly trained in online delivery and methodologies, the success of the online program will be compromised. An instructor must be able to communicate well in writing and in the language in which the course is offered. An online program will be weakened if its facilitators are not adequately prepared to function in the Virtual Classroom.*

[19] http://www.ion.uillinois.edu/resources/tutorials/overview/weaknesses.asp

4. *An online instructor must be able to compensate for lack of physical presence by creating a supportive environment in the Virtual Classroom where all students feel comfortable participating and especially where students know that their instructor is accessible. Failure to do this can alienate the class both from each other and from the instructor. However, even if a virtual professor is competent enough to create a comfortable virtual environment in which the class can operate, still the lack of physical presence at an institution can be a limitation for an online program. For the faculty as well as the participants, such things as being left out of meetings and other events that require on-site interaction could present a limiting factor in an online program.*

Our discussions with stakeholders reinforced many of these concerns about online learning. A number of additional risks were identified through our discussions with faculty and students.

1. **Social media:** With the growing use of social media, there is pressure to expand the ways in which students and faculty interact. The SAPTF notes that the institutional representatives (faculty, staff, grad students) have had virtually no training or guidance in terms of maintaining appropriate boundaries online. We are entering into territory that may be new to some instructors, and issues such as privacy, and the speed with which information is distributed, require careful consideration when incorporating social media into teaching. We are concerned that there appear to be few institutional recommendations on policies governing how we interact via Skype, Twitter, Facebook, and other sites. The concerns here are not so much about the technologies, but privacy concerns. We have heard, for example, that one school instituted a dress code to ensure that students participating in videoconferencing activities had dressed for the day.

2. **Hiring**: There is a concern that institutions will use the technology to reduce the number of regular faculty members hired to teach. The existence of a packaged online course could allow the administration to rely more heavily on casual hires. Furthermore, there is an opportunity to hire replacements at a lower pay scale: regular faculty replaced by adjuncts, teaching adjuncts replaced by grad students. Institutions may be tempted to use graduate students or other less qualified / more casualized help as "markers" or to "administer" the course.

3. **Teaching experience**: There is a concern that "teaching" courses is being replaced by "administering" courses. The teaching experience itself could become less intrinsically rewarding as personal contact and response are increasingly mediated by programs, protocols, and computer screens, which may also encourage turnover and casualization. With such a transition, there are concerns about long-term academic quality, and about long-term effects on the campus as an intellectual community.

In addition to these recurring themes, a number of individuals expressed other concerns, such as:

- Reduction or elimination of a personal connection between students and between students and instructors/TAs, with an accompanying loss of a sense of community and social networks. These are key aspects of the Queen's "personal experience".
- maintaining academic integrity when assessing online tasks.
- the time needed by instructors to develop, prepare, and teach blended and online courses
- the need to grant workload credit for instructors who develop online materials
- technological challenges associated with online teaching, and a perception that online teaching requires a high level of technological competency
- lack of technical and pedagogical support to develop, prepare, and teach blended and online courses

What are the benefits of online learning for institutions?

We have specifically avoided detailed discussions about the financial benefits of online learning to Queen's. The concerns raised by QUFA relate to a perception that in promoting online learning the university is primarily motivated by financial considerations. We do not think that this report is the place to address the issue, but we also recognize that the institutional priorities and responsibilities are the elephant in the room and therefore offer the following cursory observations about the institutional benefits that may be realized through online learning, independent of their benefits to students and teachers.

Generating new revenue from external students: Each student who is registered outside Queen's but who takes a Queen's course generates revenue in the form of BIU and tuition. When a student takes a single 3.0 CR online course, it generates funds for the Faculty of Arts and Sciences. In the legacy budget model, the University receives approximately $1,000 (~$500 tuition + ~$500 BIU[20]) and sends about $650 to FAS.

Retaining revenue lost when students take courses elsewhere: Many students take courses outside Queen's through proactive Letters of Permission or retroactive Transfer Credit. Just as a new student represents new revenue, a student taking an external course for transfer credit represents lost revenue. The main "competitor" for Ontario students is Athabasca College, which has a robust online curriculum, with a student body dominated by Ontario students. (This is one of the incentives for the Ministry of Technology, Universities and Colleges to explore the idea of an online institute, which we discuss in more detail in Part V)

Alleviating timetabling and space constraints: When large lecture-based courses convert formal lecture theatre activities into other activities, there is a relief of a constraint on lecture hall space. However, the reduction in the pressure for our large lecture halls brings with it an increase in the need for new small-

[20] A BIU is a Basic Income Unit, which is the basis of the funding provided from the Government of Ontario per student.

group, active-learning spaces. We note that the plans for a new Teaching and Learning Complex currently include both large auditoriums set up for active learning, as well as smaller, flexible classrooms well suited for group work. This planning process appears to be at a standstill until funding becomes available.

Promoting the Queen's brand: In offering online courses, a university has the potential to make its identity better known outside the natural region that it serves. Though there is a potential benefit to Queen's in expanding its reputation, this is beneficial only if the activity is worthy of pride. Concerns about online courses in addition to other forms of nonconventional teaching are largely rooted in concerns from faculty about the potential impact on the Queen's brand. The emergence of the massive open online course (MOOC) [21] represents a particular variant of online learning with the potential to promote the Queen's brand while fostering instructional experimentation that may well serve future residential and/or distance students. However, while MOOCs present the opportunity to showcase the best of our institution, widespread global usage within the education sector opens the door for the perceived best quality courses to draw in all of the attention. For example, there could be many quality MOOCs of the same economics subject, but because of the low barrier to entry inherent to the MOOC format, the one that is perceived to be best is likely to receive a disproportionate amount of enrolment. As a result, there exists a risk to developing MOOCs - without knowing that what the institution offers is the most world renowned, there is a risk that the investment will generate little attention for the university.

What are the risks of online learning for institutions?

Previous comments about benefits and risks for students and faculty identify a number of vulnerabilities that require institutional solutions. Failure to address these issues will lead to problems that will further hinder expansion of online teaching and sap the goodwill that comes with teaching successes. Of particular relevance to Queen's:

Support for online learning: A robust high quality online program helps address many issues that are faced at Queen's but failure to properly support online learning, from development to execution, will create more problems than the courses solve. There are upfront costs and maintenance costs for courses with online components that do not factor in when faculty teach regular courses as part of their normal teaching assignments. Inadequate support discourages faculty who would otherwise be supportive of mounting online efforts.

Scope of online learning initiatives: An aggressive promotion of widespread online teaching may alienate faculty who are unwilling or unable to teach in this mode. One course that has served as the focus for many discussions was an online version of a popular organic chemistry course. The course began as an online course variant under the same course number as the face-to-face course. There was considerable discussion between CDS and the Chemistry department and the online course is now

[21] More information on MOOCs can be found at: http://net.educause.edu/ir/library/pdf/PUB4005.pdf & http://www.educause.edu/library/resources/what-campus-leaders-need-know-about-moocs

offered under a separate course number. The evolution of the course created considerable ill will, and left some faculty members suspicious of the FAS priorities.

One size does not fit all: Some courses are simply not amenable to online delivery. For example, many courses in the sciences place a priority on hand-on activities at the bench. Similar concerns are noted for students in performance-based disciplines such as music. Though variants are possible where other skill sets are acquired, it is possible that no online activities can replace the practical skills development. In many cases, hands-on skills are irreplaceable components of courses, and labs that incorporate these skills may be required for admission to professional schools. Departments need to ensure that courses they offer continue to meet the broader needs of the students.

Dilution of the Queen's brand: The exposure afforded by online courses in the external world can be a blessing or a curse, depending on the quality of the courses. If courses do not meet the standards of face-to-face courses, then the image that is projected does not accurately reflect the University as a whole. Brand dilution is a concern, particularly if the only first-hand experience of an external student or parent is a weak online course. A student taking a weak face-to-face course balances that experience with the joys of other wonderful courses and their extracurricular experience. For this reason, it is imperative that our online offerings be held to the highest standards.

Lessons from Queen's Courses with Online Components

Queen's has not made the investment in online learning that has occurred in other universities within Ontario, but there are many existing examples of excellent, innovative uses of online and blended learning at Queen's, many of which were highlighted by those who made submissions to the task force. These represent a wide variety of technologies, implementations, and pedagogies, but are largely bound together by the passion of the instructors involved who have championed these non-traditional methods. Select "success stories" are described below, in most cases by their faculty developers. Obviously, this is not a comprehensive list and nothing should be interpreted from the exclusion of any particular course.

Faculty of Arts and Science

Film 110: Film, Culture, and Communication -"Faculty in Film and Media got interested in blended learning because we have been increasingly unhappy with the lecture format in large courses. We have seen a reduction in student involvement now that they can check their Facebook messages and Twitter accounts during the class. We were also increasingly unhappy with old-style tutorials that focused only on group discussion. In order to increase student engagement and retention of material we began a major redesign of FILM 110. Because the department did not want FILM 110 to have a fully online section (we do offer other distance courses) we did not receive any funding from the Course Redesign Project, however we did get generous support from the Faculty Office to hire graduate students from the Cultural Studies program.

The new FILM 110 has several distinct features. 1) Only one short face-to-face lecture each week. It

happens right before the weekly film screening on Monday evening. 2) Students do the rest of their weekly preparation using Moodle: one or more "vodcasts" (illustrated video lectures) each week, readings, homework assignments, etc. 3) Thursday and Friday all students attend small tutorials (25 students maximum) facilitated by graduate students. These sessions are "manualized," which means we provide the teaching assistants with detailed direction. The tutorials employ participatory, small-group, problem-based learning techniques to engage students. 4) At the end of each week the students must attempt a 10-question, multiple choice quiz on the week's work. There are two additional writing assignments and a short filmmaking project, but there are no mid-terms or final exams.

The online components — the vodcasts and the quizzes — have proven to be quite effective, in our view. But the students don't like the weekly quizzes, mostly, we believe, because it forces them to do their homework each week. At the moment we don't believe FILM 110 would be as effective if it were entirely online. The tutorials are too important." *Provided by Clarke Mackey*

FILM 260: Film and Digital Media Theory: as an online course through Continuing and Distance Studies with enrolment limited to 300 students. As the course has no pre-requisites, it is open to the public and students at other institutions. The two main course objectives are to introduce key concepts in digital media theory and improve students' ability to think critically, write clearly, engage and communicate professionally online, and design creative digital media texts. This course was featured by Contact North in their Pockets of Innovation feature.[22]

GPHY 101: Human geography - The fundamentals of human geography including the meanings of place, the impacts of globalization, multiculturalism, population change and movement, environmental history and politics, cultural geography, issues of uneven resource distribution, the role of colonialism in the modern shape of the world, agricultural geography, and urban geography. This course has been recently redesigned as a blended offering, significantly enhancing both the face-to-face and virtual interaction in the course. Students engage in problem-based-learning resulting in increased class discussion. Teaching assistants have been transformed from back room markers into learning coaches who work in collaborative teams to do some marking. http://www.queensu.ca/artsci/news-and-events/department-news/teacher-s-test-produces-stunning-results

MUSC P52: Rudiments: "MUSC-P52 deals with the rudiments of music and is not open to Bachelor of Music majors who are required to have obtained this knowledge prior to starting their degree. Many non-BMUS students take MUSC-P52 who have an interest in music but no formal training and these students potentially use this course to satisfy a minor concentration in music. Up until the fall of 2011, the course was often taught by one professor to a maximum of 75 students and the class usually filled up quickly. It was redesigned in the fall of 2011 to handle an enrolment of 200 students by only offering the course in the evenings and using Walter Light Hall Room 201 which has a lecture capture recording system installed that is very easy to use. In addition to the many online resources that are available for students to practice rudiments on their own (including a number of phone apps) if a student misses a

[22] http://www.contactnorth.ca/pockets-innovation/connected-teaching-and-learning

lecture they can easily watch the missed class on Moodle. The last few lectures in the course cover some of the more difficult concepts and many students re-watch these lectures before writing the final examination. The course is still only taught by one professor (with additional marking assistance for the increase to 200 students) but one of the most remarkable aspects of the increased class size is that students stay on top of the material more conscientiously. They are also much more diligent in reviewing the lectures through Moodle instead of tracking down the professor during an office hour or scheduling an individual appointment. In many ways, it is much less work to teach 200 students using the lecture capture system than it was to teach 75 students using the normal method of course delivery and the course evaluations certainly reflect high student satisfaction. The course was taught to the maximum enrolment of 200 students in the fall term of both 2011 and 2012 and will be delivered this way for the foreseeable future." *Provided by John Burge*

MUSC 102: Introduction to the History of Western Art Music II: "In MUSC 102 I use links to other sources so students can have a wider exposure to cultural sources that are available on YouTube, on museum websites, and the like. I also place study guides up for students to help prepare them for tests, and I have started using online quizzes as part of my assessment. This has been a learning curve as we stream musical examples online, but with Scott Whetstone's help, we are figuring out the problem areas." *Provided by Kip Pegley*

PHYS 104-- Fundamental Physics, PHYS 460-- Laser Optics: "Phys104 Fundamental Physics and Phys460 Laser Optics both exploit research-based instructional strategies that have been optimized and validated through ~20 years of studies at a variety of institutions (I use Just-in-Time Teaching with Peer Instruction). The key factors to why students like and learn better: students come to class ready to learn, students have many opportunities every week to receive formative feedback, and I have many opportunities to receive feedback from them about how learning is progressing (so I can change on the fly to meet their needs). Online technology is important for this: before 2/3 of all lectures, students do a reading assignment and respond online to some conceptual questions and a "What did you find confusing question?". Some of them get an email with feedback on their responses before the lecture from either me or the TA. I then set the topics that we explore in the lecture based on their responses and sections that did not cause problems are not discussed. Some of their questions or comments they made online are directly referenced in the lecture. We use a classroom response system and conceptual questions, with many opportunities for students to turn to their neighbour and discuss (Peer Instruction). Since the reading assignments "cover" all the material, I can focus lecture time on helping them assimilate the more challenging material. The online component allows them to collect the information, and start figuring out what they do not know.

This approach comes from the realization that even with a group of only ~50 students, in a standard lecture, there is a huge barrier between student and lecturer: this is a real barrier to learning. Technology allows me to (somewhat) overcome that barrier, while keeping the time I devote to teaching reasonable. As a student in my 4th year course commented to me this term: " They say knowledge and discovery are best received by the prepared mind (which sees the holistic picture, the concept map, is equipped with the mathematical tools), and they don't lie! The basic curriculum and approaches to

teaching are changing and diversifying so rapidly that a generational gap in physical years can translate into eons in appropriate pedagogy.

The common complaint these days is the so-called 'loss of touch' between professors and students. Peer-instruction bridges that gap." *Provided by James Fraser*

RELS 131 – World Religions/Religious Worlds: "RELS 131 has recently made the transition from a traditional long-distance (correspondence) course to an online one. The material in RELS 131 can be a bit overwhelming because it is a survey course starting with some of the oldest religious practice. As a survey course it introduces history, philosophy, some ritual, and some consideration of the larger themes across religions. As the course has progressed to an online one, I have been able to introduce a weekly discussion group where students are separated into small "tutorial" groups, discussing any questions they have for that particular week of work. It brings students out of the isolation of working independently (and it is worth 20-25% of their final mark so most do participate) and allows them to work through some of the thicker historical details by comparing and contextualizing them within more contemporary issues. The discussion forums are a more casual discussion where I encourage students to connect with each other over the material and worry less about posing a formal question--they have essays in which they can be formal. I think the forums really help with the challenge of working through a survey course like this independently. Finally, I also think the nature of an online course, where students and I are connecting frequently, keeps students engaged on a regular basis. I post my own questions on the forums and offer weekly updates that are emailed and posted for the students to access. Again, this helps everyone to stay active in the course and less likely to forget about it, something I think happens frequently in traditional long-distance courses." P*rovided by Danielle LaGrone*

RELS 224 – **Taoism**: "The philosophy, worldview, spirituality and ethics of Taoism, China's organized indigenous religion, in Chinese history and in the contemporary world. In 2005 I created a website containing 12 video clips of interviews with American Daoist practitioners. Each clip was accompanied by a short commentary that I wrote, and contained a discussion forum that invited students to reflect on the video clips and to answer questions about the issues of authority, authenticity, and representation. The site was used simultaneously by my class and a similar class run by a colleague at the College of Charleston, SC. Students from the two institutions were encouraged to interact with each other, to read each other's postings and comment on them. In both cases, we asked students to visit the site on their own and make postings on the discussion board before class. The postings on the board were then used in class as the basis for discussion. The site was successful because it provided students with an incentive to learn on their own outside of class, and enabled collaboration between students and professors at two different institutions. As a result this created a better discussion in the class." *Provided by James Miller*

THEO 709 -- The Polity of The United Church of Canada: "THEO 709 was a course in church governance, specifically in this case with regard to The United Church of Canada. I think two factors made this course particularly successful as an on line course.

