Institute for Research on Learning Technologies

Determining the Web Presence of Faculty-authored Websites

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Executive Summary

Because of the newness and rapid growth of web-based learning, the development of faculty-authored course websites has been impromptu rather than planned and managed. There are many forces acting to increase the availability of online courses and online course materials, such as, perceived financial benefits, meeting student demand, responding to the need for life long learning, and increasing enrolments. Due to these pressures there is a need for strategic planning that will guide administrators and faculty in meeting the goals and objectives for the future development of course websites. As this planning process unfolds, one of the first questions to answer is how and to what extent faculty use the Web to support teaching and learning.

York University has nearly 1,200 full-time faculty and over 40,000 full-time students who are supported with a large and complex network of computer hardware and software. There is no easy way to determine how many faculty have a web presence to support their students – no one has a list. We did not want to use voluntary surveys because response rates are typically low, and they would not provide enough information on which to base any conclusions. A research assistant was hired to manually catalog course websites by following links from departmental web pages, and also by viewing web content for faculty who had a directory on the university's web server. We believe this method would give us much more complete information, although we almost certainly did not find every course website that exists.

An online database was created in order to record course websites the research assistant found. The online database was searchable, and made record entry and retrieval very convenient. Furthermore, in order to assess the pedagogical and technological choices teachers made when putting up a course website, we used Bonk's Ten Level Web Integration Continuum (1999) to categorize the course websites. The first five levels in the continuum refer to informational uses of the Web, and the last five levels refer to using the Web as a required component of a course. Going from level one to level ten there is gradual increase in instructional risk for teachers, time commitment for teachers

and students, and greater accountability for students. The levels of the continuum were mapped to fields in our online database, and this allowed us to describe our findings based on the continuum.

Our database contains 325 course websites that were active during the fall 2000 and winter 2001 semesters. Full-time faculty accounted for approximately 75% of the course websites, contract faculty had about 6%, and the status of approximately 18% of the faculty with course websites was not known. Just under 12% of all full-time faculty had a course website, and there was a slightly greater tendency for contract faculty to put up a course website. There were some striking differences between the nine Faculties at York University. Atkinson College of Liberal and Professional Studies and the Faculty of Pure and Applied Science had proportionally more course websites based on their relative size. Finally, there were many more entries recorded in the database that related to informational uses of the Web (the first five levels of Bonk's continuum) than required uses of the Web (the last five levels). In particular, only ten faculty required participation in online discussions, yet requiring participation is an effective practice for online discussions that is described in the literature.

In conclusion, the online database was a very informative and useful tool that may help administrators, and those involved in faculty technology support, assess the web presence of faculty at York. We also found great variation in the course websites, and a division between effective practices reported in the literature and the pedagogical elements of existing course websites. For these reasons we recommend continuing to update and refine the database over time, and to include course website addresses in official course descriptions. Finally, in order to address the variation in quality and composition of course websites, support centers should make available a standard template for faculty interested in creating or updating a course website.

Introduction

Using the Web to deliver course materials is still a relatively new phenomenon (McGreal, 2000). Graphical web browsers only appeared in 1994, and the first web-based courses did not emerge until 1995 (McGreal, 2000). Although we are still in the early years of learning to manage and deliver online courses, we needed an accurate assessment of the current status of web-based learning at York University in order to move ahead with a scaleable strategy.

Not only is online learning a new reality, but also the demand for online courses has increased dramatically (Sherry, 1996; Thompson, 2000). A recent report by the Advisory Committee for Online Learning (2001) notes that Canada is well positioned to take advantage of this "rapidly expanding market for online learning" (chap. 2). As well, there is a growing trend toward the integration of online activities with face-to-face traditional learning (McGreal, 2000). In addition, nonprofit organizations like the Computer & Communications Industry Association are calling for more growth in web-based learning (NA, 2001). This push, coming from many directions, to move course materials online is probably one of the greatest challenges facing educators today (Care & Scanlan, 2001). The obvious response to this challenge is to devise a strategic plan and vision for future development of web-based learning. The first step in this process is to assess the current environment, and determine the degree of web presence faculty have created to date.

