

Using technology to further enhance the teaching and learning environment at the University of Alberta

Report prepared by the Joint Subcommittee of the GFC Committee on the Learning
Environment (CLE) and the Teaching, Learning and Technology (TLAT) Council:
Fostering Pedagogy of Technology
March 12th 2012

Background information

Technology has long been an integral part of the day-to-day operations of the University of Alberta. The use of technology in a number of domains such as general administration, financials, and communications has led to significant changes in the way tasks are often performed. Unfortunately, the use of technology in support of teaching and learning activities has not kept pace with its use in these other domains. Indeed, the use of technology in our teaching and learning environment has resulted in changes that are far less substantial, with basic instruction often resembling what it was like when many faculty members were they themselves students. This report, prepared by a joint subcommittee of GFC Committee on the Learning Environment (CLE) and the Teaching Learning and Technology (TLAT) Council, discusses the use of technology in support of the teaching and learning environment at the University of Alberta.

At the Fall Term 2010 and Winter Term 2011 meetings of the GFC CLE there were several discussions that touched upon the use of technology in the teaching and learning environment at the University of Alberta. During these discussions, members of the GFC CLE expressed questions and comments concerning the following matters: a) teaching philosophy; b) the use of smart classrooms; c) the pedagogical values of the various tools available in the University's centrally supported learning management system; d) promoting the use of social media and other technologies to enhance the teaching and learning experience; e) accommodating the significant shifts in our students' learning needs and strategies; f) the gap between students' knowledge of technology and that of instructors; g) pedagogical and technical support for instructors; and h) the value-added of using technology from a teaching and learning perspective.

At the joint meeting of GFC CLE and TLAT Council in April 2011, a joint Subcommittee was identified to pursue further work on the issue of fostering pedagogy of technology at the University of Alberta. Given the terms of reference for both GFC CLE and TLAT Council, it was appropriate that the members of these two bodies would agree to join forces to examine the issue and John Boeglin (GFC CLE) agreed to transition the Subcommittee. Other Subcommittee members included Jose da Costa (TLAT), Scott Delinger (GFC CLE), Stanley Varnhagen (TLAT), and Anne McIntosh (GFC CLE). It was agreed that the Subcommittee would report back to GFC CLE and TLAT Council in Fall Term 2011. The Subcommittee met several times between June and October 2011 and presented a preliminary report on its progress at the November meetings of GFC CLE and TLAT Council. The report presented an overview of a number of University-wide initiatives, conducted over the past two decades, pertaining to technology enhanced teaching and learning environments at the University of Alberta. The authors of the report recommended that in order to better understand the attitudes and needs around technology enhanced teaching and learning environments, a University-wide needs assessment be conducted to examine current practices, potential future practices and related interests. Members of GFC CLE and TLAT Council provided an informal endorsement of the Subcommittee's work to date and encouraged the Subcommittee to continue with its designated undertaking.

Technology in the teaching and learning environment

While technology use for the purpose of enhancing the teaching and learning experience at the University of Alberta has been examined a number of times in recent years, there is still much that we do not know¹. Technology has always been, and will continue to be, a “moving target”. As a result, getting accurate data is a challenge, as is the longevity and usefulness of these data when they are collected. For example, the recent change in our centrally-supported Learning Management System (LMS) from WebCT/Blackboard Vista to Moodle will undoubtedly cause changes in attitudes and behaviours among both faculty and students. Furthermore, these attitudes will evolve over time.

One possible way to address this problem is to examine the current and future instructional needs of faculty. From this vantage point, the University could then see what technologies might facilitate instruction and how this might happen. In addition, we need to better understand students’ perspectives on how they use and can use technologies to learn. This understanding is necessary to more effectively support and enhance student learning. Much has been made of how ubiquitous technology is to the current generation of students. While this is undoubtedly the case to some extent, it does not necessarily translate to changes in the way students use technology for learning-related activities.

