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Tools for Information Literacy

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Abstract:

eTools for Success *is an online information literacy tutorial designed to supplement the content of a first year experience course, Introduction to University 099.111. Combining many years of in-class library orientation sessions with the lessons learned from library tutorials like TILT, eTools developed into an interactive learning tool which exposed students to both information literacy and electronic literacy skills. eTools was also the product of a unique partnership of several key departments within the University. As an engine of change, eTools not only enriched course content in a new way, it also broke down traditional organizational boundaries and paved the way for the development of the University of Manitoba's first virtual learning commons, emporiUM.*

Background

The University of Manitoba (UM) is a land grant, research-based university with a total 2005/2006 enrollment of 28,049, of which 24,267 are undergraduate students[1]. As the largest of Manitoba's four universities, UM strives to make its programs accessible to a wide population. New undergraduate students are a particular priority, and the university has developed a program within the Faculty of Arts which is geared to their needs of first year students. This program is called University 1, and its stated objectives are is to

> provide each student with the best possible personal and academic transition to the University of Manitoba. As such, University 1 is designed to give you the opportunity to adjust to university life and its academic demands, explore options, and gain experience before you make definitive decisions on academic and career goals. Through its programming, University 1 provides you with the opportunity and information to make informed choices.[2]

The premier University 1 course within the University 1 program is *Introduction to University 099.111,* also known simply as 099.111. This is a large enrolment first year course taken by 35% of all first year students. It is designed to help students make the transition from high school to university, "by imparting the knowledge, skills, and attitudes requisite for success in university study."[3] . First-year students often find thise transitional year difficult, and there is a high dropout rate. 099.111 aims to alleviate these difficulties and improve student retention by introducing students to the academic life and by providing greater personal contact with instructors than would be typical for a large intake course. Given over The 12 weeks, the course is offered in the fall term and again the in the winter/spring term. There are 30 - 33 45 sections (depending on enrolment) capped at 30 students each , in the fall term, and 20 -22 sections of 30 students in the winter term. Each instructor in each section follows the same overall syllabus, which covers such topics as study skills, time management and communication styles.

Fundamental to the course are modules on research and writing skills. Most Canadian students enter university with little or no knowledge of what is expected inin academic research and writing and often do very poorly in their first assignments, which in turn contributes to the dropout rate. 099.111's emphasis on academic research and writing is designed to give undergraduates gives them a foundation upon which they can build on for future academic success in their chosen disciplines.

The research piece of the course was usually was supplemented with traditional-style library tours and orientation classes, provided by the reference librarians atof the Elizabeth Dafoe LiIbrary. The University of Manitoba Libraries is a federation of discipline-specific libraries distributed between two urban campuses as well as among several hospitals and care centres throughout the city of Winnipeg. The largest library in the federation is tThe Dafoe Library is the largest library in this federation, servingwhich serves seven faculties, which includeing the Faculties of Arts (Humanities, Social Sciences), Education, Nursing, and Social Work, as well as "the University community, off-campus students, and the general public".[4] Dafoe is also the "home" library for 099.111 students.

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[1] University of Manitoba Office of Institutional Analysis. The University of Manitoba November 1st Enrolment Executive Summary. 2005-2006.
http://umanitoba.ca/admin/institutional_analysis/new_rept/execsummary_nov_06r.pdf

[2]

[3] University of Manitoba, University 1. Introduction to University 099.111.
http://www.umanitoba.ca/student/u1/99111/index.html

[4] University of Manitoba. Elizabeth Dafoe Library. About the Library.
http://umanitoba.ca/libraries/units/dafoe/about/general.shtml

While Dafoe librarians provided basic library instruction to 099.111 students for many years, there was always a sense of frustration with the way that the instruction occurred. Attendance at these sessions was at the discretion of the section instructor, and was optional for the students. Some instructors wanted the typical "one-shot" session on how to use the catalogue and journal databases, while others were content with walking tours of the building. Some wanted a combination of the two, and some didn't bring their students to the library at all. In each case, librarians saw the students for no more than an hour, and the content of the sessions was generic and usually unrelated to course outcomes or assignments. There was also a lack of continuity in dealing with instructors, who all held sessional appointments. Since there was no guarantee of the same instructors returning each year or even each term or year, any instructional improvements made one year would not necessarily be used again in subsequent years. For example, a library assignment was developed by one of the librarians and used with some success, only to fall out of favour be abandoned later.