First was the quality of the discussion that happened through the on line discussion forum. Each week I posted a 12-15 page reflection on the assigned topic. This reflection included the information I would have delivered in a lecture in a face-to-face class. My comments were intended to build upon, and to supplement, the assigned reading for the week. Each class member was required to do at least three posting each week in the discussion forum. [Participation in the discussion forum was worth 40% of a student's final grade.] At least one posting had to engage the assigned reading and/or my reflection; the other two could be responses to the assigned reading, my piece, or the comments and postings of others. In the end, students averaged about five postings per week in the course. I participated in the discussion, commenting on some of the student postings and responding to questions they posted if none of their student colleagues did so. So, there was a much richer "discussion" of the course material than would take place in a typical face-to-face class. Not only was there more participation, but there were more thoughtful comments because a class member could take time to think about a question or an issue in a way that the synchronous nature of a face-to-face class does not permit. In addition, the introverts in the course participated far more than they would in a face-to-face class and the extroverts learned a little patience. In summary, the discussion was more extensive and of higher quality than I have experienced in my face-to-face courses.

Second, and related to the first, because there was a greater level of participation, I had a better idea of whether students understood the course material. Because no student could "sit silently," given the compulsory participation in the discussion forum, I became aware to greater degree than in a face-to-face class when and where students were struggling with the material, and so I could address those aspects of the course material more quickly than I would otherwise have been able to do.

As an instructor, you do have to think differently about the delivery of course material and assignments when teaching on line. That said, I judge, based on my experience of teaching THEO 709 in a face-to-face mode and in an on line mode, that the latter was a better educational experience for the students. I would note that it is much more time-intensive, as an instructor, to teach on line as compared to delivering the same course in a face-to-face format. What I could have heard in a classroom I had to read, and what I could have said in response to a question I had to write." *Provided by John Young*

THEO 713 - Luke's Gospel and Acts, THEO 714- The Epistles of Paul: "In terms of 713 and 714, I think that the key to the success of both these courses was their interactivity. They were small courses to begin with (20 or so students) and I designed it so that there was a high degree of student-to-student engagement over the material. For most units in the course I divided students into smaller groups of 5-8 and appointed 1 student to act as moderator, who was tasked with beginning the conversation and keeping it going. Other students were "respondents." I posted discussion a question at the beginning of the unit that asked them to engage the primary and secondary material. They were required to post at least one substantive initial response and 2 substantive responses to other students. I did not participate (unless called upon directly) but I did "hover" in each discussion group in order to see how conversations were developing." *Provided by Richard Ascough*

Faculty of Engineering and Applied Science:

Professional engineering skills (first year): Twelve attributes have been outlined as necessary for all graduates of an Engineering program by the Canadian Engineering Accreditation Board and the role of the library has been clearly established in supporting many of these attributes particularly design, communication, and lifelong learning. Teaching and learning about information search and management was agreed upon as a core to the acquisition of these attributes. Online modules have been developed to teach these cores skills and are embedded into the project-based course on Professional Engineering Skills; demonstrating mastery of information management learning outcomes is integral to course assignments and the final grade. Each of the weekly modules has goals, lecture slides, examples, and links. Topics include development of a concept map, how to define what information is needed, how to do information searches, criteria for the evaluation of sources, examples of the information sources that students are most likely to use and also citation management software. To link these modules to the course content, the students have to submit a concept map and both individual and group lists of evaluated and annotated information sources related to the topic of their project. At the end of the term, the learning from the online workshops has to be applied in the final project. This course was featured by Contact North in a Pockets of Innovation feature.[23]

Faculty of Health Sciences

Online Learning Modules in the School of Medicine Technical Skills Program: The School of Medicine has used online learning modules to support its undergraduate and postgraduate technical skills program for the past 15 years. Learning a technical skill can be divided into a cognitive component, such as understanding the indications and complications of a procedure, and a motor component where students actually learn and practice the procedure. Online learning modules have been used in the Technical Skills Program to allow students to prepare for a session by reading the cognitive material and watching videos of the procedure. This ensures that time in the skills lab is primarily "hands-on" time and focused on actually learning and practicing the procedure. Material on the Technical Skills Website has the advantage of being available anytime, anywhere which is important for our students as they can access the material to prepare for teaching sessions while out of town on clinical assignments or electives. As well, students and staff working in a clinical setting have the option of accessing the website to review a procedure just prior to performing it on a real patient. Technical Skills Online Modules are at: http://meds.queensu.ca/education/simulation/undergrad/technical_skills_program

The **CARL course** (MEDS 112; Critical Appraisal, Research and Lifelong Learning) is a first year medical course which has effectively employed online resources in the form of specially created online modules. These modules have been designed by the course instructors to complement in-class materials and textbook readings. Students have assigned course time to read and work through the modules, and then test their knowledge with multiple choice quizzes embedded within the Medtech program (another successful online resource). These modules allow students to progress at their own pace through the

[23] http://www.contactnorth.ca/pockets-innovation/integrating-information-literacy-course-design-and-delivery

material, and are designed with multiple practice examples prior to the quiz. They are used both as preparatory work for future in class sessions and as reinforcement for complex and challenging topics previously covered. In every course evaluation, students comments favourably about the online modules as an excellent resource. They are frequently assigned as review for upper year sessions that touch on the same topics, and are also used as study aids for the final medical in training examination. - *Provided by Heather Murray*

MEDS 231 - Endocrinology and Renal: A variety of learning methods are used in the Endocrinology and Metabolism portion of MEDS 231. The online resources are primarily meant for knowledge sharing. The students have access to online study notes prepared by the lecturer. They offer a number of advantages over traditional textbooks in that the notes are current as they can be continually modified as new information becomes available. The notes also provide practical patient management advice, often not contained in a more formal textbook. Key material is highlighted on the webpage. Students can assess their learning with quizzes at the end of each module. To spark interest, links to videos of relevant surgeries, procedures and physical findings are provided in the modules. Students can print the online notes or if environmentally conscious, can just retain them online. As a result of the use of online modules, in-class time is not spent transferring large amounts of information through didactic lectures. Instead, the time is spent on higher level learning with case-based learning with application of the knowledge learnt in the online modules, problem-solving new clinical scenarios, observing interviews with patients and allied healthcare professionals, answering student questions, as well as completing a variety of formative and summative evaluations. *Provided by Robyn Houldon.*

The School of Nursing offers multiple courses in a blended fashion. **The primary health care nurse practitioner program** "is a 9 university consortium program offered in Ontario. It is successful because it is funded properly by MOHLTC and has a dedicated IT office with 7 IT people. Five of whom are co-located in Ottawa. It is offered in English and French. The IT people are dedicated full time to finding resources to help with online learning and also make vignettes. We have up to 200 students taking a course at any one time with multiple small groups and tutors based at each university. At Queen's we have two sites - one in Kingston and one in Peterborough." *Provided by Jennifer Medves.*

Faculty of Education

Continuing Teacher Education Online Courses: "Research indicates the effectiveness and quality of instructor contributes more towards student satisfaction than technology. Technology is only as good as its end-user. Additionally, technology has to be integrated into the course in a meaningful and purposeful way in order for it to be effective. Our courses use a variety of technology such as wikis, blogs, VoiceThreads; however, the discussion board is most significant tool. The discussion board has two purposes: to develop a community of learners and to construct knowledge. This is where all the learning occurs when you have an effective instructor who can facilitate the learning process. In our courses, candidates share their ideas as outlined in the course and then they are required to respond to one another. This type of social interaction enables candidates the opportunity to engage in higher order thinking skills and to develop critical thinking skills that contribute to new knowledge. In addition,

relationships begin to form and a community of learners is established, and thus the end user feels connected." *Provided by Wanda Beyer.*

Conclusions on the Pedagogy of Online Learning

These course vignettes are a small sampling of the ways faculty members have embraced online learning in their courses. For the most part, they began as grassroots efforts, filling a need within the academic unit. They (and other efforts across campus) represent a wide variety of technologies and techniques designed first and foremost to facilitate student learning. It should be noted that "one size" does not "fit all" and that the predominant message is one of technology used in the particular context of a specific course or program. The common theme is not a specific technological tool, but rather a focus on active and flexible student learning.

The purpose of this report is to assess the state of online learning at Queen's, but we find many of the issues are intertwined with the pedagogy of learning. Though there are certainly exceptions, we conclude that the evidence from single (Coates et al. 2004; Cook et al. 2010;Gros et al. 2012; Moskal et al. 2012) and large scale (Bernard et al. 2004; Bernard et al. 2009; Means et al. 2010; Bennett et al. 2012) studies supports the case that online and blended learning is no worse than traditional lectures, and generally more effective than traditional face-to-face teaching. The benefits are most likely realized through simultaneous attention to both course design rooted in current pedagogical research and the opportunities afforded by technology.

We conclude that there is merit in facilitating online learning at Queen's because of its potential to be used in a way that promotes student engagement. However, this mode of instruction requires that students, faculty and administration are committed to doing it well. Obviously, a similar commitment is required to run a face-to-face course well. However, there is presently a climate at Queen's that places unnecessary pressure on faculty who choose to incorporate novel approaches, including application of online technologies. The many success stories that we have highlighted are driven by faculty seeking to improve courses. Based upon our consultations, success of a technology-enhanced, blended or online course is more likely when:

- efforts are made to ensure that the course uses evidence-based approaches to ensure standards for quality,
- the course is designed in a way that uses online resources optimally,
- support exists when faculty and students experience technical problems, and
- the course provides students with the appropriate skills in the context of academic programs and their long term goals.

For Queen's to progress with online teaching it must pay greater attention to the coordinated, integrated support of pedagogy and technology, enabling course development and continuous improvement. Online courses that consist solely of archived Powerpoint lectures or captured lectures do not make the best use of the technology and will, under most circumstances, be viewed as pale imitations of live lectures. Facilitation of cross-disciplinary conversations and the scholarship of teaching

and learning related to the development of these resources would enhance the place of online learning within the university. At present we have an Academic Plan with no reference to a long-term policy regarding online learning. Through this exercise, we hope to identify the success stories and identify problems that should be addressed. From these analyses emerge a number of recommendations on long term policies for using online teaching resources that benefit students, faculty, and the administration.

SAPTF Recommendations and Conclusions in Relation to Pedagogy of Online Learning

1. Queen's should promote active learning approaches because they are generally more successful in engaging students in the learning process than are passive approaches.

On the whole, our review of the peer-reviewed pedagogy research makes clear to us that Queen's should promote active learning throughout the curriculum as a means of improving the effectiveness of teaching by better engaging learners. We emphasize that the recommendation makes no mention of the tools used to support learning.

2. There are benefits and risks to using online technologies in teaching and learning, and the relative balance depends on how the technology is employed and supported.

Individuals and units that adopt online tools should strive to recognize and minimize the risks while making the most of the benefits. The utility of online resources in meeting course objectives will depend on choosing appropriate technologies to support learning and their integration into the overall course design. The specific concerns most certainly differ amongst disciplines and courses.

3. Queen's should do a better job identifying and recognizing faculty and staff who are innovators in teaching and promote synergies between them.

Throughout this exercise, we encountered many general criticisms about online learning that could have been precluded by an effort to give our own success stories a higher profile in the community. When online learning is done well in a course, much can be learned from the formula that led to success within the existing Queen's infrastructure. The developers and teachers have the potential to become the nucleus of a group at the forefront of online teaching, but there are too few University-wide opportunities or excuses for them to aggregate and develop synergies.

Part II. Overview of Online Learning Opportunities at Queen's

Background on Online Learning at Queen's

Though many units within the University employ some degree of technology-enhanced teaching and/or online learning, the three units with the most experience are the Faculty of Education, the Faculty of Health Sciences, and the Faculty of Arts & Sciences (FAS). These units have different funding structures, approaches (e.g., targeting residential versus distance students), learning management systems (i.e., Moodle, D2L, Medtech/SONIT/ReHabCentral) and support infrastructure and approaches. Though many readers are likely familiar with some of the online learning activities at Queen's, a summary of online teaching initiatives is provided as **Appendix 2**. In the following sections, we discuss the current practices in situations where online components are used.

Adopting Online Resources by Traditional Courses at Queen's

Apart from the process facilitated through the FAS Blended Learning Initiative (discussed later in this report), many traditional courses have increased their use of online activities. In our discussions, we noted a wide diversity in the interpretation of "online teaching". There is a continuum at Queen's in the reliance on online technology in traditional courses, and it is fair to say that the trend is toward increasing reliance on online technologies. In the following sections, we address some of the concerns that were raised in our surveys and consultations.

Promoting Online Technologies in Traditional Courses

Some courses limit online activities to administrative roles, such as making marks available online or posting lecture notes. These are activities that are relatively simple and widespread. Some courses have invested more deeply into online technologies, employing recorded lecture material as podcasts or lecture-capture versions of lectures. There is also an increase in the use of online technologies to facilitate interactions between students, faculty, and teaching assistants, ranging from chat lines and forums to virtual office hours. Specific lecturing and communication concerns identified in our surveys are identified below:

- **Grades**: In courses with multiple components, students take comfort in seeing their grades in the course database. Apart from seeing that the recorded grades are correct, it presents an opportunity to see how the course administrators translate between number and letter grades. Even within departments, there is considerable heterogeneity in the ways marks are administered and reported. However, we hear from students that they really want the ability to see their marks as a course progresses. Many faculty, however, find it exceptionally tedious to have to deal with the Learning Management System (LMS) for grades, and final grades continue to be submitted using third party data management programs, such as Excel. Until there is a seamless transition from the LMS to the Registrar, Faculty will resist spending time on online mark reporting tools.
- **Lecture-capture hardware:** Faculty who wish to record their lectures and post them as resources can only do so if the lectures take place in one of the few lecture theatres with the necessary hardware.

The hardware is also available in the Centre for Teaching and Learning (CTL) if a faculty member wishes to record material outside of a lecture. Faculty have faced technical challenges with recording, posting and streaming captured lectures.

- **Lecture-capture as a resource:** Though podcasts and captured lectures are usually intended as a reference, students may not have the requisite learning skills to use them as a replacement for a live lecture. There is a concern that students may neglect the live lecture and attempt to watch or listen to the taped versions instead. The students relying exclusively on captured lectures miss the opportunity to ask questions and clarify their understanding in real time. Some faculty have expressed concern about "off-the-cuff" remarks (theirs or the students) being archived online because of the potential for misinterpretation. This has led one School to disallow podcasting of classroom sessions during the more spontaneous, case-based sessions or if a Faculty member is uncomfortable with the process.
- **Copyright concerns**: With the advent of online publishing of lectures, faculty have a growing concern about their vulnerability on copyright issues. Uncertainties about copyright have been an impediment to posting materials that are used in class. The Copyright Advisory Office associated with the library has played an important role in disseminating information about changes in copyright law, particularly in relation to online technologies. Many of the requests for Copyright permission that come through the Copyright Advisory Office are already covered by either existing library agreements or under exceptions in the Copyright Act. A priority for the office is to ensure that course materials are posted legally, through obtaining transactional copyright licenses when necessary and leveraging the vast collection of electronic resources available through the library. One tool that will help with this is the adoption of a comprehensive e-reserve system that will integrate with Learning Management Systems across campus. This system will launch for Moodle courses this summer..
- **Virtual office hours and online chat rooms:** For many students, approaching a professor for a face-to-face meeting is too intimidating, and conventional office hours may not be fully exploited. Virtual office hours permit a more anonymous mechanism to engage students individually. While many would argue that it is inferior to a face-to-face meeting, many students (particularly in first year) will not approach a professor directly. Many faculty employ online chat rooms or forums to engage students as individuals or groups. In many cases, that creates a sense of familiarity that encourages students to make subsequent face-to-face contact.

In addition to supporting content in lecture-based courses, there is a growing practice of using online mechanisms to conduct summative evaluations. The question about this practice is the extent to which students elect to follow the guidelines for Academic Integrity, and whether deviations from acceptable practises matter in the context of the course evaluation.

- **Student response system (SRS)-based examinations**: Many classes that have adopted iClickers or related technologies employ them as a means of conducting quizzes in class. Questions are projected on screen and students use their device to select the appropriate answer. There is no effort to ensure that the SRS is being operated by the student registered in the course, but the same risk occurs in many large classes conducting written quizzes.

- **Online self-tests**: Many courses have adopted online quizzes that do not count toward a final mark but instead serve to advise the student on deficiencies in understanding the material. Students may work in groups, and we would presume that under typical conditions, the most accurate assessment of the student's learning occurs when the student works alone.
- **Online quizzes**: Many courses use online technology to allow students to execute formal quizzes from their own computer. The instructor may post a quiz for a window of time, permitting the student some flexibility. However, in the absence of test delivery programs that simultaneously block access to files and internet resources, this introduces the possibility of student consulting references while completing the test. Of course, some courses may want the student to learn how to find the answers, rather than memorize specific content.
- **Academic Integrity:** When evaluations are intended to discover what a student has learned, the process is circumvented when a student is aided by another student who has either completed the quiz earlier or is working simultaneously within earshot. The "team approach" to online quizzes infuriates many peers who work alone. A student can also hide within a group, preventing them and their instructor from accurately identifying their individual deficiencies.
- **Submission of assignments online**: This may be perceived as a boon or a burden, depending on the nature of the assignment. Online submission provides flexibility, tracking of the time and date of submission (and possibly plagiarism detection) and may diminish administrative workload in receiving hard copy assignments. However, faculty must be prepared to handle and respond to digital files or print all of the submissions themselves. Accessing and managing a large number of digital files can be onerous if the LMS is not designed appropriately. This can be frustrating for faculty. On the other hand, with electronic submission comes the opportunity to more easily organize anonymous peer review and the resultant exposure to how one's peers completed the same assignment. This is a valuable learning activity if structured appropriately.

