

FOSTERING WEB BASED TEACHING AND LEARNING IN A UNIVERSITY

Some preliminary findings at Hong Kong Baptist University

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Abstract: The information revolution of the last 20 years has transformed society, business and culture, placing pre-eminence on the ability to access and use information. Such a trend continues at an incredibly accelerating pace, which makes it a big challenge for educators to keep up with. Like many universities in Hong Kong and elsewhere, Hong Kong Baptist University (HKBU) is rapidly expanding its use of information technology for teaching and learning. A Taskforce was set up to promote web based teaching and learning activities within the university community. This paper reports some preliminary findings on the nature, approach and progress made by the Taskforce during its first phase of implementation of the WebCT – the current platform for the initiative. A survey conducted by the Taskforce found that academics showed a strong desire for training and workshops, and the need of resource personnel to support their use of technology in teaching. Academics also expressed the importance of having sufficient time to learn to use the WebCT and to prepare contents, and they value opportunities to interact with colleagues for sharing experiences. Despite limited resources, the feedback on the promotion of WebCT for the teaching and learning processes at HKBU was found to be quite positive in the initial phase. The activities of the Taskforce are now into its second phase of implementation. Apart from the training and workshop support provided, the Taskforce will also look into the pedagogical impact of this initiative to staff and students alike. This should shed information on how to help academics and students adjust and prosper in a changing educational climate, and eventually on contributing to the development of a culture which recognizes and values the use of IT in education.

Key words: WebCT, web based teaching and learning, higher education

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1. INTRODUCTION

“..., we believe that the innovative application of... C&IT holds out much promise for improving the quality, flexibility and effectiveness of higher education. The potential benefits will extend to, and affect the practice of, learning and teaching and research.” (Dearing Report, 1997: 13.1).

Academics have used e-mail to communicate with each other since the early 1980s. With the recent growth of the World Wide Web (WWW) and the explosion of the Internet, many lecturers and academic departments have started exploiting the potential of these technologies and the sophisticated network infrastructure to enhance their teaching. Increasing numbers of teaching staff are beginning to put their lecture notes and reading materials on the web for students to browse and use. They have also started communicating with their students via email.

Course outlines are commonly published on departmental websites. Some university libraries have web-interfaces for searching, checking availability and reserving books. Conferencing software is used in some institutions to create on-line discussion groups amongst students. These simple innovations are only the beginning, and it is not surprising to find a recent wave of interest amongst software developers and IT research groups within universities in exploring ways to further leverage technology in an educational context. Against the background of changes in Higher Education required to achieve the vision of ‘a learning society’ painted by the Dearing Report (1997) in the UK, which is also a factor in the current Education Reform in Hong Kong, this study focuses on the development of web based teaching and learning initiative at Hong Kong Baptist University.

2. BACKGROUND

2.1 Origin

This section provides information about how and why the use of web based learning environments for teaching and learning at HKBU was developed, in addition to the context, scope and boundaries that define its scale. This initiative stemmed from a pilot project carried out by the Faculty of Social Sciences in 1999-2001, which was built upon the work (related to web based teaching and learning) that already started at HKBU such as the WebCH – an in-house developed system for subject web page construction.

The pilot project adopted WebCT⁵ as the platform to systematically support the development of web based and web-assisted teaching and learning within the Faculty.

The positive response from lecturers and students participating in the pilot project subsequently led the senior management of HKBU to increase its scope to a university-wide level. As a result, the Academic and Professional Standards Committee (APSC) set up a Web based Teaching and Learning Taskforce in July 2001 to promote the use of the technology to enhance teaching and learning quality, using WebCT as an initial platform. The Taskforce was established to spearhead the University onto a greater use of IT platforms in the conduct of teaching and learning, and was entrusted with the responsibility for devising a strategic plan for promoting the development of web based teaching and learning in the university community. The Taskforce was formed to serve a two-year term. An overview of the initiative, including its conduct and those involved, is presented in the following section.

2.2 Overview

Memberships for the Taskforce were drawn up from different faculties, along with the terms of reference, by the APSC. The University provided funding for the equipment, the WebCT license, and a small support team of three personnel for the operation of the Taskforce. During the first few months of implementation in the 1st semester of academic year 2001-02, the primary focus of the Taskforce was to provide WebCT training and workshops to interested teaching and non-teaching staffs. The Taskforce also created a homepage to provide information and reference to users, with materials not only on WebCT and its training, but covering web based teaching and learning in general. A user survey was conducted at the end of the 1st semester, covering all full-time academic staff, to collect feedback on the WebCT initiative.