The result was a patchwork of instruction, resulting in a hit-or-miss approach to foundational research skills. There was no noticeable improvement in student research skills or library use, and students still required a great deal of "handholding" at the Reference desk. With a total course enrolment of 900 1400 or more students in the fall, and with assignments falling due at the same time for all sections, the load on the Dafoe staff was a heavy one. Overall it was felt that there was a lot of effort put in by the library, for very little return.

With the hiring of a new Libraries' Information Literacy Coordinator in 2002, one of the areas that was identified as needing the most attention was library instruction for 099.111 students, and. particularlyIt was strongly felt by librarians that there needed to be more communication with the instructors, and that some way to connect that instruction had to be connected to the coursework itself. Particularly problematic were assignments that were developed without librarian input. Bwere based on the course textbook, these assignments often had little or no connection to supporting materials in the library's holdings, resulting in great frustration for students and librarians alike.but not on the library's holdings.

The Information Literacy Coordinator met with various stakeholders throughout the fall of 2002 and in December 2002, a proposal was presented to the Program Coordinator for 099.111.

Based on the Association of College and Research Libraries' *Information Literacy Competency Standards for Higher Education*[5], the proposal shifted the emphasis of instruction away from a mechanical, product-based approach (i.e. how to use the catalogue, how to use a particular database) to an outcomes based approach, i.e how will a student know when to use the catalogue, how and why will they choose a database, in which circumstances would they use a website? In addition to traditional content on library use, the new content would include instruction in the use of the University's computer network, as well as sections on writing, citing and plagiarism. In other words, the classes were intended to cover the whole research and writing experience. In addition, tThe library classes were to be more closely linked to actual assignments, in terms of content and timing, and assignments would more realistically reflect library holdings.

[5] Association of College and Research Libraries. Information Literacy Competency Standards for Higher Education. Chicago: American Library Association, 2000. http://www.ala.org/ala/acrl/acrlstandards/standards.pdf

In order to accomplish delivery of this new information literacy (IL) curriculum, the Libraries group negotiated 4 instructional sessions instead of one, which represented 1/3 of the course's 12-week duration. The 099.111 Program Coordinator took the bold step of making attendance at all 4 sessionssessions were mandatory for all students and all instructors. An assessment piece was added as well. ItAssessment was included delivered viabyin the form of a WebCT-based quiz, which was worth 5% of the course mark, and represented the first time library orientation for 099.111 a "library tour" was marked.

A New Partnership.

The success of this proposal emerged from a collaboration among University units which had not worked together before: the Libraries, the University 1 program, the Student Advocacy Office/Learning Assistance Centre (LAC) and the Academic Computing and Networking (ACNCAN) group. For years each unit had its own menu of classes, seminars and workshops, offered to students as a supplement to their course work, but until 2002 there had been no joint offerings. The information literacy standards allowed each of the partners to see that they were each of them was already teaching pieces of the IL continuum, but had yet and provided a framework in which they could assemble ato merge into a wholenew collaborative program.

eTools for Success

The new collaborative program This program was called "eTools for Success" since much of the content covered access to, as well as the use and evaluation of, electronic resources. The first version of eTools was delivered via face-to-face sessions inin the 2002/2003 academic year.

The program took a modular approach. The first module dealt with access to the University's network, how to find library resources within that network, and how to use the library catalogue. Instead of simply being shown the "how to's", students were also introduced to the academic research process: developing designing a research question, creating a thesis statement, developing evidence to support an argument. In this context, examples from the library catalogue were taken from linked to topics in the course syllabus.

The second module examined the difference between a book and a journal and looked at what periodical literature was and why it was so vital to academic research. The third module demonstrated a typical database and followed the process of looking up and finding relevant articles. The module then ended with a comparison to Web resources and asked the question: why use databases when you can use the Web? Students were introduced to the idea of evaluation of information by examining both real and "bogus" websites. The idea that while accurate, not all information was suitable for academic use, was also introduced.