Researchers, administrators, and faculty at York University wanted to know to what extent and how faculty are using the web to support their courses. With over 40,000 full-time students enrolled, and nearly 1,200 full time faculty, it was no easy task to catalog and classify course web sites on our vast network. There were literally dozens of web servers located within many different departments, and each department had a different approach to web site management. Furthermore, the proliferation of course web sites over the past few years was ad hoc rather than planned and managed. However, in order to evaluate current practice and plan for future development, it was essential that we create a database of these web sites and assess our findings.

Since we wanted a comprehensive database of all faculty web sites, it was not possible to rely on voluntary survey data because response rates are typically poor. Also, there was no easy or automated way to classify and catalog course web sites -- nobody had a list of course websites! Software tools can be used by computer services to retrieve only the most basic information, which is that an http server is operating within the network. Simply identifying a web server does not give us any insight into how and to what extent teachers are using the web.

A manual search of the university's web domain through all departments and faculties was conducted. The results of the web domain search were recorded in an online database that was designed to be searchable using a web browser. The Ten Level Web Integration Continuum of Bonk et al. (1999) was adapted as a framework to classify the web sites once cataloged. Finally, we were mindful that the results might appear as an evaluation of faculty, and we were careful to avoid comparing different teachers' use of the web.

One of the major benefits of this project was that the database could help York University's administrators plan York's information technology (IT) infrastructure. The database offers decision makers some basis for deciding what human and non-human technological resources teachers and students will need in the future. It also helps those involved in faculty technology support determine to what extent faculty will require additional support. Next, the database presents a catalyst to initiate discussion forums among faculty who are integrating the Web into their courses. Such a dialogue is essential for distributing innovative practices. Teachers can also search the database to learn how their peers are using the web, and this information sharing may serve as a source of inspiration. Finally, we hope that other institutions planning similar initiatives might benefit from hearing about what worked, and what didn't work in carrying out this project.

Research Methods

We did not want to rely on voluntary survey data to catalog course websites because we could not be sure of accurate information or full participation by respondents. A manual search of York's web domain gave us a more complete picture of the number of websites as well as more consistent records. In December 2000, a research assistant was hired to locate and record publicly accessible course websites in the online database. Computer services staff wrote a CGI script to an Access database that allowed the research assistant to input information when a course web site was located. The data fields in the database were developed in collaboration with faculty, research staff, and computer services staff. The database search screen can be viewed at this address: http://test.otel.yorku.ca/faclist.taf

As a starting point, the research assistant was given a list of just over 775 faculty-authored websites that were located in a sub-directory of York's main web server (http://www.yorku.ca). This list was not all-inclusive, but it served as an important source for data collection. We did not assume that all faculty members put their course materials on York web servers, nor did all departments follow the same naming convention for faculty-authored web pages. The research assistant examined departmental websites, faculty websites, other yorku.ca websites, and in a few cases, websites outside the yorku.ca domain. He basically followed every possible lead to locating and recording a course website.

Course websites were entered into the database only if the course was operating during the fall 2000 or winter 2001 semester. Besides the professor's name, Faculty, course code, department and status, the research assistant also recorded the following resources or tools found on the course web site:

1. Alternate Resources
2. Audio Tape
3. Animation
4. Assignments
5. CD-ROM
6. Synchronous Chat
7. Course Management Software (WebCT, FirstClass, or Learning Space)
8. Co-taught
9. Database
10. Discussion Group

11. Document Scanner
12. Email
13. External Hosting
14. FTP
15. Grades
16. Lecture Schedule
17. Listserv
18. Multilingual
19. Quizzes
20. Password Protected
21. PDF
22. PowerPoint
23. Setup Info
24. Software
25. Streamed Audio
26. Streamed Video
27. Student Feedback
28. Student Presentations
29. Syllabus
30. Synchronized Media
31. Teaching Mode (Face-to-Face, Virtual or Hybrid)
32. Video Conferencing
33. Video Tape
34. Whiteboard

In addition to the above, there was a text field where any additional comments or details could be added. Thus, a significant amount of data for each course website was recorded in the database.

The research assistant also created and maintained an Excel spreadsheet with a list of all course websites found. This enabled him to crosscheck his entries and avoid duplication. Also, as a way to ensure that the database was as comprehensive as possible, search engines, such as Google, were used to locate websites in the York domain.

Limitations.