In the University of Alberta’s quest to be in the Top 20 by 2020, technology should provide the necessary tools to support its goals. A variety of on-going initiatives are important examples of how technology can support teaching and learning activities, such as providing “smart” classroom technology in all centrally booked classrooms, and encouraging the use of mobile technology. However, to date, as is the case with many other initiatives, the emphasis has primarily focused on the technology/tools, and has seldom met the original expectations around how the technology will transform teaching and learning for either instruction or student learning. There may be a number of reasons for this, but these initiatives collectively suggest that relying on the technologies alone to create the transformation is likely an ineffective strategy. Some of the possible reasons for this include:

- *Disconnect between pedagogical goals versus tool’s functionality:* When technology implementation starts with a specific tool, rather than a defined need, the tool’s functionality and the instructor’s pedagogical goals are often disconnected. In this approach, generally, instructors are expected to understand and adapt this technology to meet their pedagogical goals for the technology to effectively support the instructor’s needs.
- *Technologies keep changing:* The nature of technology is such that it is continually improving, with newer versions frequently available to replace earlier versions. This built-in obsolescence likely limits interest in spending time and resources to learn about a specific technology that could soon be outdated, or need updates.
- *Required time and resources:* Learning about a specific technology and its uses takes time and resources, which are often in limited supply.
- *Challenging to support:* New technologies can be extremely difficult to support, especially when different versions (of both hardware and software) need to be supported

¹ See the GFC CLE/TLAT Council Subcommittee preliminary report from November 2011 for an overview.

at the same time. Examples of this problem are evident with the different LMSs currently available on campus (e.g., Blackboard Learn, Blackboard Vista, Homer, and Moodle). This is one of the reasons why the University is trying to encourage University-wide usage of a single LMS, namely Moodle.

- *Variance of uses of the same technology across campus:* Often the same technology can be used in different ways by different individuals. So, there can be considerable variance in how a specific technology is used across campus, or even within a department. Just because the technology has a number of capabilities and the technology is in wide use does not mean that many of these capabilities are used widely by the different users. This also makes training and support more challenging.
- *Different methods of getting assistance:* When looking for assistance with using technology, academic staff members pursue answers in many different ways, including talking to colleagues; using the help function, when available; reading manuals; contacting help centres; and trial and error. So, having appropriate help available to match the various user needs is a continuing challenge.
- *Differing priorities and support across campus:* Within a department or Faculty, the priorities and support may vary considerably. This can be related to the differing needs of specific disciplines and funding available.
- *Limited central support:* There are limited resources for University-wide support that need to be spread between a number of continually changing initiatives, software, and hardware.
- *Ever-greening costs:* Once committed to a technology, there are often significant ever-greening costs that will need to be subsequently covered, for continued use. When renewal and support are not continued, those who have committed to using these technologies can be put in a difficult position.
- *Varying instructional technology requirements from course to course:* Students are often trapped between widely varying technology requirements or uses among courses. Some students are even required to use a different LMS from one course to another. As well, the use of technology in a given course often is unrelated to how technology is used in subsequent courses, even within the same content area. This can cause a mismatch between student expectations and what is offered in different courses. Finally, the rationale for the technology approach chosen is often not provided to the students, thereby leaving them with unanswered questions about why the technology is being used the way it is in their various courses.

All of this suggests it is now the time for us to conduct an extensive multi-faceted re-evaluation of the use of technology in the teaching and learning environment at the University of Alberta. The results of this evaluation will serve to provide an objective assessment of the current use of technology and provide the impetus to further enhancing our teaching and learning environment with the use of technology. While this initiative is not an integral part of the 2012-2017 Information Technology Plan currently under development, it does address some of the concerns as well as the overall vision of the plan.

Evaluation plan

To better understand the requirements, needs, and attitudes around teaching and learning that can inform as to the effective use of technology, we would like to propose that a University-wide evaluation be conducted to examine current practices, potential future practices, and related interests. While the emphasis would be around teaching and learning activities, other related information, including how technology is currently being used in other domains, will also be collected. This will provide information to assist the University's senior decision makers with respect to future directions and sustainability of various technology-related initiatives.

Method

The CLE/TLAT Subcommittee recommends the establishment of an advisory or steering subcommittee to guide this evaluation and ensure that the views of interested stakeholders and decision makers from across campus are appropriately represented, and to allow for the needed two-way communication with the broader University community to take place.

The proposed evaluation could include a combination of some or all of the following methods:

- An environmental scan of existing work in this area conducted at the University of Alberta, in addition to an examination of what has been done at comparable universities
- A literature review of related topics around pedagogy and technology
- Interviews with key stakeholders within the University of Alberta
- Focus groups with appropriate stakeholder groups to facilitate survey development
- A University-wide online survey of a sample of faculty and appropriate support staff
- A parallel University-wide online survey of a sample of students, hopefully in cooperation with the Students' Union and the Graduate Students' Association.