The fourth module brought all of the information together by teaching students the fundamentals of academic writing, how to cite properly, and how to avoid academic dishonesty.

The first and fourth modules were delivered in person by ACN staff and LAC staff respectively, in two of the University's microcomputer labs which gave students an opportunity for hands-on practice. The Libraries' modules were delivered by Libraries staff in borrowed universityin classrooms, since none of the Dafoe facilities could accommodate groups of 30 or more students. Classroom facilities were not uniform. Ssome of which rooms were "smart" classrooms which housed digital projection

equipment, instructor workstations and had live network access, while in others the most “hi-tech” item was an overhead projector. some of which did not. In order to be prepared for any situation, the Libraries’ modules were taught using Powerpoint. The slides were designed by the Information Literacy Coordinator in consultation with Dafoe librarians. In order to overcome the static (and sometimes soporific) effect of Powerpoint, the presentations made liberal use of animations, images and screen captures in an effort to overcome the lack of live access. Librarians were also encouraged to engage students in active learning whenever possible, by having them answer questions or give comments on issues, or having them describe information resources. Librarians unfamiliar with active learning techniques observed sessions where these techniques were used.

Reactions:
The response to eTools was largely positive, from the partners, instructors and students. Some feedback was received in class and through Tthe WebCT quiz which included a comments section. The response was largely positive from both instructors and students and t, as well as from the program developers. The most common observationobservation was that students would have preferred hands-on instruction for all sections. However, they also indicated their appreciation for the Powerpoints, with a majority indicating that they were their favourite part of eTools. Perhaps the most surprising result was that participation in the quiz was not universal, with only about 2/3 of students successfully attempting it.completing it and the other 1/3 never attempting it.

eTools was immediately seen as a significant step forward in providing foundational information literacy competencies for new students, but the logistics of scheduling and delivering classes to 14600 students in 40 sections proved to be daunting. As well, a number of 099.111 instructors felt that they were losing too much classroom instruction time to eTools. Although eTools was more closely linked to course content and objectives than any previous instructional offerings, it still was not completely integrated into the curriculum and was still considered to be an “extra” by many instructors.

Several adjustments were made in subsequent terms, including downsizing from 4 to 3 sessions, and streamlining the quiz. With the hiring of a A new Program Coordinator for 099.111 was hired in 2003 ,and immediately came aboard the project with enthusiastic support. eTools made an appearance in the course syllabus for the first time, as a required supplemental activity. However concerns about staffing, space and scheduling continued, and alternatives were examined. Technology offered an obvious solution, and in the spring of 2005 the new Learning Technologies Centre, along with the original eTools partners and new participants, began the work of developing a web-based tutorial using the classroom-based eTools content.

Tutorial or no Tutorial? That is the Question.
The decision to move to an electronic version of eTools made a lot of sense from an organizational perspective, but it generated some controversy from among instructors and librarians who were concerned about the pedagologigical soundness of the approach. There was also a lot of anxiety about the loss of personal interaction with the students. In debating the pros and cons of creating an electronic version of eTools, the University of Manitoba was covering well-known territory.

Computerized library tutorials are not new. With the pervasiveness of the Internet, web-based tutorials were have been developed which took take advantage of all the flexibility online services could offer. To quote Bracke and Dickstein, “the library

literature is awash"[6] with articles, case studies and commentaries on the advantages and disadvantages of library tutorials, most of which were read in the course of planning and developing eTools Online. It is not the purpose of this paper to navigate through that tide of tutorial information, but to highlight several key studies which summarize the thinking about tutorials over the last few years.