This study provides a transitory view of faculty course websites during the 2000 – 2001 academic year. It is important to note that this snapshot is only an indication of what websites existed. Although we followed all reasonable routes to locate and catalog websites, we cannot be sure that our database is all-inclusive. For example, faculty may have websites hosted on their own Internet Service Provider or on corporate servers that

are not within the yorku.ca domain. Also, 38 websites were password protected, and we could only note the presence of these, not what features the websites contained. Even though the procedures we used to locate course websites were monitored as carefully as possible, and all leads were followed up, some websites were likely missed, and password protected websites have incomplete data.

Framework for Website Classification

Bonk et al. (1999) developed the Ten Level Web Integration Continuum, which describes new resources, activities, partners, courses, and markets for academic websites. The continuum represents the pedagogical and technological choices teachers have when they put course resources and activities on the Web. Each level is numbered one through ten, and the numbers represent an increasing degree of instructional risk, time commitment and student accountability using the Web. It is important to note that higher numbers do not indicate better or more effective use of the web. In fact, according to the authors, level five (re-purposing for the Web) may even be "the most exciting and potentially explosive part of Web-based instruction." (Bonk et al., 1999). Presumably this is because re-purposing for the Web implies some level of success with previous iterations, and represents fine-tuning of web resources to make them more valuable for student learning.

The first five levels use the Web as *information provider*, however, the Web is not a required component of a course. The second five levels use the Web as *course provider*, and using the Web becomes a graded component of the course. When using the Web is required, the course dynamics change because students are accountable for what is on the Web. Table 1 lists the ten levels of integration, includes a description of each level, and also matches the level with the fields in the online faculty database at York.

Table 1

A Continuum of Web Integration in postsecondary courses.

Levels of Web Integration	Description	Database fields	↓ instructional risk ↓ time commitment ↓ student accountability
1. Marketing/Syllabi via the Web	Instructors use the Web to promote course and teaching ideas via electronic handouts and syllabi.	Syllabus Lecture Schedule Setup Info	
2. Student Exploration of Web Resources	Students use the Web to explore pre-existing resources, both in and outside of class.	Alternate Resources	
3. Student-Generated Resources Published on Web	Students use the Web to generate resources and exemplary products for the class.	Student Presentations Student Feedback	
4. Course Resources on Web	Instructors use the Web to create and present class resources such as handouts, prior student work, class notes and PowerPoint presentations.	Streamed Audio Streamed Video Synchronized Media PowerPoint Whiteboard Animation Software CD-ROM PDF Database Grades	
5. Re-purpose Web Resources	Instructors take Web resources and course activities and making some changes, put them on the Web.	Quizzes Assignments Interactive Syllabus	
6. Substantive and Graded Web Activities	Students interact with each other in Web-based activities such as weekly article reactions or debates as a graded part of their course requirements.	E-mail Listserv Discussion Group Chat Video Conferencing	
7. Electronic Conferencing Course Activities Extending Beyond Class	Students are required to use electronic conferencing to communicate with peers, practitioners, teachers, and/or experts outside of their course.	E-mail Listserv Discussion Group Chat Video-Conferencing	
8. Web as Alternate Delivery System for Resident Students	Local students with scheduling or other conflicts use the Web as a primary means of course participation, with the possibility of a few live course meetings.	Teaching Mode = Hybrid	
9. Entire Course on the Web for Students Located Anywhere	Students from any location around the world may participate in a course offered entirely on the Web.	Teaching Mode = Virtual	
10. Course Fits Within Larger Programmatic Web Initiative	Instructors and administrators embed Web-based course development within larger programmatic initiatives of their institution.	Teaching Mode = Virtual AND using Course Management Software (WebCT, FirstClass or Learning Space)	↑ instructional risk ↑ time commitment ↑ student accountability

Findings

Building an online database of course websites was very informative because it allowed researchers to create, view, and revise individual records, as well as search the database using keywords or criteria. Also, the database was accessible using a web browser, so data entry and retrieval was very convenient and easy. Furthermore, the records in the database are very useful for planning purposes and for information sharing. Here is a screen shot of the search record form:

Figure 1. Activity of York University Faculty involved in technology-enhanced learning (http://test.otel.yorku.ca/faclist.taf).