Blended Courses

Blended learning is a practice whereby a course combines face-to-face and online activities to engage students in active learning. The mixture of approaches has led to the term `hybrid` course, but the term "blended" is becoming the norm. One approach to blended learning is the `flipped` class, where content is accessed by the student during independent study and the face-to-face approach used for application and consolidation. As previously discussed, one important finding from the meta-analysis discussed previously (Means *et al.,* 2010) was a statistically significant, beneficial effect seen in blended courses, which mirrors that seen in previous studies (e.g., Bernard *et al.* 2004; Zhao *et al.* 2005). The benefits ascribed to the blending of courses are achieved through course design features, rather than the technology *per se.*

With many Blended Courses, faculty have made the decision to use online resources as a major mode of content delivery, freeing up contact time for smaller group active learning. The critical element here is that face-to-face teaching occupies a central role, but it can be transformed into a more learner-centered activity emphasizing application of content material and the focused teaching of difficult concepts. The FAS Blended Learning Initiative (BLI), discussed in detail below, is one approach to

blended learning, but many courses have elected to go this route independent of the approach adopted by the BLI. The following practises are examples of approaches that move a Traditional Course into Blended Course territory.

- **Online content modules:** Faculty may assign online content to be done by students independently out of scheduled class time. In some courses curricular time may be scheduled as a 'placeholder', allowing a student time to complete the assigned work. This may represent original material created by the faculty member or course team or material created by a non-commercial or commercial source external to the university. Content modules may be enhanced or extended by the inclusion of formative assessment providing feedback to students on their comprehension. Students may be required to interact in virtual groups completing tasks related to the content, providing an opportunity for synchronous or asynchronous peer learning related to the content. In a blended learning model (as opposed to a pure online course), such content modules should link to some form of face-to-face activity (large or small classroom session) creating an ongoing linkage between the students, the content and the faculty member.
- **Student created online content**: As part of a course, students may be required to create online content such as a website, Wikipedia entry, digital story or video. This content may be shared with the whole class creating opportunities for both peer teaching and feedback.
- **Course discussion forum**: These can be used as formal curricular tools with assigned tasks and expectation for feedback and discussion, or they may be used more informally allowing student initiated questions and topics. Even when used informally, this may develop into a positive venue for peer teaching and learning. One caveat is the need for monitoring discussion forums, which may become problematic in large enrollment courses. If unmonitored, there is a risk of inappropriate or inaccurate postings by students.
- **Peer assessment**: Faculty members may assign writing assignments to be submitted online and then use a program (or LMS) to randomly distribute students' (anonymous) work to each other. Each student is then asked to evaluate several of their peers' treatment of the same material and provide feedback. The argument is that by reading better and worse examples of the same assignment and having to articulate what makes some better and some worse, students will recognize the strengths and weaknesses in their own writing and, combined with their peers' direct feedback, become better critical thinkers and writers.

One of the factors that affect the success of a blended course is the nature of the online activities. The Means *et al.* (2010) study reported a great many online activities that had, on average, little instructional benefit. Surprising to many, online activities such as multimedia and self-test quizzes had no statistically significant impact on student learning outcomes on their own. The greatest benefits to learning in an online environment were attributed to (1) activities adapted by the instructor that were specific to the course and (2) collaborative learning, through either peer-to-peer or instructor-led interactions. This effect draws attention to the need for properly designed multimedia modules that are appropriately integrated into the course design.

A recurring theme centres on the potential for blended learning to have institutional benefits for containing costs. The best blended courses are very intensive activities, and in most cases require greater resource commitment to develop than would a traditional course for the same number of students. The impression we get from our discussions is that Queen's recognizes that online learning is perhaps not the cash-cow it was once perceived to be, but that the pedagogical benefits merit continued investment. The experience gained by faculty members during the development of online courses is very valuable. Not only does it add to their own technical expertise, they also become a resource, essentially seeding a department with a colleague who can help others reach their own goals with online technology.

The Blended Learning Initiative (BLI)

In 2011, Arts and Sciences formally began the Blended Learning Initiative (BLI). Headed by Associate Dean Ravenscroft, and operated with staff seconded from Centre for Distance Studies (CDS), the program provides financial, technical, and instructional design support money to facilitate conversion of a traditional course into a blended course. The program also provides other support by integrating service units across the University, including the Library (subject specialists, copyright office), Center for Teaching and Learning (CTL), ITS, and the Registrar's Office (timetabling and space). Without this support individual faculty members can encounter prohibitive institutional barriers. The program also provides research assistance to evaluate redesigned courses, and coordinates regular gatherings of faculty members involved in and interested in course redesign. The following information is extracted from an internal report on existing practices in the Blended Learning Initiative (**Appendix 3**).

> *Blended learning integrates in-class, face-to-face learning with online learning in purposeful thoughtful, and complementary ways to enhance student engagement. Improved student engagement and learning is achieved by focusing on in-class interaction to promote active and collaborative learning, and minimizing or eliminating the passive transmission of information.*
>
> *In order to meet the quality standards expected for blended learning, course design needs to be learner-centred and include the following:*
>
> - *active learning and small-group activities in the classroom, the design of which is informed by pedagogical research;*
> - *interactive online materials to deliver enriched content, to guide students through the textbook, and to verify comprehension, in order to devote classroom time to applying, integrating, and synthesizing the knowledge;*
> - *fewer classroom hours (to balance the additional student workload taking place online).*

Central to the exercise is an instructional designer appointed by CDS to work with course designers to ensure certain practices are maintained. Note that the instructional designer is an IT-oriented person who provides the technical expertise needed to create the online component. The course designer is usually a faculty member who creates the content, and retains the intellectual property rights.

- *stimulating and guiding the course developer to use evidence-based practices drawn from the relevant pedagogical scholarly literature;*
- *providing the course developer with expertise in online course design and in current best practices in online learning;*
- *providing the course developer with advice on creating and maintaining an active learning environment both in the classroom (for blended courses) and online (for fully online courses);*
- *advising on the use of small-group activities to achieve specific learning outcomes both in the classroom (for blended courses) and online (for fully online courses), based on current pedagogical research;*
- *ensuring that a systematic design process is followed;*
- *helping the course developer establish strong learning objectives, engaging learning activities, and learner assessments that are closely tied to objectives;*
- *advising the course developer on designing the materials to meet the needs of the learners;*
- *ensuring the course is laid out with clear, logical sequencing and reasonable pacing;*
- *acting as a project manager, maintaining established schedules and deadlines, and reporting on progress to CDS;*
- *ensuring best practices are employed throughout the development process from concept to production to feedback and revision.*

Outcomes, successes, and failures

When asked to provide an update on the status of the Faculty of Arts and Science's Blended Learning Initiative, Associate Dean Ravenscroft provided the following summary:

> *By Fall 2013 the Faculty will have 11 large, introductory blended courses, 8 of which have been developed as part of the BLI. The other three are affiliated with the BLI and receive some Faculty support, but were instigated at the departmental level. Blended courses include subjects in the sciences, social sciences and humanities.*
>
> ***Impact**: There have been nearly 9,000 student enrolments in blended courses by Fall 2013. While most of these courses had little or no active learning in their traditional versions (outside of labs for science courses), the BLI's approach to course design means that every student in every blended course now has regular small-group, active-learning experiences.*
>
> ***Capacity**: Enrolment capacity has increased by 10–20% in each blended course, helping to meet previously unmet student demand; simultaneously, because of the decreased emphasis on large lectures, the institution has realized a decrease in demand for large auditorium space (e.g. Biosciences auditorium), easing pressure on timetabling.*
>
> ***Sustainability**: All blended courses have a long-term commitment from the Department and have gone through the Faculty curricular approval process.*

***Success**: Initial analysis of data from CLASSE student surveys shows a statistically significant increase in student engagement in the blended version in comparison to the traditional version of the same course in areas such as active learning in class, activities that promote higher order thinking skills and student-faculty interactions.*

***Recruitment**: The FAS blended learning initiative has been highlighted in the media, visits from government officials etc., and is being used in recruitment activities to distinguish the first-year learning experience at Queen's from competitor institutions.*

***Advancement**: As a result of this publicity, and the scale of the BLI, the Advancement Office has secured funds to renovate under-utilized space in Ellis Hall into active learning classrooms.*

***Pedagogical Research opportunities**: The program is being assessed through a research study with ethics approval; all faculty members who are part of the program become co-investigators and can use their course data for research activities.*

***Community of pedagogical innovation**: Monthly course redesign gatherings attract instructors from 15 Arts and Science departments, as well as representatives from the Faculty of Health Sciences, the Faculty of Engineering and Applied Science and the CTL.*

***Failures**: The demands expressed through the BLI have not had the impact on improving IT support we would have hoped. Despite all the publicity, there is persistent misunderstanding of the goals of the BLI within the Faculty of Arts and Science. The BLI requires instructors to take a team-based approach to course redesign and development. Not all instructors are willing to work in this way, and one instructor withdrew from the project for this reason. The BLI is also founded on departmental support, which is led by the Department Head. In another example, a course redesign project was delayed by a year because an interim head did not support it; once the "permanent" head took over, the project resumed and has proceeded smoothly.*

It is fair to say that not everyone at the University is on-board with the Blended Learning Initiative. Some are feeling a pressure to change despite the fact that involvement in the BLI is voluntary. Others believe that any faculty member who works to improve their course should be provided with the same level of support regardless of whether they meet the BLI's criteria or not.

As noted above, those involved in the BLI receive a lot of support from the Faculty of Arts and Science and one another as they have formed their own community of practice. However, they often meet resistance and even hostility from peers within their own, and other, departments. Added to the workload involved in redesigning a course for the first time and managing students' expectations, this lack of collegial support and ongoing need to defend against attack takes its toll on BLI faculty and staff.

Fully Online Courses at Queen's

Fully online courses are offered by the Faculty of Education and the Faculty of Arts and Sciences (FAS), through Continuing and Distance Studies (CDS).

The Faculty of Education sponsors a number of existing and planned online course offerings. It currently uses an online delivery model to offer courses used by certified teachers in Ontario to facilitate progression through the ranks within their schools. Approximately 9000 individuals take online courses annually as additional qualifications (AQ) for teachers. In addition to these "AQ" courses the faculty is introducing similar options for teachers in other Provinces. They have successfully offered several courses (as a test) in NWT and are in the process of hiring instructors for British Columbia teachers. These professional development courses do not lead to any degree offered at the university. To remain competitive, the Faculty of Education is also in the process of establishing a professional Master's degree offering as an online laddered credential leading to a graduate diploma or degree in Education. This program will be in addition to existing online graduate courses offered as part of their Aboriginal and World Indigenous Education Studies (AWIES) graduate program which currently offers three online courses per year as part of its core program.

Continuing and Distance Studies (CDS) is the non-academic unit through which FAS promotes the development and delivery of a number of fully online (distance) courses. The courses are degree-eligible credit courses and run in regular university terms. Courses are taken by on-campus (residential) Queen's students, distance degree and non-degree students, and visiting students on letters of permission from other institutions. All non-degree students and visiting students are restricted to courses offered through CDS due to space constraints on campus. The name of the unit is historical, dating back to a time when most students were off campus. Though they acknowledge that the majority of their current students are enrolled in regular degree programs, there is a perception that the name is misleading. If the unit continues to be the FAS mechanism for coordinating online courses, it would be worth considering a name change to better reflect their role, such as Arts and Sciences Online.

Table 1 summarizes the distribution of the 48 online courses offered through CDS. They also operate an additional 2 commerce courses on behalf of the School of Business. Table 1 also reports the total number of courses offered by the units to provide a measure of the proportion of the curriculum offered via an online route. The numbers are misleading in the sense that not all of the courses listed in the calendar are offered regularly. However, of the 2043 courses listed in the 2012-13 FAS calendar, 48 (2.3%) are fully online, and most of these have traditional or blended residential versions.

There have been concerns expressed about the perception that FAS, through CDS, is actively promoting online courses ***for financial benefits*** and is doing so ***at the expense of academic quality***. Based on the number of online courses that exist, there appears little danger of this becoming the dominant mode of teaching in FAS. In a survey of unit heads, 71% of the respondents thought that 5 years from now their

Table 1: Online Courses at Queen's: Faculty of Arts and Sciences

Faculty / School	Program	Number of Courses		Percentage of Courses
		Online	Total	
Arts and Science (Arts)	CLST	1	34	3
	CWRI	1	4	25
	DEVS	3	40	8
	ENGL	4	119	3
	FILM	2	57	4
	FREN	3	71	4
	GNDS	1	40	3
	HIST	5	182	3
	MUSC	1	146	1
	PHIL	3	88	3
	PSYC	6	68	7
	RELS	1	52	2
	SOCY	1	65	2
	STAT	1	19	5
	WRIT	3	6	50
Arts and Science (Science)	BIOL	4	71	6
	CHEM	2	35	6
	COGS	1	5	20
	ECON	1	53	2
	HLTH	1	34	3
	MATH	1	73	1
	PHAR	1	6	17
	PHGY	1	9	11
	PHYS	1	38	3
These departments		**48**	**1315**	**3.7%**
Other departments*		**0**	**728**	
Totals		**48**	**2043**	**2.3**

***Units with no online courses (total courses)**: ARAB (2), ARTF (16), ARTH (77),BCHM (13), BIOM (1), CANC (3), CHIN (3), CISC (51), COMP (5), CRSS (3), DDHT (2), DRAM (57), ENSC (23) EPID (3), GEOL (38), GPHY (63), GREK (8), GRMN (22), HEBR (11), INTS (15), ITLN (22), JAPN (4), JWST (4), KNPE (46), LANG (4), LATN (9), LING (14), LISC (5), LLCU (7), MBIO (1), MICR (13), MSCI (8), PACT (12), PATH (4), POLS (110), SOFT (6), SPAN (39), STSC (2), XRAY (2)

units would offer 10% or fewer of their courses fully online. Negative commentary[24] has been raised in relation to FAS promoting online initiatives as part of a revenue-based business model[25]. Though this issue continues to be raised in various venues, the SAPTF wonders about the nature of the commentary if such an initiative had been launched without an assessment of the financial implications.

A great deal of the conflict about online learning seems to arise from a lack of trust and different priorities at a time when resource allocation is becoming more challenging. The SAPTF recognizes that revenue is a necessary concern for the administration, but most faculty members have other priorities when it comes to teaching: some focus on program integrity and course quality, others on job security or autonomy. Several believe that our teaching goals are best achieved by maintaining or growing the faculty complement in their departments and being able to continue, or return to, teaching small courses in the way to which they are accustomed. Suggestions of increasing class size draws criticism from faculty who, in general, do not have to deal with competing concerns about costs and revenue.

Later in this report (Section IV), we elaborate on the current practices in relation to quality control in online courses.

[24] http://realacademicplanning.wordpress.com/2012/03/23/queens-journal-online-learning-puts-revenue-first-23-march-2012/

[25] Queen's University Faculty of Arts and Science: Roles, Responsibilities and Expectations for Developing and Teaching Online Courses in Continuing and Distance Studies (Version 15 October 2012)

Recommendations and Conclusions on Online Learning at Queen's

4. Senate should facilitate efforts to utilize online technologies that promote active learning.

Teaching strategies change slowly, but the growing availability and utility of online resources means that technology is creating opportunities for individual faculty members to improve their courses. However, the technologies should be adopted only by faculty who are comfortable with the technology and convinced that changes will improve the success of their teaching.

5. Senate should encourage the academic and nonacademic units to invest more thoughtfully in promotion of evidence-based teaching practices.

Fully online courses remain a minority at Queen's but efforts to promote them in FAS have given them a very high profile in discussions of online teaching. In combination with the BLI, the efforts to promote online technologies have met with vocal resistance. Most arguments that we encountered about the status of online teaching at Queen's are based in anecdotal information, which may or may not reflect the reality or the position of the majority. We neither agree nor disagree with these statements, but cannot rely on them because they are subjective and not quantitative. The lack of evidence-based positions in the arguments against online teaching highlights a greater problem, or rather lost opportunity. Later in this report we elaborate on the argument that Queen's faculty members are missing opportunities to include in their teaching, approaches that could contribute to pedagogical research. This promotes evidence-based changes in their own teaching, and is a valid, perhaps underappreciated, contribution to their personal research and teaching portfolios.

Part III. Technology and Support

The SAPTF has carried out two surveys that relate to technology and support. A university-wide survey was sent to administrative heads (via the Secretariat) and faculty of Arts & Sciences (FAS) Undergrad Chairs (via Associate Dean Pierce). The questions related to technology and support for online learning. The first survey was intended to explore the problems faced by faculty, staff, and graduate students who were involved in online teaching. Responders were asked to provide information on the technological and support challenges they faced. It was completed by 43 faculty, 3 staff, and 4 graduate students. A subsequent survey sent to Heads, which requested additional information on support, generated responses from 17 Heads or delegates. The same survey explored their expectations regarding the current and future investments in online and blended learning by their department, aspects that are considered in more detail in Section V. The results from these surveys are summarized in **Appendix 4**. The return rate for these surveys was too low to be confident that the feedback reflects the majority positions, but the surveys provide useful qualitative feedback on issues of technology and support of online learning.