The forerunner of today's web-based tutorials was TILT, the Texas Information Literacy Tutorial. Originally developed in 1997, TILT has spawned more than ……. tutorials based on its open-source software.Several of the studies consulted for the eTools Online project and this paper began with a discussion of the administrative advantages of computerized tutorials, allowing libraries to do "more with less". Certainly, concern over availability of organizational resources was one of the main drivers of the eTools Online project. As Donaldson noted:

> "in many institutions the traditional in-class bibliographic instruction session is no longer a viable alternative due to limited resources, increased demand to access information from remote locations, the omnipresent changes in technology, and the reality that librarians have only a finite amount of time and places with which they can teach such skills." [7]

Paired with Beagle's review of faculty literature which included the observation that "traditional libraries will likely be replaced by digital libraries providing online resources in addition to course materials"[8] and hearing this view echoed all too often in the popular media, it is not surprising that when the eTools Online project was first discussed with University of Manitoba Libraries (UML) librarians there was some nervousness about switching to an online library tutorial for 099.111 students. Some librarians also felt that they would lose their connection to students, as well as their control of the content. Since teaching is highly valued at UML it was believed by some that a move to an online tutorial would undermine the librarians' instructional role.

Another question was about the effectiveness of the tutorial vs. traditional instruction. This is difficult to measure, since most traditional "one-shot" library instruction sessions do not have an assessment component. S. Michel noted that in reviewing the literature, "in every study, CAI (computer aided instruction) was found to be as effective or more effective than the more traditional forms of instruction."[9] Interestingly, at Michel's own institution, it was found that "only 50.4 percent of students and 25 per cent of faculty prefer[ed] or strongly prefer[ed] the Highlander Guide to traditional instruction."[10] UML librarians also had mixed feelings about tutorial effectiveness, especially those that were not directly linked to course content and assignments.

Tutorial design, in terms of both content and "look and feel" was also considered, and found to be not entirely satisfactory. In reviewing existing online tutorials to look for exemplars that could be used in the design of eTools Online, it was noted that many of them were standalone, extremely linear and quite text-heavy. In effect many of

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[6] Paul J. Bracke and Ruth Dickstein. "Web turorials and scalable instruction: testing the waters." Reference Services Review. Vol. 30, No. 2, 2002. p. 331.
[7] Kelly A. Donaldson. "Library research success: designing an online tutorial to teach information literacy skills to first-year students." The Internet and Higher Education. Vol. 2, No. 4. p. 237.
[8] Donald Beagle. "Web-based learning environments: do libraries matter?" College & Research Libraries. July 2000. p. 369.
[9] Stephanie Michel. "What do they really think? Assessing student and faculty perspectives of a web-based tutorial to library research." College & Research Libraries. July 2001. p. 321.
[10] Ibid., p. 326.

them were (and many still are) online versions of traditional library pathfinders. "Just making content available is not education. Learning requires action, interaction and application.".[11] In doing similar background research for the development of Seneca College's tutorial, Donaldson found that "many of the best tutorials consistently incorporated the use of active learning."[12]

As early as 1999, Dewald argued that content had to promote learning, not just present information. She identified 7 characteristics of good library instruction which should make the transition from classroom to computer screen:

1. library instruction is best received when it is course related and specifically assignment-related;
2. active learning is of more benefit than lectures alone and is accomplished with individual or collaborative exercises…or other forms of practice to reinforce instruction;
3. collaborative learning allows the instructor to step back and encourage critical thinking and group problem solving;
4. offering information in more than one medium accommodates different learning styles;
5. clear educational objectives are important for both librarian and student;
6. good library instruction teaches concepts, not merely mechanics, such as which buttons to push;
7. good library instruction includes the option of asking the librarian for help at any future time.[13]

Donaldson also discovered that

> "many of the best tutorials took a modular or sectional approach…Breaking down instruction tutorials into manageable sections (modules) while remaining linear and allowing for step-by-step acquisition of skills, prevents the user from becoming overwhelmed with information. Modules are also useful in that they facilitate self-directed learning…This degree of choice is empowering to the user, but also serves to accommodate students with varying levels of knowledge and comprehension.[14]

The forerunner of many of today's modular-style tutorials was TILT, the Texas Information Literacy Tutorial. Originally developed in 1997, TILT inspired the creation of many similar tutorials over the years, some of them using TILT's own open-source software.[15]

It was agreed that the modular approach was one that would work well for eTools, since the in-classroom sessions were already presented as a series of interconnected modules. The Powerpoint slides for the UML portion of eTools were already organized into sections, and had been made available to students as downloadable files if they wished to review the class lectures. While it was acknowledged that the modular approach could work well, there was still a great deal