A number of problems or glitches were discovered as data entry began. First, the research assistant found out that the York web server directory path with faculty-authored pages was changed by system administrators in the middle of his data collection, so many sites had to be re-visited. Second, many course websites he found were ineligible because they were too old, or they had no course information – the page contained information about a faculty member or a faculty member's project but no course was associated. Sometimes course web sites were simply outdated, and contained inaccurate course information. From a list of 775 directories supplied by computer services, there were 478 faculty addresses listed in the web server directories that contained no content. Similarly, a few course websites did not list a faculty member's name or e-mail address.

We thought of different ways to ensure that our search for course websites was comprehensive. Computer services staff have the technical capability to ping all servers running on-campus and look for http ports. However, this activity is not viewed as polite and is considered a form of hacking. Also, using search engines, such as Google, met with limited success. For example, searching the yorku.ca domain for *course* resulted in 19,100 hits, many of which were not related to actual course websites. The most successful approach in locating course websites was to start with York's home page, and follow the links to every faculty or departmental website that could be found. Still, we almost certainly missed some course websites. For example, a co-author's (Owston) course website was not linked from his department's website, and could have easily been overlooked.

During the time period we recorded course websites, York University experienced a labor strike by teaching and graduate assistants. Although face-to-face (FTF) classes taught by full-time faculty were still offered, picket lines prevented many students from attending their classes. From anecdotal reports, and from information gleaned on a few websites in the database, some faculty established a course website in response to the strike. Creating a course website was one way for faculty to post lecture notes, assignments, and announcements so that students reluctant to cross the picket line could access the course content. Thus, the number of websites in the database may be somewhat higher than might have been if the strike had not occurred.

Of the 325 websites entered into the faculty database, full-time appointees created 244, contract faculty (adjuncts) created 20, Teaching Assistants (TAs) created 3, and teachers whose status is unknown created 58 records. Although we had a category for graduate assistants, there were no entries in the database for graduate assistant authored sites. It is important to note that many teachers created more than one website. When the number of teachers was counted rather than the number of websites, there were 130 full-time appointees with websites, 15 contract employees with websites, 3 TA's and 15 individuals of unknown status. Table 2 shows the number of websites, the number of individuals with websites, and compares that by number and by percentage to the total.

Table 2

Summary of websites by status

Status	Course websites		Individuals with websites	
	No. of websites	Percent of total websites	No. of individuals	Percent of individuals
Full-time	244	75	130	70.5
Contract	20	6	15	8
Teaching Assistant	3	1	3	1.5
Graduate Assistant	0	0	0	0
Unknown	58	18	36	20
Total	325	100	184	100

As can be seen from Table 2, the percentages of course websites and individuals with websites were fairly consistent among different affiliations. The total number of full-time academic appointees at York in 2000/2001 was 1,139, and the total number of contract academic staff was 66. So just under 12% of full-time faculty had a course website. Also, using these totals, contract faculty represented a little less than 6% of full-time faculty, yet the number of contract faculty with websites was about 11% of full time faculty with course websites. Thus, there was a slightly greater tendency for contract faculty to put up a course website than full-time faculty. Finally, a bar chart was produced showing the percentages of websites for each employment category. Here are the data represented in this bar chart:

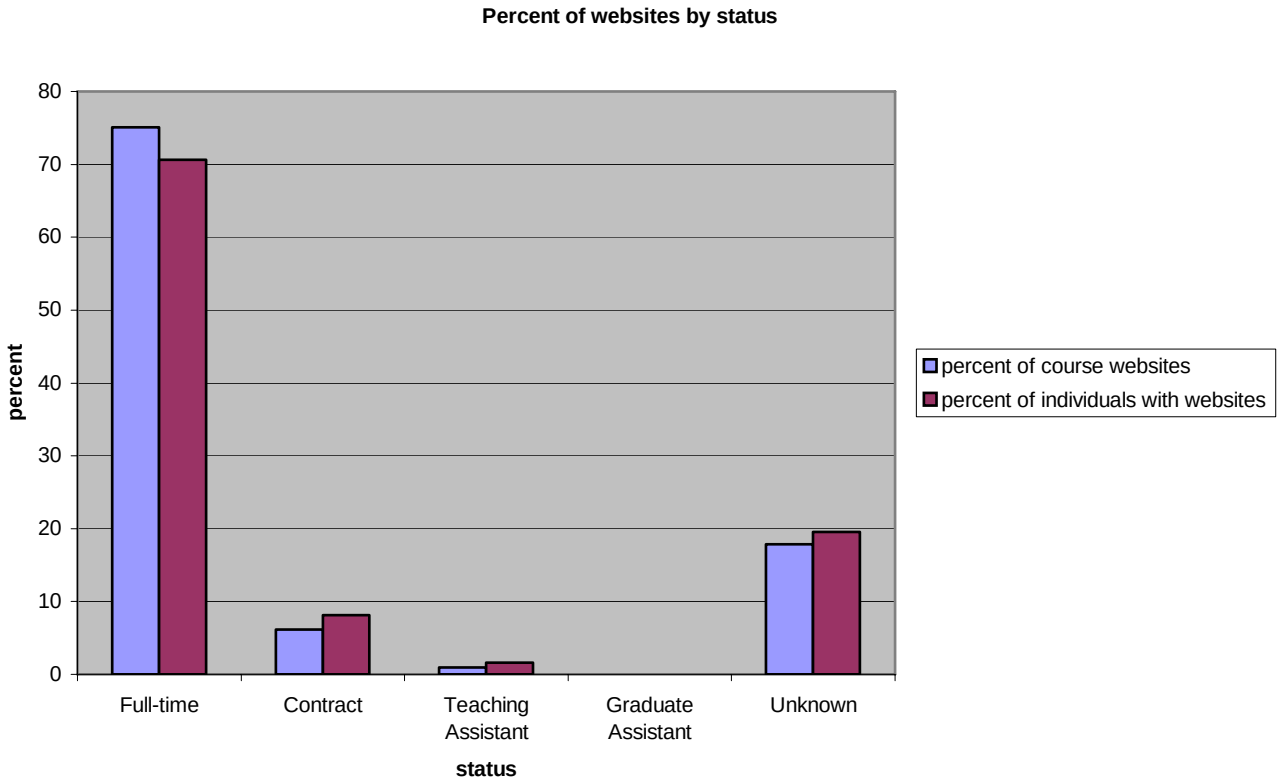

Figure 2. Percentage of all websites broken down by affiliation.

As in Table 2 above, similar comparisons can be made with the nine Faculties at York University. Table 3 reports the number of course websites, and the individuals with websites for the nine Faculties together with the relative size of each Faculty based on the number of academic staff (full-time and contractual).

Table 3

Summary of websites by Faculty

Faculty	**Relative size of Faculty by percent of total academic staff**	**Course websites**		**Individuals with websites**	
		No. of websites	Percent of total websites	No. of individuals with websites	Percent of individuals with websites
Arts	45	94	29	53	25
Atkinson	12	71	22	51	24
Education	4	1	0.3	1	0.5
Environmental Studies	3	7	2.2	4	2
Fine Arts	8*	16	5	9	4.2
Glendon	7	7	2.2	4	2

Faculty	Relative size of Faculty by percent of total academic staff	Course websites		Individuals with websites	
		No. of websites	Percent of total websites	No. of individuals with websites	Percent of individuals with websites
Graduate Studies	NA**	31	9.6	22	10.3
Osgoode	4	5	1.5	3	1.4
Pure & Applied Science	12	83	25.7	59	27.8
Schulich	6	8	2.5	6	2.8
Totals	100	323*	100	212*	100

*Totals differ from Table 2 due to missing information.

**All Graduate Studies faculty are affiliated with one of the other nine Faculties.

The relative size of each Faculty in terms of numbers of teachers, affects the interpretation of the data. By comparing the percent of websites and individuals with websites to the relative size of each Faculty, we can better judge the propensity of teachers in a particular Faculty to post course websites. Figure 3 provides a visual representation of the data to make the comparison easier.