Overview on the Role of Learning Management Systems in Online Learning

Central to the success of online courses is the support for the Learning Management System (LMS). This is the interface between professor and student, allowing the sharing of information and resources, and coordination of activities. In our analyses, we hope to address the following questions:

- Is the current Learning Management System(s) adequate for online courses?
- Is there an argument for harmonizing and/or changing the LMS university wide?
- Does the university offer students appropriate technological and pedagogical support for online teaching and learning?
- Does the university offer instructors appropriate support for online instruction, such as professional development courses in online instruction?
- Do academic units support faculty and departments in course development?
- Can the university promote synergies between the various entities with a stake in online learning and learning technologies?

Overview of the Learning Management Systems used on Campus

Many solutions have been created that permit students and faculty to exchange information via online resources. Though there are examples of simple, course-specific tools that have been created, for the most part the interface between users is through a Learning Management System (LMS). These share a goal of simplifying and controlling the nature of interactions between users (faculty-student, TA-student, student-student). They differ in terms of the ease of use, flexibility, and support.

- **Moodle** (Modular Object-Oriented Dynamic Learning Environment) was first released in 2002. It is an open source program used by FAS, the Faculty of Engineering and Applied Sciences, and the School of Graduate Studies. In Fall 2011, there were 1400 active academic course sections in Moodle, though

about 1/3 of these were considered highly active users of Moodle. Between Sept. 2011 and Mar. 2012 there were 20,000+ unique users logged in, 3,000,000 logins, and 24,000,000 actions taken.

- **D2L** (Desire 2 Learn) began in 1999 out of a Waterloo company. It is currently used by both the Queen's School of Business and the Faculty of Education, who have purchased a "hosted" LMS option, which entitles users to comprehensive support, including a 24/7 help desk.
- **MEdTech Central** is an LMS and curriculum management system developed at Queen's in the School of Medicine. Its developers partnered with the University of Calgary to create **Entrada**, an open source version of the resource. More recently, customized versions of Entrada have been implemented for the School of Nursing (**SONIT**) and School of Rehabilitation Therapy (**Rehab Central**). The three versions function largely independently; however it is possible to connect students from all three Schools via the Communities social networking feature of the LMS, which can be used to facilitate inter-professional educational activities.

The LMS plays a central role in course delivery, integrating the various elements of a course, acting as the interface with the student, and presenting instructors with a range of tools that enable use of online teaching activities. Within a given academic unit, most students would expect to encounter a single LMS. Their general familiarity with the LMS increases with experience. Some students are exposed to different LMS's over the course of their academic experience at Queen's. The extent to which this causes a burden on individual students is unclear.

In our research, it became clear that the LMS platforms differ widely in their ability to meet the needs of instructors. Medtech Central appears to be meeting most of the demands of their users, although some faculty using SONIT and RehabCentral did report having problems with functions in the system. Problems reported included a significant learning curve for new faculty, time-consuming data entry when administrative support is not available, and technical glitches. Faculty members questioned did report that both the system and the support provided have improved considerably since it was adopted in their respective departments. Desire2Learn was also seen in a positive light and the company that operates D2L offers a help desk that is available 24/7 to assist faculty and students in overcoming technical problems. Satisfaction with these LMS's seemed to be directly related to the existence of a robust support infrastructure to assist both faculty and students.

Moodle, in contrast, currently falls short of requirements for users within FAS. Users report that it is difficult to use, cumbersome, and time-consuming to learn. Though some users have had success in solving problems using the Moodle help line and other ITS Moodle experts, the more common complaint was about a lack of support. There were also problems with incompatibilities with other software such as Peoplesoft. A number of specific limitations were reported, such as the ability to incorporate video clips, and certain types of exam questions. In many cases, features within Moodle's capabilities can only be implemented by Moodle staff. Users also found it difficult to find and use Moodle documentation to solve problems. ITS is certainly aware of these issues and, as is reported later in this section, is undertaking a review of its approach to supporting use of Moodle. Whether the better solution is a change in LMS or by a greater investment in Moodle support is a question that is beyond the expertise of the SAPTF.

Support for Course Development

Of the main academic units on campus, the best integrative approach to online learning occurs in the School of Medicine. The unit has decided that online teaching is essential in achieving its goals for teaching and learning. There are dedicated web developers for undergraduate medicine, postgraduate medicine, rehab/nursing and continuing professional development. Some of them are full time, some part time, and some are on limited contract. They are involved in larger projects that are commissioned or requested by one of those units, and tend to be controlled in that fashion rather than on a departmental basis because the control of their educational programs is centralized. There are regular meetings between the MedTech manager and the Undergraduate and Postgraduate Deans and Directors and support staff to determine development priorities. The MedTech unit includes one web developer with a primary job description of assisting faculty in the development and use of online tools and other technology, such as clickers. There is also an informal network of interested faculty who have been successful in using technological tools who provide other faculty with peer support. Bracken Library has an informatics librarian who assists in finding images and/or electronic learning resources for teachers who inquire. They also have three educational developers within the undergraduate School of Medicine and two in the postgraduate School of Medicine who may provide pedagogical support, with a focus on the design of the instructional material and any embedded assessment.

The School of Medicine is able to customize the LMS to its needs, developed to help it meet curricular and accreditation goals. Curriculum management is facilitated through the generation of reports, which assist in curricular review and generation of quality assurance and accreditation related data. The curriculum mapping feature integrates with the faculty member annual report system, allowing automatic insertion of faculty teaching activities into their annual report. In the Faculty of Health Sciences, the social networking "Communities" feature allows virtual collaboration between learners from the different schools facilitating interprofessional education; this feature can also be used flexibly to develop teaching resources, allow student generated content, support committees or develop virtual patient cases.

As a contrast to the integrated, managed, and comprehensive program in the School of Medicine, there is FAS. There are many success stories within the Faculty, which for the most part have arisen as a result of the initiative of individuals, usually in collaboration with support from the University's Centre for Teaching and Learning (CTL), and the FAS Continuing and Distance Studies (CDS) and/or Blended Learning Initiative (BLI). The lack of coherent, broadly accepted policies is a natural by-product of the diversity within the Faculty. Indeed, the intensity of debate around the issue of online education reflects the diversity of opinion and experience in teaching and learning. Without consensus on the teaching and learning goals across the Faculty, which is feasible in professional schools such as Medicine, it is not surprising there is also no consensus on the process to achieve the goals. Thus, the ability of support infrastructure to facilitate course development and delivery is bound to face diverse challenges. Despite these challenges, the SAPTF concludes that FAS forays into online learning will continue to meet resistance from faculty members who may be motivated to adopt innovative technology, but are discouraged from doing so because of insufficient technical support. By rethinking the way the technical

support network is designed, improvements will encourage more faculty to use tools they may find beneficial to their teaching.

Though the individual support units have their successes, the decentralization of these services was a problem identified in the input we received. In our survey, it became clear that many of the units that play a vital role in online support for some faculty, such as the Library, Copyright Advisory Office, and Emerging Technology Center, are entirely ignored by other faculty. A frequent question was related to the role for CTL in the discussion of support for online teaching. CTL has made many important contributions to specific courses through its Grants program[26]. Perusal of their grant history shows a great many courses that have been developed in conjunction with CTL, many of which employ well constructed online components. However, many of our discussions led to questions about why there was a division between the teaching and learning oriented CTL, and the technical support provided through ITS. It seems clear to the SAPTF that there is a missed opportunity for better synergy between these units.

This section focuses on the ways to improve support for online technology. Though we believe that improvements will enable faculty to make better use of the technology, we must also note that many faculty are resistant to online teaching technologies because they believe they occur at a detriment to learning. Obviously, faculty should be free to adopt the pedagogical approaches they find to be most effective in their teaching; however it is also worth encouraging faculty to use evidence-based choices.

What Can Queen's Do To Better Assist Instructors In Using Online Learning?

Overall, the main technology and support challenges facing instructors in regards to online learning are: the time needed to develop, prepare, and teach blended and online courses; competency in using the LMS and other technology; a lack of support at all levels for online learning; and the costs for hardware, software, training, IT support, and evaluation of online learning. Specific suggestions included:

- More dedicated support staff to set up and maintain online material, including technology specialists, instructional designers, and educational developers at all levels (department, faculty/unit, and university-wide [CTL, ITS, Library, CDS, and senior administration])
- Better coordination and strategic planning of online learning initiatives across the University
- Moodle (and other learning management systems): improved reliability and ease of use, LMS hotline for 24/7 response, more workshops for training and troubleshooting
- Better equipped classrooms (sound, IVC, LMS live, document cameras)
- More effective CTL resources for online teaching, e.g. CTL staff who can partner with faculty to help them incorporate online learning
- University licenses and training sessions for software such as Adobe Connect/Captivate, Cisco Webex, Camtasia, Elluminate
- Better communication and resource sharing amongst online instructors, the use of knowledgeable instructors to help others, and creation of best practice guides for online learning
- More recognition from University administration for those successfully using online learning, and more Administration support for online learning

[26] http://queensu.ca/ctl/grants/enhancement.html

- More training for students in how to learn online, starting before first year. This means better use of the Student Academic Success Services and the Queen`s Learning Commons.

There is considerable disagreement, even within the SAPTF, about whether there should be more departmental autonomy in developing and delivering online courses, and more flexibility from CDS in working with FAS departments who wish to develop online courses. On one hand, there are many benefits to having a unit, such as CDS, become specialized in the mechanics of development and delivery of online courses. A theme that we develop later in this report is whether there should be a clear option for a department that wishes to go its own way with online teaching,

On the Role of the Centre for Teaching and Learning

CTL is a university unit that promotes the use of evidence-based pedagogical approaches. They provide individualized consultation to the Queen's community, based upon informed evidence-based practice and intimate knowledge of Queen's-specific teaching and learning issues. Their Educational Developers spend approximately 15% of their time conducting consultations. In addition to consultations, the CTL offers various programs and services[27] They also serve on a variety of faculty and university-wide committees that focus or touch on online learning and virtualization. They are also heavily involved in the Quality Assurance process at Queen's at program, Faculty, and institutional levels. They have sponsored an annual grant competition for projects that seek to enhance teaching and learning with the priorities advertised as follows[28]:

> *The Centre for Teaching and Learning (CTL) welcomes submissions for the Teaching and Learning Enhancement Grants each fall. Grants fund innovative research projects that focus on aspects of teaching in higher education. Project could include, but are not limited to, course or program design, assessment techniques, teaching strategies, technology, or ideas for the creation of new active learning opportunities aimed at increasing student engagement.*

As has been emphasized elsewhere, modern efforts to promote teaching and learning do not necessarily involve online technology. A perusal of many of the successful awards since 2007 indicates that many do take advantage of online technologies. Working in conjunction with ITS, CTL promoted the adoption of lecture-capture infrastructure to enable teachers to record lectures and provide them to students as a resource.

Many comments identified CTL as a logical place to go for help with online teaching. For example, the CTL could support online learning by providing targeted professional development in online learning for instructors or perhaps sessions on facilitation of online discussions. We understand why they are not focused on the technology, but it seems that more could be done to promote effective use of online technologies in teaching. We reiterate here that CTL seems to be an important part of the teaching support services, but that opportunities for synergy are diminished because of lack of centralization of CTL, ITS, and other entities that support online teaching.

[27] http://queensu.ca/ctl/ps.html
[28] http://queensu.ca/ctl/grants/enhancement.html

Discussions with ITS

The SAPTF recognized that there were many problems with the way ITS was able to support online learning technologies. By far the most common complaint in relation to online learning was inadequacy in formal support, with ITS and Moodle identified as weak links. It seems clear that there is much room for improvement in Moodle, and there is a clear need for a greater investment in support.

The development of this report has coincided with initiatives launched within ITS to change the way that they offer services within the university. Their ongoing review process has generated a series of recommendations in relation to online learning. Each of the recommendations from CIO Wandschneider, found below, is consistent with positions that the SAPTF has advocated.

> ***Develop a Queen's educational technology strategy****: The University needs to develop an educational technology strategy prior to making further significant investments in the area. The strategy sets clear goals for the purpose and use of teaching and learning technology.*
>
> ***Learn from areas of educational technology excellence across campus:*** *Specific areas in Queen's, such as the business school, provide world-class online teaching and learning. The creation of their distance education environment did not happen overnight. The school made strategic decisions over 20 years ago to change the fundamental nature of its programs like the MBA. Some of their decisions, such as moving from a public to private funding model, may be impossible to replicate. But their original decision to deregulate led to remarkable technological innovations throughout the school. Some radical choices made two decades ago continue to deliver benefits today.*
>
> *Determining a strategy for the future of online learning at Queen's could learn from the business school approach. When pondering the future of online learning technology, the University should first decide its strategic intent, and then build the appropriate technology to support the agreed upon direction.*
>
> ***Develop a learning management system strategy for Queen's:*** *The University needs to develop a cohesive learning management system (LMS) strategy. This strategy does not necessarily mean there will be only one LMS on campus, but it should recommend a single preferred LMS and explicitly define the circumstances for exceptions. The strategy must provide for optimal learner experience, maximized pedagogical impact, and seamless integration across the enterprise.*
>
> ***Use analytics to improve learning outcomes:*** *ITS has potential to collect data from systems such as Moodle to better understand how to use those systems to improve learning outcomes. For example, ITS could use Moodle analytics to improve courses from year-to-year based on examining the features students use the most in the system. Usage data and analytics can be shared to help all faculties improve their use of teaching tools.*
>
> ***Integrate Moodle training with pedagogical training:*** *The ITS Moodle training process should focus on pedagogical insight into how to use Moodle for pedagogical improvements, not just general purpose Moodle training. In this approach, data analytics can be emphasized to deliver better*

learning outcomes. ITS may want to merge its Moodle training into course offerings from the Centre for Teaching and Learning to improve integrated learning of the tool.

Improve Moodle support: *Moodle is a popular LMS around the world, and there are opportunities to invest in the system to improve its value on campus. Because it is a strategic service, investigate opportunities to leverage Moodle's open source capabilities through the implementation of plug-ins that could improve many features such as the user interface. ITS also needs to improve Moodle support with skilled staff.*

Create a unified point of contact for online learning at the University: *As the above recommendations are implemented, it will become easier to create a single point of contact for online learning at Queen's. In the interim, ITS should review its current teaching and learning support model and consider opportunities to integrate more closely with the Centre for Teaching and Learning. This step could be the first phase in moving the next recommendation.*

Create a contact hub for teaching and learning support: *The existing centralized call centre is great for simple problems, but users do not like going there for more complex issues. Multiple support areas such as the help desk, Moodle support, and CTL are physically separate today, and they can be hard to find (all are located in basements). The University should create a one-stop hub for all support needs. Find a central location such as the Library and incorporate the teaching and learning centre for pedagogical needs, the Moodle support team for systems support, and the IT help desk for baseline technical needs. The new hub should be located in an open and welcoming space that is central and easy to find. A one-stop shop physical location for all teaching and learning needs would provide blended learning support in a cohesive manner.*

Develop a business case for investing in classroom and lecture capture technology: *A project should be launched to review current classroom technology. The project should assess the costs of upgrading the classroom control systems to more intuitive systems and evaluate moving from analog to digital technology. The project should also assess potential changes to the lecture capture technology to improve camera mobility, resolution quality, and lighting issues. As part of the process, ensure greater engagement of the teaching community in design of the new environment.*

We do note that many of the comments received expressed great frustration with Moodle specifically. In evaluating options, presumably the administration will consider whether it is in the long term interests of Queen`s to replace Moodle with another LMS. The SAPTF does not feel that it has the expertise or experience to comment on the various alternative models under consideration.

SAPTF Recommendations on Technology and Support

The SAPTF recognizes many of the examples of successful online teaching and learning within the university coincide with effective management of resources (teaching support, IT support, strategic planning).

6. Queen's should explore ways in which the various pedagogical and technical support units can reorganize to support online learning more effectively.

Many respondents noted the incongruity in a separation of Information Technologies Services (ITS) and the Centre for Teaching and Learning (CTL). We would add to this list other groups that have a role to play in online teaching and learning, such as Continuing and Distance Studies, the Library, the Copyright Advisory Office and the various student-oriented support groups. We would encourage the administration to continue efforts to promote greater cooperation and collaboration between the entities with a stake in online learning, particularly CTL and ITS.

7. Queen`s should establish mechanisms to enable synergistic interactions between faculty and staff who have gained expertise in online learning.

Some of the robust discussion and dissent that arose in this process can be linked in some way to failure to communicate the merits of different pedagogical approaches and the opportunities afforded through online tools. For example, the rich literature associated with online learning and pedagogy can certainly be uncovered by anyone with an interest in the area, but we found it surprising that no single entity had the responsibility of communicating and promoting recent research in teaching technologies at Queen's. Advocates of online learning elsewhere, such as Contact North, do a very good job of advertising success stories in online education, including our own courses. Our CTL distributes regular newsletters oriented around pedagogy, and though many of the stories feature online tools, their mandate is focused on pedagogy rather than technology. However, we lack a well organized group that can readily share ideas, problems, and solutions for online learning.

8. Queen's should place a high priority on improving support at all levels (financial, technical, pedagogical, accessibility, accommodation) to make the most of use of online teaching tools.

A common theme in our discussions with Queen's instructors was that they lacked the time, money, and support to properly develop and teach blended and online courses. The SAPTF believes that more resources need to be assigned to online learning at Queen's, including technical support (assistance with LMS and other technology), pedagogical support (instructional designers and educational developers), and money (for hardware, software, training, support, and evaluation of online learning). This support is needed at all administrative levels (departmental, faculty/unit, and university-wide). Furthermore, any rapid advances in development of online technologies must ensure that students with accessibility challenges are fully accommodated.