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[11] Nancy Dewald et. al., "Information Literacy at a Distance: Instructional Design Issues." The Journal of Academic Librarianship. Vol. 26, No. 1, p. 38.
[12] Kelly A. Donaldson. "Library research success: designing an online tutorial to teach information literacy skills to first-year students." The Internet and Higher Education. Vol. 2. No. 4. p. 241.
[13] Nancy H. Dewald. "Transporting good library instruction practices into the Web environment: an analysis of online tutorials." The Journal of Academic Librarianship. Vol. 25, No. 1 p26-27.
[14] Ibid., p.241.
[15] Clara S. Fowler and Elizabeth A. Dupuis. "What have we done? TILT's impact on our instruction program." Reference Services Review. Vol. 28, No. 2, 2000.

of concern that the interactivity that marked the classroom sessions would not translate into the online version.

On the whole, then, the migration of eTools from a classroom to an online version was not met with unbridled enthusiasm by all the participants, who felt there was as much to lose as there was to potentially gain by going electronic. However, even though there were many unanswered questions, the UML librarians realized that "when the online agenda moves to the center of university programs and when all aspects of library services enter cyberspace, it becomes inevitable for IL instruction to go online." [16] What remained then, was to find a way to deliver the online version of eTools content as well as, or even better than, the classroom-based version.

Brief literature review, pro & con.
Linking paragraph here which will lead from lit review to instructional design.

The Design of eTools Online

Even though administrative and logistical concerns accelerated the evolution of eTools from a classroom-based to a web-based tool, Tthe instructional design of the eTools Oonline version focused on developing student centered and testable learning outcomes, developing assessment tools that tested the outcomes, and developing learning activities that promoted active student learning, information retention, and transfer of learning to other contexts. The design also addressed a variety of learning styles and attempted to make the learning materials relevant and enjoyable..

Learning outcomes were developed for each of the three modules of eTools Online, ensuring that they were clear and student centered, used active testable verbs, and included outcomes that tested some higher order thinking skills. Learning outcomes were also developed for each of the 25 interactive Flash tutorials incorporated into eTools Online and .were based on the ACRL's Information Literacy Standards. The following is an example of the learning outcomes for the Doing A+ Research section of eTools Online.

"When you finish this unit you should be able to:

- develop a topic for research through exploring, narrowing or broadening an initial question;
- recognize and describe the variety of information sources available for research at the University;
- decide on appropriate information sources and tools for projects/assignments; develop a search strategy based on your chosen topic;
- locate and select information in appropriate information sources;
- assess /evaluate the information for suitability to your purpose;
- and use appropriately the information you have located and evaluated in your assignments."

Procedures for assessing student progress are were designed to be consistent with the learning outcomes and continued to be delivered through WebCT. . An online 15 question summative assessment is delivered through the University's online learning management system. Students are were given one hour to complete the assessmentquiz, which wais available for a two-month period. A pre-test ensures ensured students understand understood the technical mechanics of the online quiz format. The quiz focuseds primarily on knowledge and comprehension skills and

[16] Hua Yi. "Library Instruction goes online: an inevitable trend." Library Review. Vol. 54, No. 1 p. 50.

addresseds outcomes such as “recognize and describe the variety of information sources available for research at the University.”

Higher order skills weare tested by the course instructors through the term paper that students weare required to submit on a topic of their own choosing. Three examples of outcomes that are addressed are: “develop a topic for research through exploring, narrowing or broadening an initial question,” “assess /evaluate the information for suitability to your purpose,” and use appropriately the information you have located and evaluated in your assignments.

Learning centered activities weare integrated throughout the tutorialeTools Online requiring students to be actively involved in the content to promote better understanding and information retention. For example, the Doing A+ Research and Writing an A+ Paper sections, have been were specifically designed to assist students in writing their first research paper, guiding students through the process of first understanding what the assignment is about and what is expected of them, deciding what information they need to complete the assignment, recognizing what information is available to them, developing a search strategy, and learning how to locate, evaluate, and finally, use the information.