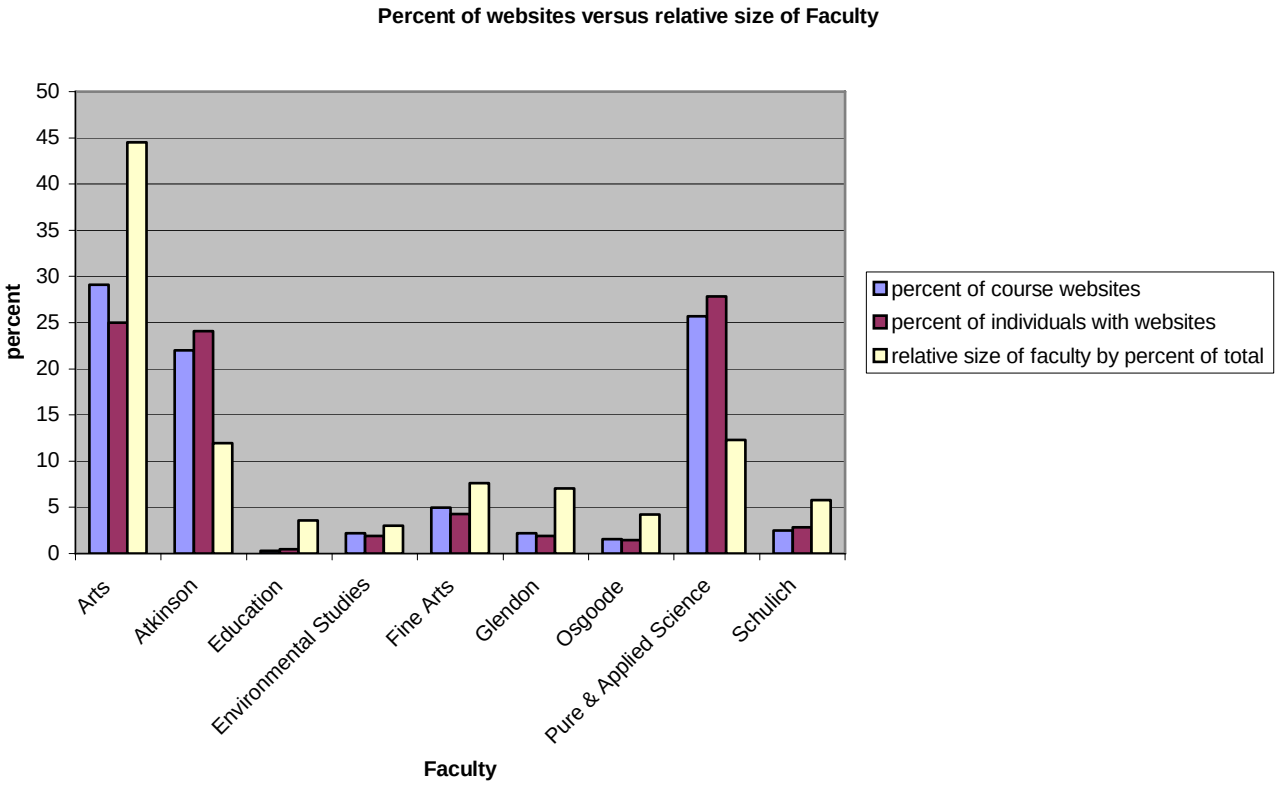

Figure 3. A comparison of the relative size of each Faculty with the number of course websites and teachers who posted websites.

Most of the Faculties are under-represented when comparing the relative size to the number of course websites and individuals with websites. For Arts, Education, Fine Arts, Glendon, Osgoode and Schulich the relative size of the Faculty was greater than the proportion of total websites in the database. Environmental Studies ratios were reasonably even. On the other hand, Atkinson College of Liberal and Professional Studies and the Faculty of Pure and Applied Science had proportionally more course websites and individuals with websites compared to their size. The fact that there are differences between Faculties is interesting, and may be explained by the influence of departmental policies, procedures or support services, and/or the technical capability of individual faculty members.

According to the Office of Enrolment and Student Services, there were a total of 2,495 undergraduate courses offered at York during the Fall 2000 and Winter 2001 terms. There are 31 course websites in the database that were designated graduate studies, and subtracting these from the 325 total left 294 undergraduate courses with websites. Calculating the percent of all undergraduate courses with websites resulted in a figure of just under 12%. Table 4 gives a breakdown of all undergraduate courses by Faculty and by format.