9. Queen's should ensure that the online learning environment is inclusive and fully accessible for students with disabilities.

In the online learning environment, access barriers for students with disabilities can be significant. In particular, students with visual disabilities and students who are deaf or hard of hearing can face many challenges. Formats like image PDFs, multimedia resources that are not captioned or transcribed into text, inaccessible websites, inaccessible learning platforms, etc. all cause barriers for students with disabilities. In addition, accessibility standards do not always go far enough in ensuring that all students can access and use course materials. Recognizing the need for inclusivity and accessibility will help ensure that students will have the tools they need to thrive in the online learning environment.

Part IV: Quality Assurance in Online Teaching

Questions about evaluation of quality in online courses

A number of questions have been raised that related to the oversight of online courses, from requests for proposals for courses, to new course development, course modification, and mechanisms for regularized review. It is worth noting that in some faculties, there is no formal mechanism to ensure that ongoing traditional courses meet any Faculty standards whatsoever, and the specific details of the course, such as mode of instruction, do not reach institutional eyes until a submission to the Curriculum Committee is made for a formal change. In those units with concerns about accreditation, there is greater institutional oversight of course quality.

Though outside the mandate of the SAPTF, we believe that a regular review of all courses is a sensible policy, and note that recent discussions at the Ministry level suggest that such requirements may be in our future. A common theme that arose in our discussion was the potential for online resources to be used to formalize and unify approaches to communicating important course elements, such as Learning Objectives and Undergraduate Degree Level Expectations (UDLEs)[29].

Throughout this process, we have strived to gain input from the Faculties and Schools outside FAS, but the discussions about course quality have revolved around FAS.

Evaluating the Effectiveness of Online Learning at Queen's

In exploring the mechanisms used to ensure course quality, we sought answers to a number of questions. Though we gained some information, what seems to be missing is a consolidated effort to ensure that FAS departments are adhering to defined standards. It is our understanding that the FAS Faculty Board is undertaking a review of practices across departments, with a report that coincides with our own activities. Clarification may be possible in preparation of our final draft of this report.

- **Who establishes the quality standards in the design phase of online courses?** Online courses more so than traditional courses present to the world an image of Queen's University, and it behooves all involved to ensure that quality standards are met. Within FAS, the consolidation of development of online courses lies with CDS. They have a transparent approach to course design requirements, and make efforts to ensure that new and existing courses meet these criteria. Departments have an important role in overseeing online course quality, but the way in which they execute this responsibility differs widely amongst courses and departments.
- **Are efforts made to promote a sound pedagogical research approach in evaluating the effectiveness of online learning?** Frankly, few of our courses, regardless of format, undertake formal, evidence-based approaches to assessing effectiveness of learning. Obviously faculty members are concerned about the quality of their courses and make efforts to try to improve them to meet

[29] http://www.queensu.ca/ctl/resources/topicspecific/quqaps/expectations.html

shortcomings identified by various mechanisms. Our point is that relatively few measure "deep-learning" or long-term retention.

- **What metrics does an instructor, department or course designer use to assess whether the approaches used in online courses are successful?** Currently there are no agreed upon objective metrics for evaluating the effectiveness of online courses. We therefore asked whether a deliberate program evaluation process should be mandated (and centrally supported) for all courses on a scheduled basis to ensure fidelity. Where course variants exist, as with online courses with face-to-face equivalents, it is not easy to assess whether the variants meet their expectations established by the face-to-face equivalent. It is too simplistic to assess whether grades are the same in both versions, unless some effort is made to harmonize the evaluations. A recent report from Columbia University (Smith Jaggars, 2012) identifies a growing gap in performance between traditional and online courses. There is a greater percentage of students who fail to complete a course, and evidence of a phenomenon known as grade slip, where students achieve lower grades in online courses. Though their study discussed the situation in US community colleges, it identifies a potential risk that should be evaluated. These same concerns could apply to specific online courses at Queen`s, or our online curriculum in general and should be monitored. It is also feasible for a department to use performance in a subsequent course to assess whether residential and online courses prepare the students equivalently. Such analyses need to take into account potential confounding factors, such as the differences in profiles of students taking residential versus online courses. Where deficiencies are noted, the weaker course variant could be targeted for improvements.
- **How is student opinion of course quality assessed in online courses?** USATs, used as measures of student satisfaction, are the result of negotiations between QUFA and the University, but the questions are not well suited to online courses. CDS has investigated and is now adopting a more appropriate tool for courses with online components, and we understand that the use of this assessment tool is currently the subject of discussions between FAS and QUFA.
- **How well is the online course integrated into the program?** Though FAS may operate online courses through CDS, the courses all have course numbers associated with a specific department. What is largely unknown is the extent to which departments take an active role in monitoring the content and delivery of their online courses, and their role in undergraduate programs. It is our understanding the FAS is currently polling departments to assess how each unit goes about evaluating and managing course variants. This is certainly a valuable exercise, and our feedback suggests the policies vary widely amongst FAS departments.
- **What efforts are made to ensure that course variants use the same learning objectives and achieve the same learning outcomes?** At this point, the university has no requirement for courses to identify and assess learning outcomes. CDS and BLI both require learning objectives as online course elements. The utility of formalized learning objectives is itself questioned by some faculty members and the choice about whether to use such a pedagogical framework currently depends on the individual, and thus there would be no systematic way to assess whether the variants are similarly designed. Thus, there is no expectation that residential and online courses could currently be assessed by comparing specific learning objectives or outcomes.

- **Is the appropriate support in place to ensure that the best available online tools are incorporated into the course?** Though Business, Health Sciences and Education seem to have reached an appropriate level of support for learning technologies, Arts and Sciences seems to fall somewhat short of expectations of the faculty who use the tools. This manifests as shortfall in ITS support for its LMS (Moodle) and inadequate capabilities or effectiveness in promoting the online tools that can facilitate teaching and learning.

Quality Control in Queen's Courses

The Senate Committee on Academic Procedures (SCAP) produces the guidelines that are used to ensure that the curriculum meets University standards. The mechanisms used by each unit are left to the Faculty. During the activities of our committee, several other committees have been evaluating practices that have some bearing on online courses. In the February meeting of Senate, SCAP responded to a request to consider the issue of "course variants". The response from SCAP rejected suggestions to distinguish between courses based upon mode of instruction, and deferred to the Faculty for decisions about mechanisms to review specific courses.

In the December meeting of FAS Faculty Board, a motion to require curriculum committee approval for all 'course variants' was referred to the Curriculum Committee. At the time of preparation of this report, no recommendations have been made.

The Faculty of Arts and Sciences uses a Curriculum Committee structure to approve changes in courses as well as vet and approve new courses. Its Terms of Reference[30] are listed below (**emphasis added**).

i) to consider and make recommendations upon such matters as are referred to it;
ii) to examine programs of instruction, degree programs, interdisciplinary studies and ***methods of instruction****, and to make appropriate recommendations to the Faculty Board;*
iii) to study proposals and to advise departments on proposals for new concentrations or programs referred to it by the Faculty Board under By-Law 1, 10 (ii); and to report to the Faculty Board, for approval, its recommendation on these proposals in time for inclusion in the Calendar of the Faculty of Arts and Science.
iv) to approve changes in structure and course offerings within existing concentrations or programs submitted to the committee from the department(s) concerned and to report this action to the Faculty Board for ratification before the changes are implemented within the department concerned.
v) to approve changes in courses offered outside of existing concentrations submitted to the committee from the department concerned and to report these to the Faculty Board for ratification before they are implemented within the department concerned;
vi) to study and advise upon problems of inter-faculty instruction, and to confer with the Curriculum Committees of other Faculties;

[30] http://www.queensu.ca/artsci/sites/default/files/Revised_By-Laws_August2005_0.pdf

vii) to examine and advise upon the academic implications of programs and regulations initiated outside the University.

On the surface, it is not entirely clear if point ii (i.e., methods of instruction) is intended to cover review of individual courses. We understand that existing practice is predicated on the position that there is insufficient expertise and/or capacity on the Curriculum Committee to assess online courses. The FAS Curriculum Committee is undertaking a review of its approaches with review of "course variants". The SAPTF sees our report as an opportunity to make recommendations for their consideration in assessing their practices in course review. We emphasize that we see no reason to distinguish courses based upon the mode of instruction, and that if the goal of a course review process is to ensure quality, that standards should be applied equally to courses, independent of mode of delivery.

Directed Survey

Part of our investigation into quality assurance processes at Queen's consisted of identifying and interviewing a number of individuals involved in Quality Assurance across campus. These informants were Brian Frank, Sheila Pinchin, Andrea Winthrop, Shannon Goodspeed, Wanda Beyer, Corinne Laverty, Doug Reid, Elspeth Murray, Eric Leblanc, and Brenda Ravenscroft. A great deal of the vibrant discussion of online learning at Senate revolves around issues faced primarily by Arts and Sciences. One goal of this survey is to expand the discussion to include other units in an effort to understand the range of approaches employed throughout the university. Questions asked covered the following topics:

- the approval process for new courses;
- the level of support offered to faculty when developing new courses;
- the quality assurance and review processes for courses currently being offered;
- problems and solutions with quality assurance processes currently in place;
- factors the task force should consider for determining best practices in quality assurance of courses at Queen's.

In our responses, themes started to emerge around three different types (or categories) of course offerings at Queen's. This survey was not designed to be exhaustive, so some departments or types of courses may not be represented in these results. The three different categories that were identified were:

1. Regular courses, which includes both online and face-to-face.
2. Course offerings that have external accreditation requirements.
3. Online courses offered through organized initiatives (Continuing and Distance Studies).

Development of courses with online teaching elements

1. Face-to-face courses generally have to be approved by a committee made up of faculty representatives or specialists in different areas.

- Commerce and business courses are submitted to an “area group” composed of faculty that specialize in the different subject areas represented in the course and have an interest in content and pedagogy. Faculty must also present their new courses to a faculty forum for discussion and a vote. The forum includes both students and faculty.
- For Bachelor of Education courses, faculty complete course templates that require the inclusion of expectations identified by the Ontario College of Teachers.
- Arts and Science courses are first approved by their home department and then sent to a Faculty Board Curriculum Committee, which consists of the Associate Dean (Studies), faculty members and students representing different areas of the Faculty (humanities, social and natural sciences). All courses are then sent for final approval to the Faculty Board.

Respondents from this category also reported that there is no formal support structure for faculty when they are developing courses. Informal developmental support generally came from colleagues in similar areas or from services provided through the Centre for Teaching and Learning, with technology support coming through IT Services, when available. Blended courses within the BLI have their own instructional design and IT support.

2. Courses with External Accreditation Requirements have more comprehensive and structured approval processes. These processes are either in addition or as a replacement to those listed above for the traditional style courses.

- Continuing Teacher Education courses must have courses approved through the Ontario College of Teachers (OCT) in advance of the course offering. Courses are designed using a course template that lists all learning activities and the corresponding OCT expectations. These expectations are then submitted to the OCT for approval.
- The Applied Sciences have a four-year sequence of engineering design and practice courses that are designed by committee with representation from all engineering departments and the faculty office. For these core courses, Applied Science and Engineering departments have identified core competencies, mapped them onto the curriculum and assess them regularly.
- Teachers in the School of Medicine are provided with support for course development. Course Directors work in concert with Year Directors and Competency Leads, constructing their course based on curricular objectives and mandatory patient presentations assigned by the Curriculum Committee. There is also an educational team, consisting of two educational developers, an assessment and evaluation consultant, an informatics librarian and a web developer who may assist as appropriate. Both educational developers have experience in online learning. Courses are reviewed regularly to ensure that they meet standards for instructional design and assessment that have been established by the Teaching and Learning and Student Assessment Committees.
- In the MBA programs, specific course approval is carried out by program specific curriculum committees and then sent to the Queen’s School of Business Faculty Forum for discussion and Faculty Board for approval.

3. Courses offered through organized initiatives. Continuing and Distance Studies provided us with a guiding document on their Quality Assurance processes (**Appendix 5**). Decisions related to what courses will be offered through CDS are made jointly by CDS and the relevant Academic Departments. CDS then sets the standards for the course, and provides support for development. Development is a team effort, with the faculty member, an instructional designer and CDS occupying different roles in the development process. Finally, before the course is delivered, the department reviews and approves the content of the course. These courses are currently treated as variants of face-to-face versions that have received approval via the FAS Curriculum Committee. As noted elsewhere, the FAS policy on such courses in currently under review.

Delivery of courses and ongoing quality assurance

Departments have diverse mechanisms to explore quality of regular courses, though the mechanisms differ widely between units.

1. Regular courses are evaluated regularly through USATs, developed in conjunction with QUFA. Individual faculty members may supplement this with mechanisms for ongoing quality assurance, including user-selected USAT questions and the use of peer reviews. While these courses did not report a formal process for continuous quality improvement, courses may be reviewed in cases where complaints had been made or when the course received low USAT scores. Blended courses within BLI are also evaluated using the CLASSE and revised SPQ questionnaires. The former measures student engagement and the latter, a student's approach to studying (superficial vs. deep). Engagement in particular has been found to be related to improved learning, and is explored continuously by the National Survey of Student Engagement (NSSE). [31]

2. Courses with External Accreditation Requirements have a variety of continuous quality improvement (CQI) processes.

Medicine has a robust system of reviewing, including student representatives that meet with course and year directors to provide feedback on new courses, as well as an annual schedule for course review determined by the Course and Faculty Review committee. Students also participate in focus groups, interviews and online student evaluations after the course has been completed.

Additional CQI processes employed by Medicine included self-reporting done by course directors, peer-reviews by committees, and objectives and standards set and evaluated by multiple committees and directors. Medical schools are also accredited by two external agencies, which require both internal reports and external visits and reports. Medicine also has a faculty member employed as the director of Accreditation and Quality Assurance.

Continuing Teacher Education courses are re-accredited on a schedule provided by the Ontario College of Teachers. They also have students complete an evaluation after each course.

[31] http://link.springer.com/chapter/10.1007/978-94-007-5836-0_2/fulltext.html#Sec11/

Applied Science and Engineering has an external group that visits every six years. This group examines courses, assignments, student work and grades. They are also phasing in requirements to look at learning outcomes, curriculum mapping, and data collected on student performance related to these outcomes.

The recent EMBA redesign initiative used a 'backward design' process informed by faculty who were pedagogical innovators. The program review committee included subject matter experts, a pedagogy informant, as well as team coach (a business professional who provides feedback to the Dean), IT staff and career director.

3. Courses offered through organized initiatives. Courses offered through Continuing and Distance Studies are reviewed at each offering through a questionnaire developed by CDS. It also conducts course reviews every three years, in partnership with the relevant department. CDS is exploring options for a reliable tool for student evaluation of courses. CDS is also reviewing how courses are reviewed, with the goal of formalizing the process and clarifying the roles of the department, instructor, CDS, instructional designer in the review process.

Suggestions and considerations

Some units have formalized quality assurance processes in place with regular review of course content and quality, defined in relation to agreed upon curricular mission and organizational goals. The major problem with these processes identified by some of the informants was related to workload. Faculty are already overworked, so adding quality assurance processes without increasing resources is a challenge.

We also received comments and concerns related to the quality of the student evaluations (USATs) as well as the inability to receive data in a form that is useful for faculty wanting to revise their courses.

Other suggestions/considerations included:

- A mapping or scaffolding mechanism/template that helps instructors design and organize learning outcomes in courses;
- A focus on integrating inquiry based models and interactive online learning rather than a reliance on required readings and lectures embedded directly into online courses;
- Mechanisms for integrating basic competencies across the curriculum, as well as more tools and coordination for "putting all the pieces together";
- More involvement of students in the developmental stages of courses, as well as in key points during the course;
- More opportunities for ongoing professional development.
- More access to quality data (in useful forms such as reports) that could inform teaching and course design,
- Universal student evaluations that are of higher quality than the USATs (Medicine reported having to develop additional tools for this purpose as has CDS),

- More support for students transitioning into different forms of learning (from online learning to in class learning, and back out again),
- Encourage collaboration among current course providers at Queen's (School of Business, Education, Medicine etc.).

Faculty Survey

The SAPTF distributed an online survey designed to gather information about existing quality improvement practices across the university as well as opinions about how best to ensure quality in traditional, blended and online courses. There were 193 respondents, who were predominantly in Arts and Science (65%) and Health Sciences (16%) with a few from each of Applied Science (6%), Business (4%), Law (3%), Education (2%) and other (4%).

Shortly after the survey was posted, there were concerns raised about bias, some of which can be viewed on the SAPTF website. Several people were critical of the design of the survey and their concerns centered on bias and the lack of definition of "blended". One source of disagreement was the utility of the various applications of the termed `Blended Learning`. The FAS Blended Learning Initiative describes their approach to promoting the blending of traditional courses, which includes as a requirement the need to reduce the numbers of face-to-face hours. We reject the notion that the definition need apply to the university as a whole or the APTF. However, as we have stated earlier, in this survey we avoided defining "blended" in specific terms and chose instead to use it in its broad sense to refer to learning that incorporates the use of both face-to-face and online delivery of learning objects such as course material, assignments and quizzes.