The development team recognized that many students use the web as a major source of information and designed material to help them recognize the “good stuff” on the web and also recognize the shortcomings of the web. To address the growing problem of plagiarism, a section on recognizing plagiarism that was developed at Vaughn Memorial University was adapted for use in eTools Online. The team developed 25 interactive flash tutorials many of which require students to perform the activities that were being demonstrated. In one example, students conduct a simulated interactive search of the University of Manitoba online library catalogue, rather than having students simply view a demonstration of a search. Different learning styles were addressed by having the materials presented in a variety of formats, including print, audio, graphics, and animation.

Opportunities for practice and transfer weare integrated throughout the tutorialeTools Online. In the Doing A+ Research, Assignment One section students are introduced to the assignment manager, a tool designed to assist students in deciding what their assignment is about and what they need to do to complete it. This tool allows students to save, modify and retrieve research strategies to and from a database. Students are encouraged to use their first assignment in the course as the source for the data that this interactive portion of the tutorial requires. This tool is used again in the Doing A+ Research: Assignment Two section. The assignment manager further allows students to save data related to research strategies for three other assignments of their own choosing. It is hoped that using the existing assignments in the course as the source of data will promote transfer of learning from eTools Online to actually writing the paper. It should be noted that the assignment management tool and the assignment calculator were originally developed at North Carolina State University and adapted for use in eTools Online with their permission. Other opportunities for practice exist in many of the Flash tutorials. In addition, an automated email responder that was written to ensure that students can successfully attach an assignment in the proper format to an email.

Presenting this material as an online interactive tutorial is particularly effective as many of the skills the instructors are teaching require students to use online resources, making the technology choice directly relevant to the learning outcomes. For example, the interactive demonstrations of the library searches were developed using Flash and actual screen captures of the electronic databases. The flash

tutorials allow the students to try a search under controlled conditions permitting us to present both successful and unsuccessful outcomes searches as well as focusing on specific types of searches.

While a formal needs assessment was not conducted, the team ensured that student needs were addressed. Student needs were drawn from the experience of the course instructors, librarians, student advocacy staff, information systems staff, and a distance education instructional designer all of whom work directly with both distance and on campus students and are familiar with the problems students encounter in the three areas addressed by eTools Online: doing research, writing papers, and going online to access the University of Manitoba online resources.

The development team

The success of this project depended on the cooperation of several different units who contributed significant staff time. The development team consisted of:

- the course coordinator for Introduction to University;
- content specialists from the Libraries, Information Services and Technology, Student Advocacy, and the Learning Assistance Centre;
- an instructional designer from Distance and Online Education; and
- and technical specialists from the Learning Technologies Centre.

The course coordinator reviewed all the materials and provided important guidance specific to the course.

The content specialists were responsible for developing the instructional content, including preparing learning outcomes, developing assignments, writing instructional content, and developing learning activities. They also previewed and recommended audio/video materials or other media where appropriate. For example, in looking for an exemplar for the Libraries' piece, North Carolina State University Library's award-winning tutorial, LOBO (Library Online Basic Orientation) was found to have many features that would fit UML content requirements "and participated in the development of any in-house produced media. [17]. Content specialists also participated in the development of any in-house produced media.

The instructional designer was responsible for managing the development process; providing instructional design direction, consultation, and feedback to the content specialists, including editing, ensuring clarity and logical sequence of content presentation; ensuring the appropriateness of content, exercises, evaluation, and media; and ensuring that the final proof of the course materials was complete and correct.

The content specialists and the instructional designer shared several responsibilities, including developing the overall structure of the content, developing the learning activities, and locating and choosing appropriate media.

The technical specialists developed the learning content management system, the assignment calculator, the assignment manager, the email responder and moved the content online, including development of interactive movies in Flash.

The process

[17] North Carolina State University Libraries. LOBO. http://www.lib.ncsu.edu/lobo2/

The development team used a three phase process that has been used successfully in the Distance and Online Education program. Phase One was primarily a planning phase and an opportunity to try a small piece of design. In this phase the learning outcomes were identified, the student assessment was developed, the content was outlined, and ideas for learning activities were generated. A small portion of the design was completed to see if the process was working effectively for everyone. In Phase Two the remaining content was developed in preparation for moving the materials online. PowerPoint was an effective tool for preparing the prototypes, or "storyboarding". Also in this phase the technical specialists developed the learning content management system, incorporating feedback from the rest of the development team. In Phase Three the technical specialists moved the material online. The development team members reviewed the material for accuracy and effectiveness. In addition, volunteer students participated in a formative assessment of the materials, providing useful feedback on the design. The final product was reviewed and approved by the department in which the course was housed.

