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Teaching with Technology

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Teaching with Technology

MEMORIAL UNIVERSITY has a long tradition of distance education, and during the last five years, I have taught the history of Canada, the North Atlantic World and Newfoundland for the Division of Continuing Education. These courses were originally intended to serve students who do not have access to the campus, and they were designed with the assumption that students would only have access to material which I provided. Course manuals, readings and texts are provided to the students through Canada Post, and, increasingly, electronic means of communication are used to add an interactive component. The development of web-based distance education courses, and the incorporation of the world wide web into the classroom as a source and pedagogical adjunct, have been greeted with either fear or hyperbole by many teachers. Neither reaction is entirely rational. As a pedagogical tool, the web offers challenges, but each challenge is an opportunity.

I would not characterize what I do as "distance education" in the sense of a university-based instructor bringing a course to rural students. Sixty per cent of the students in my courses reside in St. John's and for a variety of reasons choose to take courses in this format. Most students choose distance education courses due to the flexibility of the format (students with jobs and families) and because such courses do not require interaction with peers or instructors. Sixty-two per cent of these students first enrolled at Memorial more than six years earlier, and they are also more likely to have part-time status. While students living far from the campus are more likely to be younger, they nonetheless have some compelling reasons to not be on campus. Needless to say, the high cost of a university education encourages students to study part-time. While student motives for enrolling in a course that is taught in an alternative to classroom format vary widely, my experience has shown that a large market exists for the flexible non-classroom course, even though they are pedagogically inferior in many respects.

On the whole, while students have succeeded in correspondence courses, there is an inherent lack of interaction. Students feel cut off from any contact, and opportunities are restricted for instructors to assist students having difficulties with the material. Often problems do not become apparent until students submit work, at which point it is too late to do anything to address their difficulties. Memorial has long attempted to resolve this weakness through teleconference sessions. The instructor and groups of students go to designated sites and through the use of speakers and microphones have a conference call. But high student numbers, different time zones and availability of the teleconference sites limit the effectiveness of teleconferencing.

The proliferation of access to the internet offers an alternative method to make distance teaching more interactive. Web-based courses provide a feasible method of adding interaction between student and instructor and between students themselves. The pool of available students remains, at the moment, slightly smaller for web-based courses. A recent survey of distance education students at Memorial found that approximately 55 per cent had access to the internet. Only a portion of those, of course, would be comfortable enough with the technology to want to take on a course that is effectively an experiment in new methods of delivery.

I will give a brief description of a simple web-based course for those who are not

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familiar with the technology. Students can retrieve written lectures, readings, documents, maps, photographs, animation, video and audio clips on their computer screen. Ideally it can be the equivalent of a multimedia textbook – which, if linked to other resources, is open-ended rather than limited in its discussion of particular topics. A student might go outside the set curriculum by searching databases and other sites for further information on a relevant topic. The other striking feature of such web-based courses is that they are hypertexual; a student can jump from one topic to another in any order. As with an encyclopedia, the reader does not need to start with Aardvark and read sequentially to Zygote; one can start with any topic and read further topics non-sequentially. Clicking on a link within a website can bring one to related topics as any cross-referencing system can. Students may cover material in any order they choose and at their own pace.

The difference between these sources is that while the encyclopedia has a limited amount of text, on the web students may search sites around the world and retrieve a large amount of data on almost any topic. I use the word *data* rather than information intentionally, since information informs, while the term data is neutral. Consuming data may or may not add to one's understanding of the subject. While the apparently infinite amount of data is an attractive feature, the lack of peer review among website authors means that there is no quality control. Students in a web-based course need special instruction in research methodology to ensure they are getting the kind of material they are looking for, as well as the skills to evaluate which sources are reliable. To take one graphic example of what may happen, I used the terms "History", "Newfoundland" and "Radio" in several search engines. A search engine is a computer programme that searches through websites to find the occurrence of key words. None of these searches turned up any information on the history of broadcasting in Newfoundland, but all of them found a fake history of the Broadcasting Corporation of Newfoundland written by the satirists of the former CBC radio show "The Great Eastern". Anyone unfamiliar with the fact that the programme was a parody could be forgiven for believing that the BCN was housed in an abattoir. The existence of large amounts of data on the internet is a strength, as long as students have the intellectual tools to sort out the wheat from the chaff. Research and critical evaluation skills have long been things that academic historians have taught, and the popularization of the internet as a source of information makes these aspects of the teaching of history of increased relevance. As the public can no longer count on electronic publishers to act as gatekeepers, as flawed as that system is, any web-based course needs to provide a discussion of things such as Boolean searches and critical evaluation of texts.