Table 4

Courses Offered during Fall 2000 and Winter 2001 by Faculty and Format

	Arts	Atkinson	Education	Environmental Studies	Fine Arts	Glendon	Osgoode	Pure & Applied Science	Schulich	Total
Lecture	683	304	79	26	126	296	57	184	63	**1,818**
Seminar	268	15	-	18	12	16	27	4	-	**360**
Studio	-	12	-	-	242	-	-	-	-	**254**
Correspondence	6	17	-	-	-	-	-	-	-	**23**
Internet	2	37	-	-	-	1	-	-	-	**40**
Grand Totals	959	385	79	44	380	313	84	188	63	**2,495**

Looking at York's faculty presence on the web using Bonk's theoretical framework, Table 5 reports the number of records found for each field laid out under the Ten Level Web Integration Continuum. Since Bonk's continuum basically divides web integration levels between informational uses and required uses of the web, the discussion that follows is based on these two main headings.

Table 5

Records found in faculty database for each level in the Continuum

Levels of Web Integration	**Database fields**	**Number of records found in database (total 325)**	**Comments**
1. Marketing/Syllabi via the Web	Syllabus Lecture Schedule Setup Info	Syllabus = 250 Lecture Schedule = 239 Setup Info = 87	62 websites used all three: syllabus, schedule and setup info.
2. Student Exploration of Web Resources	Alternate Resources	Alternate resources = 192. E-mail = 274 (professors e-mail address posted).	
3. Student-Generated Resources Published on Web	Student Presentations Student Feedback Listservs Discussion Groups	Student Presentations = 6 Student Feedback = 4 Listserv = 23 Discussion Group = 26 Chat = 2	Listservs and Discussion Groups in this category are not mandatory – not marked.
4. Course Resources on Web	Streamed Audio Streamed Video Synchronized Media PowerPoint Whiteboard Animation Software CD-ROM PDF Database Grades	Streamed Audio = 12 Streamed Video = 6 Synchronized Media = 1 PowerPoint = 29 Whiteboard = 0 Animation = 5 Software = 4 CD-ROM = 2 PDF = 56 Database = 0 Grades = 54	
5. Re-purpose Web Resources	Quizzes Assignments	Quizzes = 70 Assignments = 171	55 websites used both quizzes and assignments

Levels of Web Integration	Database fields	Number of records found in database (total 325)	Comments
6. Substantive and Graded Web Activities	E-mail Listserv Discussion Group Chat Video Conferencing	Listserv = 8 Discussion Group = 2 Video-Conferencing = 0	total represents 10 teachers who required online participation; it is not known how many of 22 WebCT, and 20 LearningSpace courses required participation.
7. Electronic Conferencing Course Activities Extending Beyond Class	E-mail Listserv Discussion Group Chat Video-Conferencing	0	no course websites extended communication beyond the class.
8. Web as Alternate Delivery System for Resident Students	Teaching Mode = Hybrid	2	Some FTF sessions, but student could pass without attending.
9. Entire Course on the Web for Students Located Anywhere	Teaching Mode = Virtual	20	Only 2 teachers not using course management software.
10. Course Fits Within Larger Programmatic Web Initiative	Teaching Mode = Virtual AND using Course Management Software (WebCT, FirstClass or Learning Space)	18	1 WebCT 17 Learning Space 0 FirstClass

Informational uses of the Web – level 1 to 5

Most faculty websites were fairly straightforward and offered basic information, such as a course outline, course syllabus, contact information, and resources. Not many faculty members were making use of interactive features such as streamed audio, but we knew of a few pioneers using these more advanced techniques. As can be seen from the total records found (see Table 5), informational uses, especially at level 1 and level 2 are by far the most common. Nearly 84% of course websites included the professor's e-mail address, and 77% had a course syllabus. From level 1 and 2, the number of records dropped when moving to level 4. As can be seen from the level 4 records, the use of PDF files (17%) and PowerPoint files (9%) were somewhat common. Also, in level 3, 48 courses (15%) used a listserv or discussion group. Since participation in the listserv or discussion group was not mandatory for these courses, we assigned their use to level 3 of

the continuum. Level 5 included assignments, which was a very common use of the web, and was observed on nearly 53% of all course websites. We may be taking a broader view of re-purposing web resources in level 5 than Bonk's original intent. However, we thought that when teachers put assignments on the web, they are most likely re-purposing for the web.

The Web as a required component – level 6 to 10.