The final Product: eTools Online

Work on the new tutorial was completed in time for September 2005. eTools emerged from its redesign as an engaging, interactive web sitetutorial that alloweds students to proceed through resource material at their own pace. The content wasis contextually related to specific assignments required in 099.111 Introduction to University, but the site was alsois designed to be useful available to all students and useful to students at any stage of their academic careers. Making eTools freely available on the Web significantly expanded its original mandate to support and enhance the course content of 099.111, to become a resource for the whole University.

In its current version, Tthe eTools site contains over 200 web pages (most with images), 25 interactive flash tutorials, an email attachment checker, a dedicated search tool, an assignment calculator, and an assignment manager that allows students to record, save and revisit research strategies.

In addition to the specific content and resources within eTools, the site introduces students, by direct experience with learning technology, to the concepts of:

- Blended Learning - learning which combines online and face-to-face approaches and represents an increasingly important aspect of a student's university and life-long learning.
- Self-directed learning - learning in which individuals take the initiative, with or without the help of others, to access and engage in their learning.

Content Management

The eTools site is a database driven website. All resources, text, images, flash tutorials and student data are housed in a mySQL database. A series of php scripts construct web pages from the content and resources contained in the database. The site includes a content management system that allows the instructional designer and content specialists to directly and easily add, modify, sequence and delete the web pages and resources of the site through web based forms. Similarly, the ability to create and alter the navigation scheme of the site through a web based interface is built into the content management functionality of the site. Without needing to know html, or how to upload files to a web server, the site was constructed by non-technical staff using the content management functionality of the eTools site.

Assignment Manager
eTools allows students to record and store information related to specific assignments through the Assignment Manager tool. This tool prompts students with a series of questions in various content pages related to the successful completion of an assignment. For example, one page of etools deals with “Understanding Your Assignment.” The page offers the following information about this topic:

> “When dissecting an assignment, pay close attention to the **verbs**. Instructors use words like **argue**, **analyze**, **compare**, or **describe** to guide your approach to a topic. For example, an assignment that asks you to **argue** requires you to take a position on an issue or idea and support your position with facts, statistics, and quotations. An assignment that requires you to **analyze** focuses on taking an idea or concept apart and describing the parts in detail.
> Look for **"multi-part" assignments**. Often instructors ask you to accomplish more than one task. Listing or outlining separate parts of an assignment can help you divide a daunting assignment into manageable parts. You also may see which sections will require research beyond what is covered in class.
> Take note of **special instructions**, including format or length restrictions, source requirements, and grading criteria.”

Students are then able to use the following Assignment Manager worksheet to record and store the answers to questions related to their understanding of their own specific assignment:

Understand the assignment: The assignment description	
Current Working Assignment: Assignment 1	
What important verbs are included in the description of your assignment?	
What kind of approach do those verbs indicate?	
Is there more than one part to your assignment? What are the main parts?	
Briefly describe any special instructions given for this assignment	

Assignment Manager worksheets are distributed throughout the site and provide a method for students to understand and record their own progress in successfully understanding, researching and managing the process of successfully completing an assignment. In total, the assignment manager allows students to save responses to 20 questions related to completing an assignment. Students are allowed to store the worksheets for up to three assignments at any one time.

Authentication and Authorization
In order for students to save worksheet responses in the Assignment Manager, and for the site developers to create and modify the site, authentication was required. An authentication module was written allowing eTools to use the university’s central

LDAP authentication server. This allowed students, faculty and staff to use their regular computer and network credentials to login to the site.

Authorization was controlled within the etools site itself. Only two levels of authorization are allowed. Users with admin rights can control all aspects of the site – they can create, modify, move and delete content and manage the navigation menu. Normal users can save and retrieve assignment manager worksheets for up to three assignments.