The other salient feature of web-based courses is their relative interactivity when compared to traditional correspondence courses. There is a sort of fake interactivity – multiple-choice quizzes can be automatically marked by the computer so the student has some sense that they are remembering specific facts well or poorly. The fact that these are multiple-choice quizzes limits their usefulness as a tool to measure understanding. There is also a range of opportunities for genuine interaction between student and teacher and between students themselves. At one end, students are able to e-mail to the instructor questions or comments, and get replies that address their concerns. I get great benefit from this and find that getting the questions in writing allows me to consult sources before drafting a reply in the instances when the question is very specific.

At the other end of the continuum of student-teacher interaction are discussions in which all students and the instructor are able to read each other's questions and comments and take part in a discussion much as one might do in a seminar room, except that the whole of the discussion is in text. It may also be possible to conduct such classes using video and audio transmission. These discussions metaphorically take place in chatrooms and may be synchronous or asynchronous. Synchronous means that the discussion takes place at a particular time, and, like a conference call using the telephone, all the students need to be at their computers at the time the discussion is taking place. Given disparate time zones and the fact that a large number of students are taking the course in this format because of family and work commitments, these are less satisfactory than asynchronous discussion groups. In such discussions, all messages from the instructor and students are available for everyone to read at a time of their own choosing. Some educators also theorize that shy students who are reticent to speak in front of their peers in the classroom will be bolder in expressing opinions in the anonymous realm of cyberspace. In both synchronous and asynchronous discussions, the instructor takes on the role of moderator, as in the seminar, and must ensure that the discussion is productive. The asynchronous discussion is superior to the seminar in two respects. The students are able to engage in many different "threads" or discussions on different topics, and they can review all the preceding posts on a particular topic.

Designing curriculum requires some thought not only as to the pedagogical objectives, but also regarding the characteristics of the students. In the classroom we are able to adjust to the students on our feet, but this is not the case when designing a course for distance education in which the material needs to be provided to the printers or website administrators months ahead of the start of the course. This requires that the instructor imagine who the audience will be and foresee how to best deliver each component of the course. Only two of the 127 students who took Pre-Confederation Canada and the History of Newfoundland before 1815 during the winter 2000 semester had declared themselves as history majors. We can add to that a handful of history buffs in other faculties and departments and a few mature students who are not working toward a degree. A larger group would be those who need a history credit to fulfil the requirement of their programme, or who are looking for any distance education credit to complete a half-finished degree. I would expect second and third-year courses on campus to have a higher portion of majors in the discipline, but in other respects the motives for enrolling in a history course are similar.

This presents a dilemma when designing the course. The distant students, for whom the course was initially intended, are a minority. They are also disadvantaged. The students in Korea, Arizona, Whitehorse, Brampton and rural Newfoundland and Labrador do not have the same access to resources as the 60 per cent of students who can use the Memorial University library. While the library has an excellent service for students working at a distance, time delays during a 13-week term, and ease of research for those who live near St. John's, ensure that access is not equal. While the internet may level the playing field one day, this is not the case at the moment.

Despite the promise, and the hype, about the interactivity of web-based teaching, the reality is that most students do not choose to interact. Some of them are enrolling in a non-classroom format course because they do not want the traditional classroom experience. The prospect for creating dialogue between instructor and student and

between the students themselves is thus limited, not by the technology, but by social factors. Getting the participation of students who choose the "distance education" format because they do not want the interaction of the classroom will always be a challenge. My experience is that the on-line discussion group is not used by students. A large number of students do not have access to the internet, and those students who are able to use on-line discussion groups are usually hesitant to participate in something that is not required. E-mail inquiries and phone calls during office hours are most often about the evaluation of students' work, rather than the content of the curriculum. The potential exists to make greater use of asynchronous discussions in something which is the equivalent of an on-line advanced seminar, but this will likely remain limited in courses which are the equivalent of lecture surveys. There are limits to how much 60 people can say to each other. Furthermore, the web discourages interaction by making each student's content personalized. As a result there is no common basis of knowledge upon which one can communicate with another person. Lastly, many students download and print the entire website upon enrolling in the course, effectively turning it into a print-based correspondence course. This makes the material more conveniently accessible, but undermines the instructor's attempt to encourage interaction and leaves students unaware of any changes in the course content made during the semester. For ease of reading and to save students money, I provide the lectures printed on paper and save the space on the website for animations and interactive projects.