Suggested stages and timeline

The following is an overview of the various stages of the proposed evaluation along with a tentative sequential estimate of the time for completion of each item:

1. Creation of an Advisory Subcommittee (subject to approval of GFC CLE, TLAT Council, and/or other committees as deemed appropriate) to be chaired or co-chaired by a member of the senior administration – 2 weeks
2. Development and approval of the terms of reference for the Advisory Subcommittee – 4 weeks
3. Development of the evaluation plan (including Research Ethics Board application and approval) – 4 weeks
4. Refine and pilot evaluation instruments (subject to Research Ethics Board approval) – 4 weeks

5. Conduct survey, focus groups, and interviews – 6 weeks
6. Analysis of results – 8 weeks
7. Prepare final report – 4 weeks
8. Present final report to appropriate committees

Members of the Advisory Subcommittee would meet and be consulted (through meetings and by email) throughout the various stages of the evaluation project. Other consultations with various stakeholders and/or decision makers will be scheduled as needed.

Why yet another survey?

Since numerous surveys have been previously designed and conducted to look at the use of instructional technology and they have had limited usefulness around planning and developing policy, why should the proposed survey be any different? In our opinion, the focus of these instruments has often been misplaced. Too often the focus is on the specific technologies in use at the time the survey was conducted. But since technologies are continually changing, the collected information was often considered out-of-date soon after the results were reported. For example, how useful is it to know the use of Blackboard Vista, now that the University is transitioning to Moodle?

Another problem was often that the surveys asked questions in a way that did not challenge the status quo. Why would survey participants want to employ new technologies in their teaching when they believe that their current methods are more than adequate for teaching their content? Especially in an environment where questions exist around adequate support, trying something different can be perceived as an unnecessary risk, especially when there is no compelling reason to change. In this environment, respondents are unlikely to indicate a high need for new technology. Here too, the focus on technology is probably misplaced. Most instructors probably do not see a clear relationship between their instruction and technologies.

Next, there needs to be a better understanding of why faculty have their existing attitudes around instruction and technology. Why is a faculty member reluctant to use new technologies, even when the technologies are readily available? It could be that there are institutional constraints that are preventing even those instructors who are more inclined to increase the use of technology in their instruction, from making this change. Without a better understanding of these challenges, it is unlikely that these problems can be adequately addressed, so the culture is unlikely to change.

Finally, surveys conducted around instructional technology typically have been of instructors alone, without examining the attitudes of students at the same time. While many students are known for their existing technology literacy, this does not necessarily translate to an increased demand for the use of instructional technology in their instruction. The instructional environment in which they are most familiar is often the traditional one. Just like the instructor, moving to a new environment can reflect a significant change and risk for the students. But without closely examining student attitudes, assumptions will need to be made, which may not accurately reflect those held by students.

Therefore a different focus is needed in the proposed survey to better inform policy and encourage evidence-based decisions. One way to do this is to put the emphasis on the

educational and pedagogical needs, existing constraints around technology use, and examine how technologies are currently being used. By focusing first on the underlying needs, then it is possible to suggest tools that are available and appropriate. The underlying needs and challenges are less likely to change over time, unlike the specific technology (or version) that is likely to frequently change.

As part of this process it is important to better understand how instructional technology is currently being used, and understanding what constraints affect the use of instructional technology. For example, most LMSs offer a number of different tools and capabilities, such as instructional notes, discussion forums, whiteboards, synchronized chat, etc. We often have a good understanding of how often the program is being used (e.g., the number of classes using these tools, or the number of students who log into a LMS during a term), but we know considerably less about how many of the available tools within the program are being used within classes. We often do not know why some of the tools within the LMS are being used while others are not.

So the proposed evaluation should try to examine the following topics:

- What challenges are noted in teaching the subject matter that instructional technology tools might be able to help address?
- How are existing technologies being used? How frequently? Which components are being used, and which are not? What is the rationale for the current use?
- What are the perceived barriers that are preventing appropriate instructional technologies from being used more frequently?
- Are instructors aware of the instructional technology tools that could be beneficial?
- How are the attitudes of students and instructors around instructional technology similar and different? Why?

By keeping the focus of the proposed evaluation on both instructional needs and student learning needs, it might also be easier for faculty and students to reflect on their approaches, and to have productive discussions around these approaches. As these approaches shift, so can the use of relevant technology tools to match these needs. Finally, by gaining a better understanding of the challenges around the use of technology for teaching and learning activities, it should be easier to develop strategies to try to address those challenges.