Flash Tutorials

The site contains 25 interactive flash tutorials, many of which require students to perform the activities that were being demonstrated. In one example, in the Doing A+ Research: Assignment Two, Approved Topic module, students conduct a simulated interactive search of the University of Manitoba online library catalogue, rather than having them simply view a demonstration of a search. A basic premise for the flash tutorials was to require students to be actively involved in the content to promote better understanding and information retention.

The eTools flash tutorials were designed and implemented using a modular 'learning object' approach. The tutorials are published to the University's Learning Object Repository, a component of the Libraries institutional repository. This allows the tutorials to be used in other university courses where appropriate

Autoresponder

Many courses, including 099.111, allow students to submit assignments as attachments to email. A php script was written to allow students to ensure that they could successfully attach a Word or RTF document to an email message. The script checked an incoming email message and determined whether it successfully met three conditions:

- The subject line of the email contained the words "099.111 assignment."
- The email came from a valid UM email account (i.e., yourname@cc.umanitoba.ca).
- The email had an attached document saved as a Word document (filename.doc) or a Rich Text Format file (filename.rtf).

Automated responses (10 possible) were returned to the student based on any permutation of the incoming email meeting or notn-meeting the above three conditions.

Assessment and Evaluation

eTools constituted 5% of the curriculum for 099.111. To assess students an online 15 question summative assessment was created and delivered through the university's learning management system, WebCT. Students are given one hour to complete the assessment, which is available for a two-month period. A pre-test ensures that students understand the technical mechanics of the WebCT online quiz format. Students must score at least 5 out of 7 on the pre-test before the eTools quiz is released. The pre-test is available throughout the duration of the course, and students are allowed unlimited attempts.

Next steps

Building on the success of eTools and its underlying technology, the eTools partners are currently planning an extension of the scope and functionality of the eTools site.

Tentatively named emporiUMum, this project will see the content and student resources of eTools expanded. Initially, sSections for undergraduate, graduate and international students will be created.

EmporiUM will be designed as a web 2.0 application that will integrate student support resources within a social networking environment. It will facilitate the strengthening of existing communities of practice and social networks among students, and provide opportunities for the creation of new communities of practice and social networks among University of Manitoba students. The application will approach student learning from a holistic perspective, recognizing that a student's personal development is not separate from his/her academic development, that informal learning plays a crucial role in academic development, and that learning is a process of social participation.

The student support resources component of emporiUM will contain a suite of online modules designed to support undergraduate, graduate and international students, irrespective of course delivery method. The modules will include interactive tutorials focusing on reading, research, writing, study and learning skills, as well as a personalized assignment manager and a web-based online writing tutor.

The social networking component of emporiUM will allow students to interact based on shared interests and develop academically orientated relationships to form communities of practice.

The student support resources and the social networking component will be seamlessly integrated in a single interface accessible through a web browser.

The application will be developed using an open architecture that will allow for the easy addition of future modules.

Conclusion

The eTools Online tutorial is an ideal introduction to information literacy concepts as well as to the concepts of self-directed learning and blended learning - learning which combines online and face-to-face approaches. Blended learning also represents an increasingly important aspect of a student's university experience and lays the foundation for life-long learning.

While eTools has provided a jumping-off point for the development of emporium, it continues to undergo modification to more closely meet the needs of its original audience, students in *Introduction to University, 099.111*. Over the summer of 2006, its modules will be reviewed to see if they can be even more closely connected to the course syllabus. There is also some support for increasing the blended learning component by adding some face-to-face sessions. Blended learning represents an increasingly important aspect of a student's university experience and lays the foundation for life-long learning.

As an engine of change, eTools has almost completely transformed the way information literacy instruction is given to first year students at the University of Manitoba. It has produced innovations in tutorial design and development which have

put to rest many of the fears that librarians felt when the project began. But perhaps most importantly, eTools has provided an opportunity for educators with differing expertise but with a common goal to leave their University "silos" and come together to produce a resource that will enhance the learning of any student who wishes to use it. [18]

(eTools is available to anyone wishing to use it, not just those enrolled in 099.111, at the website: http://umanitoba.ca/learning_technologies/etools)

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[18] eTools is available at: http://umanitoba.ca/learning_technologies/etools

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