It became clear during this process that we need to clarify our terminology across the university and to ensure that instructors feel comfortable (or are given the support necessary to become comfortable) using whatever combination of approaches they deem best to support their students' learning. Approaches in this case might include lectures, tutorial discussions, small-group activities, podcasts, vodcasts, online interactivities, community service and wet labs. These would require resources such as different types of space, technology, TAs, undergraduate mentors and community partners.

We provide more detailed analyses of the survey in **Appendix 6**, but in recognition of concerns expressed about the nature of the survey, we provide only general conclusions in this report.

Comments on the review practices for courses in relation to online learning

Course approval: A majority of respondents agreed that Faculty level approval should be required when a traditional course is blended by introducing online activities and when a residential (face-to-face or blended) course becomes fully online. Currently, approval is carried out using student satisfaction measures and, in many cases, courses are also peer reviewed by a curriculum or other committee.

Course review: The majority of respondents supported some form of cyclical review of both traditional and blended courses. Among the anecdotal comments the most common was that blended and online courses should be reviewed and monitored very closely and frequently when first designed because

they are new and unknown. Once established, this review could be less often, perhaps taking place with the same frequency as traditional courses.

Some also expressed concern that a review process could become a fruitless exercise and bureaucratically very cumbersome. This theme of balancing the frequency of review with the workload it creates, emerged from our meeting with some of the accredited programs as well.

For all courses (traditional, blended, and fully online), respondents endorsed review by undergraduate committee in the department or unit most often, followed by curriculum committee at the Faculty/School level.

A majority of respondents were satisfied with their current approval and review process for traditional and blended courses. About one quarter of respondents expressed dissatisfaction with their approval and review processes. Of those who were not satisfied, the most common themes were that the process is too arduous, that courses are not reviewed often enough, and that the process was perceived as Faculty interference in department business.

For online courses, there was a different response: only half of the respondents were familiar with the process and, of these, the majority expressed dissatisfaction with the approval and review process. Reasons for dissatisfaction were a concern that Curriculum Committees (either at the department or Faculty level) were not involved with the decision to offer a course in a fully online version and a tension between the department which is responsible for the content and CDS, which is responsible for the delivery of such courses in FAS.

Learning management systems: A majority of respondents were in favour of using an LMS with embedded course design elements encouraging good course educational practices (e.g., defining objectives, linking objectives to assessment, etc.). The main message from those providing anecdotal comments is that such a system, while potentially valuable, may not be flexible enough to work in all cases or may prove cumbersome and thus should be “available but not mandated”.

Role of online activities: Of those respondents who incorporate online activities into their courses, the main reason to do so were to divert content selectively, promote active learning, use web based resources designed for individual use and replace lecture-based instruction for pedagogical reasons. Of those who chose to divert content selectively, the main reason was to put basic background material online, allowing the instructor to focus upon more challenging content in class. Another frequently endorsed reason was to free up contact time for small-group, active learning.

Support for developing new online resources: When asked to identify the people or units that provide support, the respondents identified colleagues as the most helpful resource, whether adding online resources to a course, or developing a new online course. It is evident that existing support is neither centralized nor exploited, as most respondents reported relying on informal help from a colleague. The need for greater support has been identified by our informants as well and, in the FAS, in order for the

Blended Learning Initiative to be realized, instructors were being provided with dedicated instructional developers and IT personnel to navigate course design and implementation.

Recommendations for Quality Assurance Processes in Relation to Online Learning

Our mandate was to assess online teaching at Queen's but we found that many of the questions raised about online teaching were impossible to disentangle from questions about quality assurance in courses in general. It is the position of the SAPTF that regardless of medium, courses should be evaluated when developed and reviewed periodically. We reiterate that to distinguish between courses based on mode of delivery seems arbitrary. Departments should be provided with the tools, information, and teaching and learning support necessary for effective development and review. Whether formal policies should exist is a matter of dispute, but the approach adopted by units should not distinguish between courses based on mode of delivery.

The changing landscape of quality assurance processes

The processes involved in course approval and review differs widely amongst the Faculties. In general, there is more of a structural framework for programs associated with professional schools and those that have external accreditation. The process employed by FAS is less structured and has recently garnered attention for the way it approaches review of course variants, such as online alternatives to traditional courses. On one hand, it is common to have courses that have not come to the attention of the Curriculum Committee for decades, and it is feasible that over time changes have occurred that remove any similarity between the original and current formats. However, courses that alter the balance of face-to-face and online teaching/ learning attract greater scrutiny (if brought to the Curriculum Committee) or criticism about insufficient vetting (if not brought to the Curriculum Committee). The best available meta-analysis (Means *et al.,* 2010) suggests that online teaching approaches are at least as good as face-to-face approaches. Courses that use this guidance to adopt tools that evidence-based research shows are superior should not suffer a greater administrative burden than a regular course that has not been updated in many years.

The influx of alternate teaching modes has challenged the Curriculum Committee in ways that lead us to question if the current approach is adequate or sustainable. The FAS committee is undertaking a survey of practices by departments, and our consultations lead us to expect that their input will reveal remarkable diversity in existing practices. Superimposed upon the existing culture are possible impending changes arising from the Queen's University Quality Assurance Processes (QUQAP)[32]. The QUQAP review protocol replaces the former internal academic review (IAR) processes and the OCAV Undergraduate Program Review Audit Committee (UPRAC). The protocol defines expectations for quality in undergraduate programs, but has not yet been applied to quality assurance of individual courses.

[32] http://www.queensu.ca/sgs/facultystaff/quqap/QUQAPFinalApr28-11.pdf

Exploring quality assurance in online teaching

The SAPTF is in favour of rigorous reviews of courses, but we see no reason to hold courses to different standards based upon the mode of teaching. When considering course quality assurance in general, a number of questions emerge. The answers, however, depend on the appetite for the various units for change. As it is currently structured, it is difficult to find the expertise to thoroughly review the entire continuum of traditional, blended and online courses. Individual Faculties and Schools must decide the nature of course review. In FAS, the current committee is reviewing policies, presumably choosing between options that range from "tweaking" the existing framework, or grander changes that better position the committee to handle the breadth of courses. Whether or not a regular review of courses can be incorporated should be considered.

Discussions to date suggest that a subset of the faculty is deeply concerned that online teaching may not meet learning goals. Though we do not share these specific concerns about online teaching, we suggest that policies and practices that ensure course quality should be applied more generally to all courses. The following discussion offers suggestions for consideration if or when Curriculum Committees review their policies for course quality assurance. ***We recognize that it is a significant reimagining of the current course review process, but we believe that (i) course quality standards need to be applied equally regardless of teaching modes, and (ii) the current Curriculum Committee structure would be unable to manage the responsibilities because of the workload and profile of expertise. Perhaps it is time to explore whether the current curriculum committee structure could benefit from subcommittees, each with a specific focus in relation to review of courses and programs.***

What should the approval criteria be? Approval processes should focus on (i) how courses fit into the curriculum, (ii) clearly articulated learning objectives, (iii) how assessment maps onto the learning objectives, and (iv) whether learning activities are designed to meet learning objectives. The latter is where the use of different modalities and approaches will be described and their appropriateness for meeting the courses' objectives evaluated. For example, if online materials are to be used, what role do they play and has attention been paid to how they are designed? Conversely, if all of the structured learning activities take place in the lecture hall, is there any attention paid to promoting active learning and opportunities for frequent feedback?

If such a framework is adopted, there is no need to have separate criteria or procedures for face-to-face or blended or fully online courses (or any other course variant). This reflects what our informants told us, which is that all courses, regardless of delivery method or location, should be evaluated upon the same general criteria.

Who should review course quality? Approval should begin in the department and then go to a Faculty or School level Curriculum Committee which should include (among others) members chosen for their knowledge and expertise in (i) course and curriculum design (Centre For Teaching and Learning), (ii) the particular subject matter, (iii) cognate or related subject matter (faculty from depts. whose students may need or want to take the course), (iv) Educational Technology (LMS, webinars), (v) Faculty or School procedures (Timetabling, etc.), and (vi) library resources. Such a committee will have the expertise

necessary to evaluate courses based upon pedagogical principles, to determine whether the offering as described is feasible in terms of available resources, and to provide input about other resources or approaches that might further enhance the course. At present, both Business and Medicine incorporate information technology and instructional design personnel on their curriculum /program review committees but there is a general lack of such expertise currently in Arts and Science and Commerce. The current Curriculum Committee is overworked, and clearly changes need to be invoked. With an expansion of the responsibilities, it is perhaps reasonable to consider whether expert subcommittees are better suited to evaluate course submissions. For example, courses with a substantial online component may be sent to a subcommittee with expertise in pedagogy and technology.

When should review occur? Periodic formal reviews do not preclude departments or units from conducting interim reviews should they deem it appropriate (if concerns are raised) or necessary (for external accreditation purposes). In fact, in some of our accredited programs, annual review is required as part of a mandated Continuous Quality Improvement process. However, at a minimum across the University, we recommend two levels of review, Departmental (conducted every 3-5 years) and Faculty/School (every 8 years).

A 3 or 5 year review cycle is recommended for departmental review. This is based upon survey results and a concern raised by our informants and survey respondents that anything more frequent would unduly burden departments and Faculty/School offices and not allow enough time to implement and evaluate new course components or teaching strategies. Often the first year or two of a new course results in small changes as instructors adapt to their experience and feedback from students and colleagues.

The departmental level review would involve the instructor and departmental curriculum committee, with the possibility of recommending consultation with a course designer (or discipline specific educational developer). A brief summary of the review would be sent to the Faculty/School curriculum committee.

Such reviews could take into consideration the previous three years' students surveys as well as instructor and, where appropriate, area feedback. A SWOT-like analysis identifying strengths, weaknesses, opportunities for improvement and threats to sustainability could be used to guide this process with easy to complete forms for the instructor, educational developer, and curriculum committee. It would be useful to have some discussion about how success in learning should be measured.

This process would be designed to encourage instructors and departments to reflect upon and improve their courses and to identify further resources (e.g., classroom space) and training (e.g., video recording) needed. The use of structured questions should help make this workload more manageable.

A Faculty/School level review could take place every 8 years to align with the QUQAPs process required for external accreditation. This full review would involve the instructor, departmental curriculum committee, and faculty/school curriculum committee and could be aligned with QUQAPs reporting

requirements so that it could serve this purpose as well. Such reviews could take into consideration information such as learning outcome measures, engagement measures, student surveys, exit and alumni surveys, instructor feedback, and department feedback.

As with the department level review, a SWOT-like analysis identifying strengths, weaknesses, and opportunities for improvement and threats to sustainability could be used to guide this process with easy to complete forms for the instructor, department and Faculty/School curriculum committees. This process would be designed to encourage departments to reflect upon and improve their individual courses within the context of their overarching degree level expectations and to identify curriculum gaps (e.g., writing in first year) and possible solutions as well as support needed for specific courses.

Student Satisfaction is a necessary but not sufficient component of a course and curriculum evaluation process; this is because student satisfaction is not always associated with their learning (Wesp and Miele, 2008). Some of the informants that we met with during our consultations expressed dissatisfaction with the USAT and, in the case of Medicine and now Arts and Science for online courses, have developed or adopted a different instrument. Several years ago, the Teaching Assessment Committee piloted a new approach to gathering course satisfaction information prompted by dissatisfaction with the USAT. The report was submitted to the Joint Committee for the Administration of the Agreement (JCAA) in 2007. Despite an extensive pilot project and broad consultation, the new instrument was never adopted and it is our understanding that the QUFA did not approve it.

Based on several informants' dissatisfaction with the current USAT questionnaire as well as its limited relevance for blended and online courses, we recommend replacing it. There are some promising instruments that could be piloted in collaboration with the CTL. This may also be the time to investigate moving to online survey methods to reduce the class time required for data collection and the cost of using a paper and pencil format. If moving online were to be considered, the Office of Institutional Research and Planning (OIRP) may be able to suggest strategies to ensure a high response rate as well as a process to feedback these data to stakeholders.

Support should be provided for instructors for both developing, and maintaining courses. We recommend the following support structures (formal and informal):

- More structured and better access to educational developers, course designers, librarians and staff from IT Services; one stop shopping; a teaching support unit that includes all of the above services working together with each instructor
- A resource list of faculty and staff who are willing to be mentors or discipline/topic specific helpers.
- A set of tools and networks designed to encourage a more collaborative environment. Examples may include vehicles for sharing teaching practices, learning objects, samples and resources.

Support should also be provided for research focussed on:

- human learning and its application to multimedia design
- program evaluation to support Continuous Quality Improvement processes at the course and program level.

SAPTF Recommendations and Conclusions on Quality Assurance in Courses

Concurrent with this SAPTF process have been a number of discussions that relate to procedures and policies associated with approval of courses. We have focused our attention on the issues most relevant to online learning in its various forms, recognizing that the recommendations could be applied more broadly to other scenarios or course variants.

10 Courses adopting online technologies for delivery of content or facilitating particular styles of learning are unlikely to be demonstrably inferior to traditional alternatives.

Our recommendations follow from the position that it is ill advised to distinguish courses on the basis of the role played by technology. The inertia in the process is the assumption that what is currently employed in a course is the gold standard, and that changes from this approach are necessarily inferior. Instead of debating which variants or types of courses warrant approval and review, we recommend a standard approach for the approval and periodic review of all courses and course variants.

11. Curriculum Committees should be staffed adequately to assure that changes in the mode of teaching meet teaching and learning criteria.

Consistent with the recent position by SCAP, the SAPTF sees no basis for distinguishing between course variants that differ in the use of online learning approaches. Their position also noted the Curriculum Committees should have a role in establishing expectations for course review. The policies are currently under review in FAS, but it is the position of the SAPTF that such changes are best developed and reviewed by the departments offering the courses, but that a higher body needs to review the submission. A Curriculum Committee with the requisite expertise is in the best position to assure that course standards are met and meet program criteria. Perhaps an alternative model that incorporates subcommittees is a way to ensure that experts review the course and program submissions, without burdening every committee member with every application.

12. The Registrar should support the acquisition of comparative metrics to enable departments to identify potential problems in relation to student grades in online, blended and traditional face-to-face course variants.

The differences in the management of FAS online and face-to-face courses introduce an extra layer of administration that can make it more difficult to compare student performance in course variants. Comparative analysis of grades in course variants should inform departments if there are inherent problems with online courses in the context of their academic programs. However, any analyses must take into account the complex experimental variables that can play a role in performance, such as the different profile of students taking online and face-to-face courses.

13. Queen's should encourage the incorporation of evidence-based practices in developing courses, and using such changes to contribute to pedagogical research.

In discussions of online learning, including blended learning, the SAPTF believes that the best available evidence argues that active learning techniques do a better job of engaging students, and thus improve learning. In the context of course review, we suggest that if Queen's was primarily concerned about course quality, then we should redirect attention away from the technology and make efforts to ensure that course quality is optimized. The main benefits in online and blended learning seem to accrue from teachers who design courses with more opportunities for active learning. In this regard, online technology is an ally because of the potential to increase engagement; however the success of these approaches differs amongst instructors, courses, and disciplines. Though we can draw on other studies to make predictions about what might happen when change is introduced, it behooves us to make the effort to use a sound experimental approach to assess whether local practices achieve their desired goals in specific courses. Furthermore, this is not a practice that occurs once during course development, but rather continues as a course is remodelled in response to evidence that is accumulated.

Part V. Long Term Planning for Online Learning at Queen's

Scope

Any exercise such as this must consider the concerns of all of the parties affected by the policies. Many of the entities have developed their own policy statements, which must be considered in relation to recommendations on where to go next. In an effort to come closer to a resolution on this important problem, we recognized that our tenure on this committee was insufficient to address all of the long term planning issues that we identified. However, we hope that the report will serve as a foundation for continuing efforts to build a successful online learning portfolio.

Input from Stakeholders

Undergraduates (AMS)

The Alma mater Society has prepared a policy statement on its position in relation to online learning[33]. Excerpted from Section 24. TECHNOLOGY AND VIRTUALIZATION IN THE CLASSROOM, the Policy Manual states:

> ***24.1*** *The AMS recognizes that emerging learning technologies may serve to significantly augment and enhance teaching and learning in undergraduate education. In particular, the AMS recognizes the value of virtualization in the form of lecture capture and believes it should be embraced and utilized under suitable and well defined conditions as a valuable and useful delivery mechanism for education. The Lecture Capture System consists of an audio or audio-video stream recording of lectures, often accompanied by PowerPoint Slides or other electronic documents. Lecture recordings can be posted and subsequently viewed by students at their leisure where they are able to pause, rewind, and fast forward recordings.*
>
> *It is the position of the AMS Assembly that:*
>
> - *The introduction of virtualization should be designed solely to enhance learning and educational access and not as a cost-cutting measure.*
> - *The implementation of virtualization should be based on the suitability of the particular course and guidelines should be developed for these determinations.*
> - *Virtualization should not be introduced uniformly but rather on a course by course basis within departments. Assessments should be approved by department heads with appropriate consultation.*
> - *Where modes of virtualization have been introduced in the classroom the university should establish key performance indicators to assess the* **a great deal of merit in promoting** *and viability of these measures. These indicators could include mark distributions, student exit surveys and*

[33] http://www.myams.org/media/94193/AMS%20Policy%20Manual-Part3%20-%20Representation%20Policy.pdf

attendance. Each department should annually review and report on this data for a period of three years after implementation.