As noted in Table 5, there is very little activity recorded in the database for level 6 through 10. According to the Office of Enrolment and Student Services, York had a total of 40 undergraduate Internet courses during the Fall 2000 and Winter 2001 semesters. In our faculty database, we were able to record only 20 virtual or Internet courses of the 40 in total. Furthermore, only two of the 20 courses that we recorded in our database did not use course management software. The WebCT administrator reported that 20 courses were running on WebCT during the time frame for this study, and 20 courses were using LearningSpace, according to our own database records. Unfortunately, we cannot determine which of these 40 courses in WebCT and LearningSpace were online courses, and which were merely using course management software as an electronic resource for students in FTF classes. The reason we did not know this is that the courses using course management software were password protected, so we only knew of their existence and nothing else.

Of the course websites we could access, we found only eight that required participation in a listserv, and two that required participation in a discussion group. However, even these totals are somewhat suspect because detailed information on the course website was at times sketchy or seemingly contradictory. Still, with the data we have, less than 4% of the courses with websites or less than half of one percent of all undergraduate courses required using the web to participate in online discussions. Yet, the literature consistently reports benefits to learning when students participate in asynchronous online discussions (Davie & Wells, 1991; Kerka, 1996; McComb, 1993). The literature also supports the practice that online discussions should be a required part of the course work to be most effective (Mason, 1998).

Conclusions

Building the database, and making it accessible online was a simple and effective idea that supports planning and information sharing activities at a university or college. Maintaining the database incurs some expense, however the benefit derived from knowing with greater accuracy what course websites exist may be worth it in the long run. Also, over time, the quality of the database records would likely improve as more is known about a particular website and its academic use.

An obvious deduction when observing websites in the database is that there was no standard template used by teachers. Existing course websites represented a wide assortment, and varied dramatically in features. Some websites were missing very fundamental information, such as, the course director's name or e-mail address, and others were very instructive. Some websites had been created with the most basic HTML, while others had a professional appearance and interactive features created with multi-media applications. Thus, there was great variety in scope and appearance of the websites in the database.

Finally, there was a mismatch between best practices as described in the literature, and the online pedagogy York faculty appeared to follow. For example, for most listservs and discussion groups, participation was voluntary, yet requiring students to participate has been an effective practice reported in the literature on computer-mediated communications for over a decade (Harasim, 1990). The reasons are not certain, but may be very practical. Faculty may not have enough time or training or support, and they may need a clearer vision of how to incorporate online discussions. Also, large enrolment classes generate a unique challenge for requiring online discussions because of the complexity in managing and assessing so many student contributions.

Recommendations

Based on our conclusions and observations, a number of recommendations emerged to improve the database as well as the course websites themselves. First,

monitoring and recording course websites would be much simpler if there was a central database with links to course outlines and to all course websites. For example, the university could include the course URL as a field in the database for all official course descriptions. There seems to be some movement in this direction already at Atkinson College; although course websites have not yet been added to the college's website, a field exists for *Course Website* in the online course database system. Admittedly, this is a major undertaking, and requires a lot of administrative support. However, making course websites part of the official course descriptions adds some element of legitimacy to the practice of creating course websites, and might even encourage more teachers to post course websites.

Second, putting out recommendations or templates for standard course websites might help to improve the consistency and the quality of the information presented. At present, teachers are on their own, and may or may not have the knowledge or support they need to create a course website. Providing an institutional template gives teachers an edge when planning their course websites. Even if the template is not mandatory, it gives teachers a starting point and guide to developing their course websites.

Third, in order to encourage information sharing and gleaning of ideas between teachers, we plan to leave viewing records in the database open to academic staff – not password protected. However, password-protecting the database record entry pages would be prudent, especially as the database grows, and different personnel add records. Also, another way to promote information sharing is to publicize the database.

Finally, over the years, the database would be greatly improved if records were regularly updated. Also, in order to include password protected sites in the database, we could ask faculty with password-protected pages for guest access, or invite them to complete their own record in the online database. Although asking teachers to enter their own records might decrease the accuracy of the database because of different interpretations of the criteria or incomplete records, it would serve to advertise the database among faculty. Since one of the major goals of the database was to function as a means to share information and glean ideas, inviting faculty to update their own records seems well worth the risk.

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