The temptation exists among people excited by the prospect of teaching through the internet to take their lecture notes and dump them onto a website and call it a web-based course. The nature of the medium dictates that some thought be given to the presentation of the material. While it is sometimes a challenge to keep the attention of a class through a 50 minute lecture, it would be even less effective to have the students read that amount of material as text. To start, a file of that size is slow to download and print and laborious to read on the screen. The use of the technology encourages the division of material into sections that are not much longer than two or three computer screens. Creating a representation of the past that consists of small digestible bits of data is exactly what students accustomed to browsing the internet expect, and thus the familiar format improves accessibility. Yet there are both practical and pedagogical weaknesses to such a structure.

First of all, students can get disoriented in a website that contains many sections of lecture material, readings and documents. Keep in mind the random browse-and-click nature of all of their experience with the web. This may be combated though site maps, schedules and signposting so that the student knows where he or she is in the course material and has a sense of where the material is leading. Nothing beats clear articulation of objectives and tailoring the material to meet those goals. The nature of such a website makes the material overly discrete. The lack of pattern, narrative or argument makes browsing through material time-consuming, giving the student the feeling that he or she put the time into the course without the student actually retaining very much. And the act of having downloaded the material may in the student's mind be rationalized as having covered the topic even if the student has no idea how that unit of data is significant to the larger themes, or has not even read it. Having browsed though data does not necessarily imply synthesis or understanding on the part of the student.

There are other patterns of use embedded in the technology that have implications

for the way we work. Users of the technology are habituated to a point-and-click method of research that measures time in fractions of a second. This encourages students to expect questions to be answered instantly and thus discourages the experience of working through material to find an answer. This is a sort of calculator syndrome, in which people lose a sense of the process of arriving at an answer and uncritically accept the answer on the screen even if it is not the answer to the question that should have been asked.

Such a system of short discussions of topic after topic makes it difficult for the author to sustain any sophisticated and nuanced argument. The tendency to list bits of data in arbitrary order is dominant on websites. I often see 500 words or so on one topic followed by 500 words on another discrete topic. Photographs are added to give a visual dimension to the site without the graphic adding anything to the content to be imparted. Aspects of the past are thus presented as a mosaic of equal elements without narrative structure or analytical unity. The commercial nature of the web is also structured to make all users into consumers whose experience is non-mediated. In other words, the Borg-like web assimilates us as individuals who consume discrete units of data of our own individual choice all without experts or community standards to mediate the meaning for us. The tendency of the technology discourages some of the uses to which we want to put it. The commercial nature of the web encourages hardware and software design that meets the needs of commerce. To take one example, the desire to have consumers purchase goods on-line has directed much effort to internet security. Other potential uses of the technology have not been developed and many of our uses of the world wide web must run counter to the easy paths.

The literature on teaching in a "virtual learning space" originates in a pedagogical approach that includes "resource-based learning" and "student-centred facilitating" as well as a fetish for technology. Some of the practical advice in this literature makes sense, such as suggestions to set clear goals for students and to be clear about expectations, but this approach also seems to privilege the goal of interactivity over actual content. "Guide the conversation", we are told, "but don't dominate it". Some educational experts advise "don't lecture", as "coherent postings provoke silence". Instructors, they continue, should only "use short open-ended comments that invite response". To translate, a professor displaying his or her knowledge and understanding of the topic by correcting misunderstandings or providing information is a bad thing, since this intimidates students into thinking that their own views are inadequate and do not merit posting on the web. Some students enjoy a free discussion in which the absence of knowledge of the topic is not an impediment to expressing an opinion, and chatrooms encourage this. This leaves no place for those of us who are an *authority* on the past. The laudable objective to have students engage material and attempt their own synthesis must not overwhelm the teacher's role as expert in the field. Otherwise we are just redistributing the students' preconceived notions.

The pedagogical literature on teaching in a "virtual learning space" originates in a naive faith in technology. The faith in technology as a miraculous tool to foster learning predates the popularization of the computer. In the 1920s many educators were thrilled by the potential they saw in radio broadcasting. They saw it as a technology which would bring "experts" into every classroom, revolutionize learning and end warfare by fostering greater international understanding. This latest

technology of communications offers us the ability to do some new things, and many old things in a slightly different way, but it remains nothing other than a tool. It is a tool created by the American Department of Defense and handed over to American corporations to be commercialized. It is up to us, as intellectuals who care about the communities in which we live, to carve out in cyberspace the room required for the teaching of history.

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