- *Virtual learning shall be accessible to all students enrolled in a course where it is offered. Efforts need to be taken to ensure necessary resources such as computers are available in sufficient supply to access on campus as well as considerate of varied learning and physical abilities.*
- *The Supplementary/Hybrid Model of Lecture Capture, where lectures are recorded while courses proceed in a traditional manner so that they can be subsequently accessed by students online, should be offered where possible.*
- *The Course Redesign Model of Lecture Capture, where courses are comprised of pre-recorded lectures in place of traditional classes, in conjunction with small-group face-to-face learning, should be carefully planned and incorporate effective face-to-face interaction, as well as a well developed contingency plan and consistent review of key performance indicators.*
- *The Replacement Model of Lecture Capture, where courses are taught solely through online lectures, can be used to enhance the accessibility of post-secondary education. However, mandatory courses should not be exclusively offered in the Replacement Model, students should have the option to take mandatory courses in an alternate form.*
- *The University should explore alternative modes of virtualization in the delivery of education to promote active engagement. Alternative modes could include the instantaneous response system, also known as clickers, and virtual learning environments, such as Moodle.*
- *The Centre for Teaching and Learning should be consulted throughout the planning and implementation process of any form of virtualization.*

The policy positions advocated by the AMS reflect a focus on the needs and priorities of the undergraduate population. The SAPTF would like to offer a few comments on the policy in relation to how it influenced our recommendations.

Significance of lecture capture: The reputation of lecture-capture is one of the reasons some faculty and students dislike "online learning" as they view it as inferior to a real lecture, despite the convenience factor. When lecture-capture was introduced to the university, there was a fear that the "canned" lectures would be a step toward replacing face-to-face lectures and become the sole content of online courses. A captured lecture can be a valuable reference for a student that attends (or misses) the live lecture. However, as a teaching tool, it can be argued that a 50 min captured lecture is not a very effective teaching tool. The technology could be used to create teaching vodcasts - short segments that can be used as a tool that precedes active learning classroom activities or tasks.

March 2013 AMS Town Hall on Online Learning

In March, 2013, the SPTF attended a Town Hall meeting organized by the AMS. The main topics for discussion were:

1. **What are the benefits and challenges of online learning?**
2. **Are Queen's courses flexible enough in their delivery methods?**
3. **Massively Open Online Courses (MOOCs)**

This Town Hall was sponsored by the AMS, and advertised by the AMS and SGPS. It was moderated by Isabelle Duchaine (AMS Academic Affairs Commissioner), with SAPTF members Eril Berkok, Mark Swartz, and Terry Bridges, and 6 students attending (all undergraduate). The discussion was wide-ranging, with the following questions and themes explored.

What are the benefits and challenges of online learning? There was consensus that not all courses should be online. Queen's courses need to have a face-to-face component, to allow personal contact, to engage students, to enable spontaneous, off-the-cuff discussions, and to hold students accountable. One student commented that an online forum could never replace a discussion group, while another mentioned that face-to-face contact between student and instructor was more efficient than email.

There were concerns expressed that online courses were being created to save or make money, by increasing course sizes, and that online courses would increase student to faculty ratios. Concerns were also raised about the academic integrity of online assessment. There is also an issue that online courses, with more students, will increase the workload on instructors through more student questions and the need for more office hours.

However, one student reported a positive experience with MATH 121, a completely online course. This student has trouble concentrating in large lecture halls, and found it to be helpful to view material online and be able to pause and reflect. Another student commented that online courses could be used to increase the number of courses offered, especially in some departments where the course selection is currently quite limited.

In contrast to the concerns expressed with online courses, there was support for blended courses, where some material is put online, and class-time used for group work and discussions (e.g. the flipped classroom).

There was a discussion that online learning could lead to student disengagement if done poorly; but if done well (e.g. with the proper balance of face-to-face and online components), it could lead to greater engagement. It was pointed out that current students are more distracted and that they learn differently than students did in the past—online learning can help.

Are Queen's courses flexible enough in their delivery methods? Some students felt that online courses can lead to greater flexibility, while other students felt the opposite. For some students, online courses are too flexible, and that online course work can be too easily ignored. One student commented that that online courses work best for active people, who take more responsibility for their own learning.

One student in attendance emphasized that online courses should be used to increase the number and variety of courses offered through Queen's. It was mentioned that students were often disappointed that some courses included in course listings were not offered or only offered in one time slot. Online course offerings could make it more financially realistic to offer less popular and specialized courses more frequently.

In consultation with various student societies, one perceived opportunity for online learning was to offer online components in mandatory courses. The particular benefit stems from taking mandatory courses - which are by definition inflexible in the sense that they students must enrol in them - and adding flexibility by taking the information delivery component (i.e., lectures) which solicit little engagement or active learning and putting them online, where that information can be accessed anytime.

Massively Open Online Courses (MOOCs) At least two students present had taken a MOOC. One student had taken an MIT Open Sourceware calculus course, and found it very easy to use. Issues of high MOOC dropout rates and challenges of accreditation were raised. Some students felt that Queen's students would take MOOCs if it would count toward their Queen's degree. One student took a MOOC to get access to a well known professor at another university. A comment was made that dissatisfaction with the quality of Queen's instructors can lead to skipping lectures and students looking at material online. It was recognized that some institutions (e.g. Harvard) host MOOCs to increase their reputation, and could afford the costs of doing so. However, the use of MOOCs was felt to not be an appropriate use of Queen's funds, with the current budget situation and the recognition that MOOCs don't bring in money. The question was asked whether MOOCs are aimed at branding or learning? One would want to be very selective about who teaches MOOCs, with our best instructors teaching them.

Further Consultations with Student groups

In addition to the Town Hall, in his capacity as incoming AMS President, SAPTF member Eril Berkok conducted a series of consultations with various student groups (Arts and Science Undergraduate Society, Engineering Society, Commerce Society, Nursing Science Society, Aesculapian Society, Physical Health Education & Kinesiology Students Association, Computing Students Association, and the Concurrent-Education Students Association.). In general, these responses from students suggest that they would like to see policy regarding technical failures during online quizzes, regulation of ancillary fees to fund the development of online courses, more access to course information such as syllabi, offering course material in a variety of formats to cater to multiple learning styles, more clarity in transfer credits process, and LMS changes to improve the ease of use.

Question 1: What would you ideally want out of an online course?

- Online courses and their course materials should only be funded through tuition fees, and not in any part through additional ancillary fees.
- More concerted effort needs to be made to provide access to course syllabi to enable students to tailor their course selection to their learning styles.
- Contact with professors - through email, forums, or other online channels - should be reliable and consistent, and should not be reduced.
- Online evaluations and feedback should be timely, especially if marked automatically.
- Peer-to-peer learning should be promoted via this format (i.e. online forums, peer assessment, etc.) - classrooms aren't just where learning is done but where relationships develop, and we need to retain that.

- There needs to be support in first year especially coming out of high school - online learning is a big leap on top of the adjustment between high school and university.
- Providing the same course material in a variety of formats - in-class, lecture capture, posted complete note, audio, etc. - is crucial to accommodate multiple learning styles.

Question 2: Are there problems that you encounter with online delivery technologies such as Moodle, Medtech (or other ones)? If so, what are they? Do you perceive any opportunities for improvement?

- LMS interfaces need to be designed in a way that is easy and transparent for students, faculty, and staff to navigate and use.
- Faculty and teaching staff must make use of support resources and must be supported in delivering high-quality online courses.
- Unify, or give the option to, faculty to see the student view of their LMS works when there is a discrepancy.
- Centralizing of online courses into one LMS is preferable.
- A policy must be developed to accommodate situations whereby technical failures prevent access of online evaluations.

Question 3: Many people have all sorts of life commitments - work, family, athletics - that the traditional in-class lecture format of university can be difficult to work around. Do you find that Queen's course offerings have enough flexibility in their delivery method?

- Particular attention should be paid to add online components to courses that are mandatory and not often offered in order to most efficiently expand on program flexibility.
- Deadlines should be flexible especially for employed students who may not have consistent work schedules and thus cannot access the internet regularly.
- More summer courses, more online courses outside of the obvious suspects such as first year big courses (upper year, core courses, etc.)
- Explore flexibility within a course (i.e. here are all the assignments, make sure they're done by the end of the term)
- Would be ideal to offer both in-class and online courses to maximize accommodation of learning styles. Beyond these two, be creative in how you deliver the same information.
- Needs to be more transparency in transfer credits - i.e. Athabasca 4th year French translated to 2nd year Queen's equivalency.
- Explore non-traditional term when speaking of online courses (i.e. Have a course that persists between August - February)

Summary

There was recognition amongst students that online learning is here to stay, and provides many opportunities. Our impression was that students expected the university to ensure that online learning

was incorporated wisely to advance student learning, balancing student needs and preferences with pedagogically-driven online course offerings.

QUFA

In February 2013, the SAPTF hosted a meeting with representatives from QUFA including P. Young (President), M. Jones, K. Norman, D. Beauchemin, and E. Hanson. QUFA provided a policy position, pasted below:

> *QUFA members have a broad interest in curriculum development including various forms of online, distance and blended learning. The QUFA Executive endorses the following suggestions and cautions for the development and use of online resources within our curriculum. We are also aware of a number of potential issues relating to IP and workload associated with some of these endeavours although we have not directly addressed them here. [v/ol = virtualization / online learning]*
>
> 1. *Rather than promote v/ol in general, Administration should put emphasis on facilitating initiatives for v/ol that are generated by faculty to improve the learning experience.*
>
> 2. *V/ol should be pursued for purposes of academic enhancement, not primarily to cut costs or stretch resources. Administration should encourage and support strategies to verify academic enhancement.*
>
> 3. *Academic planning and policy about v/ol should be evidence-based. That is, introduction of any course or programme involving v/ol should be based on persuasive evidence of v/ol's effectiveness for that application.*
>
> 4. *Queen's must be sensitive to disciplinary and other situational differences, i.e., it must recognize that v/ol may be suitable for some situations but not for others. To that end, individual units should be allowed to set limits on the type and number of online courses that may be applied to their degree requirements.*
>
> 5. *Queen's should rewrite its current institutional definition of "blended" learning, which stipulates that online components are added to offset reductions in face-to-face time between professors and students. In other words, "blending" should involve the adding of v/ol, or the use of v/ol to substitute for text-book learning, but should not entail reductions in contact hours between students and professors. The definition should highlight academic benefit rather than focus on cost-reduction.*
>
> 6. *Just as Queen's used to limit the number of off-campus courses that could be counted toward a Queen's degree, it should consider limiting the number of applicable online courses; one way to do this while allowing for disciplinary differences would be to allow units to set an upper limit to the number of online courses applicable to each of their Major, Medial, and Minor degree plans.*

7. *Online courses and "blended" courses (so long as the latter continue to be defined as involving reduced contact hours) should be considered as course variants and should be vetted separately by curriculum committees.*

8. *Variant courses (as per recom. 7) should be indicated as such in Queen's calendars and on transcripts.*

9. *Online variants of courses also offered on campus at Queen's should be reviewed periodically to ensure academic equivalence.*

The policy positions advocated by the QUFA Executive reflect a focus on the perceived needs and priorities of the faculty population. The extent to which this policy statement reflects the positions of the broader QUFA membership is unclear. The SAPTF would like to offer a few comments on the policy in relation to how it influenced our recommendations.

There are a number of recommendations that speak to the importance of adhering to academic priorities rather than financial. In this respect, the SAPTF wholeheartedly agrees. However, we do not concur with the argument that online approaches should have a greater barrier to climb than other teaching approaches. For example, there is a dual standard that places a burden on online technology that is never faced by a lecture course. The SAPTF advocates efforts to improve the quality courses through evidence-based practices, but argues that the quality of a course has much less to do with the technology than the course design.

We feel that there has been undue emphasis on the definitions of different teaching modes. For example, the FAS BLI has provided a working definition for blended learning in the context of their program priorities. There is no reason to argue that their adoption of this definition and the conditions associated with the BLI requires the terminology to be imposed on other Arts and Sciences units or across Faculties, and any arguments about the definitions detract from more important issues. We have made suggestions for specific working definitions to be used in university-wide discussions, but at best these will also be context dependent.

There is a suggestion in recommendation 6 that online courses are inferior and that limits must be imposed on academic units to ensure academic credibility. The SAPTF rejects the notion that the style of delivery can be used in any manner to assess the quality of courses.

We note that issues related to identification of course variants have been addressed recently through SCAP, and we concur with their position.

Departments

A survey was conducted in February 2013 in an effort to assess the interests and concerns of unit heads, reasoning that they would be in the best position to assess where their units would be positioned in relation to online learning in the near future. A survey was sent to Departments Heads to explore

current and future plans for online and blended learning courses. There were 17 respondents from 15 individuals representing a selection of departments (Heads, Undergraduate Chairs, or their delegates) from the Faculties of Engineering and Applied Science, Arts and Science, Health Sciences and the Schools of Music, Religion, Computing and Queen's School of English. There was no input from Fine Art, the School of Kinesiology and Health Studies, the School of Business or the Faculties of Education or Law. While there was input from the Schools of Nursing and Rehabilitation Therapy with in the Faculty of Health Sciences, there was no input from the School of Medicine. Some of these omissions are important because of the involvement of these units in blended and online education (especially Business, Education and Medicine). The main findings are listed below:

Of the Schools and Departments who responded that they provided fully online courses, the number of such offerings ranged from 1 to 74 courses, with most reporting 5 or less. One group identified that they had proposed the development of an online course but that this request had been denied. Few respondents anticipated significant growth in fully online courses over the next five years, with only 4/17 (30%) responding that there would be greater than 10% online courses in their unit in that time frame. There was greater enthusiasm for blended courses – 9/17 (54%) felt that greater than 10% of their course offerings would be online in five years, with 42% feeling that this would represent 25% or greater of courses. Most respondents felt that instructors were neutral or negative towards blended or online courses, with fully online models the less popular of the two. They identified more student enthusiasm for both types of offerings. Few respondents identified concrete measures of success in blended or online learning other than student grades and increased enrollment. One person noted that it would be important to measure outcomes beyond student satisfaction, but did not offer any concrete suggestions.

Blended courses were felt by 50% of respondents to increase student engagement with course material; a majority of respondents felt that such courses were beneficial as they were able to accommodate a variety of learning styles and facilitate peer-peer interaction and learning. In contrast, online courses were largely felt to be valuable because of the ability to increase access to students unable to attend a residential university and to increase revenues for the institution.

Heads were asked to estimate the fraction of courses in their department expected to be offered online five years from now. The majority of respondents (71%) thought that their online course repertoire would be between 0-10% of their offerings, and 18% thought between 10-25% of their curriculum would be offered online. The 5 year horizon for blended learning suggested Heads felt the blended courses would increase in prominence. Less than half felt that fewer than 10% of their courses would be blended, and about 1/3 thought that 10-50% of their curriculum would be blended. Almost 1/5 of the respondents thought that blended courses would represent more than half of their curriculum in five years.

Some survey respondents expressed skepticism regarding the 'pedagogical value' of online education, indicating the value, perhaps of a central resource summarizing available research related to online and blended learning, perhaps highlighting best practices and showcasing local success stories. The most

consistently identified disadvantage to online learning was the level of technological expertise required of a faculty member in order to engage in this type of instruction. In general, the concerns expressed by Heads mirrored those expressed by individual faculty.

All respondents thought that a benefit of online courses was the ability to reach new students who can't attend campus. About half thought this would be beneficial in terms of revenue for the department, and capacity for programs.

Continuing and Distance Studies in the Faculty of Arts and Sciences

In all units but FAS, the development of online courses falls within the domain of the academic units. With expertise in the technology side of online teaching, CDS has also participated with the BLI. As a non-academic unit in FAS, CDS plays a unique role within the University in teaching and learning. Its original role was to offer distance courses, with its first offering in 1888 (yes, 1888!). Its main role in the 1990s was to offer summer courses on the main campus. In recent years the FAS has eliminated summer residential courses because of low student demand, and transitioned to online courses, targeting both distance and on-campus students. The repertoire of courses includes in-term offerings and summer courses. New courses are solicited in areas where there is highest student demand from residential students, where the most outgoing Letters of Permission are requested, and where courses are needed to satisfy program and plan requirements for distance students. CDS pays departments for development of new course, and a course is created that serves the priorities of FAS, and the academic needs of a department, its faculty members and students.

The nature of the input from the community suggests there are a number of real and perceived problems with the current approach adopted by CDS. The unit falls within FAS, and thus we feel any review needs to be initiated through FAS. However, we also feel that this report can help identify the problems and propose solutions. We note that this SAPTF exercise comes at a time when online teaching is being assessed at multiple levels, and the financial particulars are changing as a result of the new activity-based budget model.

As with other aspects of online teaching, individuals raised specific and general comments about the practises in use at CDS. Based upon the surveys and comments we received, we can identify a set of specific concerns, and offer some comments and context that should clarify the situation.

1. Financial and material support. From the outset, we must stress that any FAS department that wishes to mount and run an online course is free to do so using departmental resources. They are not required to involve CDS in any manner, but they bear the responsibility of financial and administrative support. Most often, the overarching priorities of a department align with those of CDS, namely that there is a critical mass of students sufficient to merit investment of resources to create and run a high quality course. In the previous budget model, there was little incentive for departments to create their own summer courses. However, in the new budget model there may be more incentive for departments to be proactive if new revenue may compensate for the additional costs. Ideally CDS would be in a position to offer suites of courses more effectively than could individual departments due to the economy of

scale and centralization of expertise. For example, the links between the student, the course, and the Registrar would be more challenging to navigate if each department ran online courses independently.

2. Course development. It could be argued that faculty members who teach traditional courses receive no training in teaching or pedagogy, but are able to make it through lecture-based courses on knowledge of the specialty. Individual lecturers may be more gifted speakers, more motivated educators, more knowledgeable topic experts, or more on top of pedagogical research. These weaknesses, for the most part, do not prevent faculty from mounting traditional lecture-based courses. For courses to increase their use of online technologies, a faculty member needs to be more tech savvy, and despite the best intentions, some faculty may not be able to mount effective online activities. The worst of all options is an online course that simply posts packaged Powerpoint presentations or readings. In an ideal world, an individual anxious to adopt online technologies would be able to go to a centralized support unit and resolve the pedagogical, technical, and administrative problems. At the moment, there is no such centralized support. An FAS faculty member who wants to resolve problems in her own online course usually goes to colleagues who have faced the same challenges, CTL for advice on teaching, and ITS for purely technological problems. For fully online courses, the CDS alternative is attractive because that is where the collective expertise currently resides, but to some extent duplicates expertise with CTL and ITS.

3. Course design features. The direction of CDS is such that they are actively promoting course design features that they believe are grounded in sound pedagogy. As a result, they vigorously promote adoption of specific active learning features in new courses, and during the course redevelopment that occurs on a regular cycle. We feel that CDS has the required expertise to identify tools and approaches that, in general, facilitate active learning. The extent to which an instructor/developer cedes control over the approach is a source of friction. There is some concern that individual elements may not be well suited for specific courses. In such cases, CDS needs to make a better case for why particular features are pedagogically sound, because if an instructor is not convinced of this, then the assumption is that an approach is being driven by other priorities. For a true partnership to succeed, both sides need to have a better understanding of their partner's position. We confess to being at a loss at how to accomplish this other than with time and ongoing discussion between the participants, perhaps bringing into the discussion colleagues who have faced similar challenges.

4. Curriculum integrity. An ongoing challenge to CDS and others has been the extent to which an existing course number should be useable by course variants. With respect to online courses specifically, the easiest route for CDS is to ensure that a new online course is fundamentally equivalent to an existing course. How this is done is a matter of debate. On one hand, there is an expectation in some core courses that specific knowledge or skills are gained, and the success of the curriculum requires specific aspects of that individual course. In other cases, the specifics of the courses are relatively unimportant as long as the general goals meet the expectations of the department. For example, Undergraduate Chairs are regularly asked to approve transfer credits from other accredited institutions where the specifics of the course may differ. In some cases aspects that may be important to the home department are less important to other departments. Because the expectations and constraints in courses exist on a

continuum, communication about the requirements is essential. It is incumbent on the partners to recognize that the specifics of an online course often have complex consequences and the academic department is in the best position to explore the broader ramifications of any deviations in course variants. CDS or Departments can initiate a review of an ongoing online course. The extent to which this obviates review externally is vigorously debated.

5. Compensation. There are a number of challenges that arise because of the nature of CDS as a non-academic unit, and the less conventional nature of the services they provide. The issue of course development compensation frequently arises because it is seen as FAS money that could be diverted to departments. Once a contract is signed, the degree of oversight by the department appears to vary widely. The business plan would seem to take into consideration the direct and indirect costs of online development and the projected returns over a period from additional revenue as a result of enrollments. The particulars will likely change with the application of the new budget model.

Practices for hiring to do the teaching of the course also differ widely between departments. The instructor may or may not have been involved in the development process. The process by which the instructor is selected is left to the department. The practice used by some departments to identify individuals through the Appointments Committee seems to be the most robust approach.

We received suggestions that the compensation for teaching a CDS course falls short of the QUFA-based levels for faculty and teaching fellows. CDS has advised that the compensation rates meet with the guidelines set out in the various collective agreements, and we have not pursued the issue further.

6. Intellectual property. When CDS draws a contract for course development, the negotiating party is the Department (via the Head), which in turn reaches an agreement with individuals prepared to help develop the course. The faculty developer owns the IP in the course content that he or she created, and the University has a non-exclusive, non-royalty bearing license to use the course content for the purpose of teaching Queen's students.

Outstanding questions in relation to CDS

Our goal was not to conduct an external review of CDS, but so many of our comments dealt in one way or another with CDS and associated FAS initiatives in online learning. To the extent possible, we sought to clarify misunderstandings and points to opportunities for improved relations within FAS. Nonetheless, there are several outstanding questions that merit articulation of policy from FAS.

What happens if an FAS department wants to offer an online course outside the structure of FAS? CDS has a vital role in developing, promoting, and operating online courses for FAS and the broader Queen's community since students from all faculties take CDS courses. Their integrated services make it simpler to offer and take online courses. However, we could find no relevant policy on what would happen if a department chose to offer an online course independently of CDS. The main obstacles for a department would appear to be the loss of promotion to potential students, the lack of support that would enable

individual departments to mount courses, and uncertainty about a funding formula that makes the benefits of doing so clear to departments.

What is the role of the department in the courses CDS offers? In an informal survey of online offerings, it is clear that there is a great diversity in the nature of commitment from departments. Some individual courses are projects oriented around individual faculty, where the department plays a more passive role. In other cases, the department is the driving force, with the faculty playing more of a supporting role. In some cases, the lines of communication bypass the undergraduate chair and undergraduate studies committee. We see an advantage to articulating more standardized and explicit departmental expectations, where each course offering has received broad approval within the department.

What happens when disagreements arise between the parties? From our information, most departments have a good relationship with CDS. However, there should be formal mechanisms in place to deal with those rare situations where CDS, departments, and faculty have diverging positions. When this has happened in the past, it has created situations that become lightning rods for online teaching, and garnered a disproportionate attention. To avoid future problems, we stress the importance of effective communication between the interested parties, and emphasize that the Head has a vital role in ensuring that choices made reflect the appropriate balance between the priorities of the parties involved, from the Faculty Office through to students.

University and Senate

In preparation of this report, we tried to identify areas of conflict, approach them from an analytical perspective, and search for common ground for evidence-based positions. One area where we found little to work with was the concept of academic freedom as it applies to teaching. This is an issue that would seem to merit some proactive action on the part of Senate, because it is quite likely to rear its head in the future. In the following passage, we discuss our perspective on the relationship between current practices in relation to teaching quality.

Academic Freedom and Quality Assurance: Some degree of transparency and cooperation is needed so that courses 'fit' into the curriculum and provide students with the requisite knowledge, skills, and values to succeed in further studies and in their discipline. Some might conclude therefore that decisions about course objectives, assessment practice and learning activities cannot be made in isolation by individual instructors or differ from year to year, but should be made collectively by the departments or areas that are responsible for ensuring that students meet degree level expectations upon graduation.

At the other end of the spectrum, some believe that academic freedom means that instructors are free to do what they want behind the classroom door as long as they cover the content outlined in the published course description and meet with their students for the published number of contact hours. In this sense, a requirement to articulate and assess course objectives would infringe upon their academic freedom. Furthermore, a requirement such as that in medicine, that no more than 50% of contact time can be used for didactic lectures, would constitute a serious assault upon their academic freedom.

To promote and ensure quality learning experiences for our students, it will likely be necessary for all instructors to cooperate with some agreed upon design and/or teaching practices. Figuring out what this means in terms of academic freedom is crucial. To the degree that academic freedom is viewed as a faculty member's inalienable right, so too should access to a coherent, effective (evidence-based) learning environment be seen as a student's right. Balancing the two will require some compromise.

In a related vein, but not within the scope of this report, teaching, like research, would benefit from peer review. Opening up the classroom door and inviting our colleagues in to observe or co-teach can be threatening. Whereas our research and writing is open for public display and comment, often our teaching is treated as a very private matter. This may be the biggest impediment to moving forward. In some departments with which we are familiar, faculty members employ a type of apprenticeship model with their graduate students when it comes to research and teaching, but are still reluctant to open the classroom door to their colleagues.

MOOCs: Many top-tier universities in North America have become committed to the development and promotion of MOOCs. This remains an emerging field that should be approached with caution, pending the development of robust internal support processes including videography, instructional design and library/copyright clearance. Additionally, hosting such courses requires either a substantial investment in the LMS and support capacity, or an agreement with a commercial hosting provider. However, we note that at least one leading Canadian university, UBC, has made a major commitment to developing, promoting, and integrating MOOCs into their teaching[34]. The State of California has recently initiated legislation that would require state universities to accept MOOCs and online courses for credit, but only if the host institution did not provide its own version of the course[35]. The potential ramifications of this legislation are obvious and far reaching. Parallels have also been drawn to Ontario and how it is promoting the use of online teaching for its own purposes, and whether MOOCs will eventually obtain some form of accreditation.

Outside the University

In the past few years, there have been a number of important changes in the approach to online courses in Ontario. The 2010 Ontario Throne Speech and Budget announced an initiative to create the Online Institute, which was portrayed as means to "bring the best professors from Ontario's postsecondary institutions into the homes of those who want to pursue higher learning". In 2010, the Council of Ontario Universities (COU) prepared a response describing the Ontario Online Institute: Achieving the Transformation [36]. In the absence of clear direction from the Ministry of Training Colleges and Universities (MTCU), the COU document was deliberately ambiguous on how they would achieve this Ministry goal, but the argument was made that it would be best run through COU. In 2012, the Ministry

[34] http://www.tonybates.ca/2013/03/12/ubc-is-going-big-with-online-and-flexible-learning
[35] http://www.nytimes.com/2013/03/13/education/california-bill-would-force-colleges-to-honor-online-classes.html
[36] http://www.cou.on.ca/publications/reports/pdfs/cou-onlineinstitutesubmission

of Training, Colleges, and Universities produced a report Strengthening Ontario's Centres of Creativity, Innovation and Knowledge[37]. From their report (p 19):

> *More widespread use of technology-enabled learning has the potential to increase access for all learners, particularly those who are prevented from attending in-class education as a result of barriers that may be financial, geographic, physical, family-related, or work-related. Innovative applications of emerging technologies not only offer flexibility in time and place of delivery, but also could support improvements to the teaching and learning process. However, consideration must be given to the appropriate level of technology integration and the appropriate instructional support for different groups of learners and for different program areas.*
>
> *Technology-enabled learning can also promote inter-institutional collaboration, coordination, and more efficient use of resources through the sharing of course development and delivery services, ultimately leading to more choice for students, improved pathways for student mobility, and potential cost efficiencies for institutions.*
>
> *Some options we could explore include the following:*
>
> - *More widespread use of technology in the classroom.*
> - *Revamping the vision for the Online Institute to provide Ontario students with online degree and diploma options to serve students who prefer to learn online, lifelong learners, and students with dependents who are unable to easily attend physical campuses*

The MTCU document advocates clearly for more online courses, and there is a sense within the documentation that this is an effort to create opportunities for potential students. Their stated goal is to have 70% of Ontario's population with some form of undergraduate degree facilitated by a broad spectrum of online course opportunities. There is also an undercurrent of financial expediency, where the Ministry sees opportunities for efficiency-focused strategies that make better use of the province-wide schools that it supports.

COU continues to consider mechanisms to meet the goals set out by MTCU. They produced the October 2012 report Transforming Ontario Universities[38] as a response to MTCU's Strengthening Ontario's Centres of Creativity, Innovation and Knowledge. They are also working specifically on the development of an online educational consortium to support the expansion of online courses. In an August 2012 meeting, a working group discussed the characteristics of such a consortium, from the mechanics of a centralized Ontario Online Institute that offers courses and degrees, to mechanisms to create an infrastructure that supports online learning technologies. The goals of the consortium, derived from the COU document Ontario Universities Online are to:

- *Improve access to online courses and programs offered by Ontario universities for students across Ontario and in other jurisdictions*

[37] http://www.tcu.gov.on.ca/pepg/publications/DiscussionStrengtheningOntarioPSE.pdf
[38] http://cou.on.ca/publications/reports/pdfs/transforming-ontario-universities----cou-submissio

- *Improve credit transfer of online courses*
- *Expand the range of online course and program offerings*
- *Introduce a new pathway to university education, through open access to a range of courses, and a way for students to bring their success in open-access courses to an admissions process*
- *Create a platform for faculty to share and collaborate*
- *Improve the quality of technology-enabled learning- both for fully online courses and programs and blended approaches that include face-to-face and online learning approaches*
- *Use the universities' resources that support online learning more effectively and efficiently, through collaboration among participating universities.*

Thus, between MTCU and COU, there would seem to be an inescapable momentum toward an increase in the Province's online curriculum, with the goal of ensuring that the efforts have broader benefits to the application of online teaching technology and course quality in general.

In serving on this Senate committee, we get the impression that a great deal of time is being spent on discussing the merits of online technologies when the reality is that online courses will become more prevalent whether we participate or not. The overarching message that the SAPTF would like to send is that it is time to accept the case for the merits of online teaching technologies, and devote our collective energy to ensuring that Queen's renews a focus on course quality. Whether or not the OOI is created, and if so, whether or not Queen's joins the consortium, well constructed, well supported, technology-enabled courses will have an important role in our curriculum.

SAPTF Recommendations and Conclusions for Long Term Policies Related to Online Learning

The SAPTF has spent considerable effort exploring the policies and practices associated with online learning at Queen's. There is a long history of vigorous debate amongst people with highly divergent views. We have sought to find common ground, but where that is impossible we have promoted positions that reflect the consensus position of the committee.

14. Senate should elaborate on the relationship between academic freedom and teaching practices.

The umbrella of "academic freedom" has been used to justify many policies and positions, but the committee could find no direction on how academic freedom applies to teaching. A review of courses by a Faculty constrains on how courses are designed and taught. If a department or an individual faculty member deviates from the approved design, it is unclear whether this constitutes legitimate academic freedom, or whether that principle is just a means to circumvent bureaucracy.

15. Senate should require Schools/Faculties to articulate standards in terms of design, delivery and support for online courses and work in partnership with their departments/areas to ensure that these are met.

While individual departments are free to offer their own online courses, we recommend that these efforts be coordinated at a Faculty level to ensure consistency, quality and the efficient use of resources. In such a partnership model, the centralized Faculty/School office would consolidate expertise, unify offerings, expand the online curriculum, and coordinate advertising and administration. This would ensure a consistent look and level of student support across all Queens' online courses. The department would be the academic partner that sets the learning objectives, assessments, and learning activities to be incorporated into the online environment as well as facilitating student learning throughout the course. A close working partnership will ensure that Queen's online presence meets high standards, is integrated into department's overall curriculum, and is a reliable resource for distance as well as residential students.

16. FAS Department Heads need to take a more active role in ensuring that courses offered through CDS meet departmental requirements.

The adversarial relationship between CDS and some faculty and groups is an ongoing problem because it detracts from issues that we believe are far more important. CDS and BLI should be viewed as mechanisms to achieve academic goals identified by departments, and many departments have formed productive relationships with CDS. The efforts by CDS to consolidate expertise, unify offerings, manage the online curriculum, and coordinate administration seems to be a well constructed mechanism to operate FAS online courses. However, we are aware of a few instances where faculty developers and CDS have strong disagreements about the goals and approach in online courses development and review. It strikes us that Department Heads are in the best position to ensure that the online courses meet departmental requirements: they need to be active participants and not bystanders in the process of online course development, review, and approval. Any decisions made should ensure that there is

robust discussion at the department level particularly with their Undergraduate Chairs and Undergraduate Studies Committees.

17. FAS departments should consider bringing their online courses into formal teaching assignments, to better ensure that the courses integrate with course and program expectations.

The process for oversight and review of courses by CDS is robust, and surpasses what most academic units do with their own courses. However, the operational distance between CDS and departments catalyzes concerns about course oversight. If the online course became part of the regular teaching load, it is far more likely to gain the appropriate level of departmental attention. The nature of an online course is such that it should be assigned only to faculty who are willing to teach using online technology. In this scenario, funds from CDS would be equivalent to overload pay (in the case of regular faculty), and be used within the department for its own priorities.

18. Queen's should not become involved in MOOCs until and unless there is greater support for online learning

The recent surge in the profile of the Massive Open Online Course (MOOC) has triggered much discussion about the merits and potential of this type of course. These are courses that are created by individuals, building upon their own teaching portfolios. They require a great deal of work on the part of the individual, typically far more than is required in a traditional or online course[39]. The informal or formal association with internationally renowned universities gives a MOOC an important degree of credibility. A MOOC must possess a certain degree of credibility lest it lose its audience to one of the same subject offered by the most credible institution in that field. Many questions remain about the role the MOOCs will play in undergraduate education in the future. Though we see no harm in supporting a motivated faculty member who wishes to develop a MOOC, we do not see them as an institutional priority. There needs to be broader support for online learning in general, and it would be helpful to see developments on the question on accreditation.

19. Queen's should remain involved in discussions exploring the creation of the Ontario Online Institute.

There is a great deal of uncertainty about the future of the Ontario Online Institute given uncertainties in the priorities of the current Government of Ontario. Though the SAPTF sees no reason to lead the charge, we certainly don't want Queen's to be marginalized should the initiative gain momentum.

[39] http://chronicle.com/article/The-Professors-Behind-the-MOOC/137905/#id=overview

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