2.3 Aims

The new forces of globalisation, rapid growth in IT capacity, changing patterns and demands on education all interact in ways that are transforming the character and structure of tertiary education (Biggs, 1999; Brennan & Shah, 2000). HKBU, like any other university, is also rapidly expanding its use of web based technologies to enhance teaching and learning. The broad aim of this initiative was to promote a web based teaching and learning

⁵ WebCT is the Web Course Tool available from www.WebCT.com

culture in the university community. The more specific aim of the current initiative was on the pedagogical applications of these technologies, in particular maintaining quality while increasing effectiveness and efficiency in teaching and learning. As higher education continues to embrace these new technologies, the need for academics to evaluate the impact of this paradigm shift magnifies.

3. PROCEDURAL OPERATION

3.1 Scope

It is necessary to clarify several aspects of the initiative's focus and signal some limitations on its scope. The Taskforce's starting point is to achieve a critical mass of WebCT users, hopefully to contribute to and positively influence teaching and learning practices. Secondly, the process of 'operation' involves the exercise of a steering role by the Chairman of the Taskforce and the overarching advisory role by the Advisory members of the Taskforce.

The limitation of this initiative is two-fold. First, the budget allocated for the initiative is quite scarce, making it difficult if not impossible for the Taskforce to speed up the engagement of the academic staff on using WebCT for teaching and learning. Secondly, WebCT is seen as a system requiring further development rather than a 'perfect system'. The initiative is expected to continue to evolve in response to the rapidly changing context, and to the nature of teaching and learning paradigm shifts in higher education. Thus, it is as effective as possible to add value to 'what is already there' by remaining open to adaptation to 'what might be'.

3.2 Approach

The Taskforce had two approaches.

The first approach concentrates on User Training and Support for WebCT. The Taskforce aims to promote WebCT usage by conducting comprehensive training and workshops of different levels at regular intervals. Academic and non-academic, staff including technicians and support staff from various disciplines, are encouraged to participate. A Help Desk has been set up to provide technical support.

The second approach addresses the pedagogical issues associated with the use of technology for teaching and learning. Seminars to promote the

use of WebCT for teaching and learning, and the integration of pedagogy and practice are organized. Updated and relevant information on web based teaching and learning are made available on the website. Consultations with colleagues, surveys and other related studies are carried out to provide references for best practices and informed decision-making by the Taskforce in its development of the strategic plan to be submitted to the Senate via APSC at the end of its 2-year term.

3.3 Operation

The development of the initiative aimed to create a geographically dispersed user community at HKBU. While its use is optional, the overall approach of the project focused on the achievement of university-wide outcomes. Even at the early phase of the initiative, progress towards this outcome already required the establishment of collaborations with discipline-specific academic staff, as well as the identification of a pool of WebCT users to provide support and share similar experiences.

Despite the very limited budget and resources, the development of the initiative has encouraged academic staff in adapting to and utilizing the new web based resources. The operation of the support team, albeit small, also offered significant help for academics, particularly to those who are new and wanting to explore what is available for them. The quality of feedback adds incalculable confidence to the Taskforce.

4. PROGRESS AND OUTCOMES

4.1 Milestones

The following were some of the key milestones in the development of the initiative:

- establishment of the Taskforce and its membership
- consultation meetings with the Taskforce advisory team members
- employment of support team personnel
- relatively standard literature search on related topics
- establishment of the web page (WebCT and the Taskforce)
- development of training materials
- delivery of workshops / training to academic and non-academic staff
- identification of staff needs for professional development in this aspect (via survey questionnaire)

4.2 Needs Analysis

Using a self-developed instrument, a needs assessment survey was administered conducted to all 400 full time academic staff. The primary purpose of the survey was to collect feedback on what are (if any) the needs they deemed as necessary for the ease of use in performing various tasks associated with web based teaching and learning. Another purpose of the survey was also to find out the existing profile of academics in terms of using information technology for teaching and learning.

In the survey, respondents were asked to describe any web based systems that they were using for teaching and learning prior to the Taskforce formation. In particular, they were asked for details of the use of computers, virtual learning environments, and the World Wide Web. Another part of the instrument surveyed respondents on their awareness of the activities carried out by the Taskforce, as well as its level of effectiveness in serving their needs.

4.2.1 Background of the respondents

37.7% (n=26) of the respondents have been teaching at HKBU for 1-5 years, while another 20.3% (n=14) taught for 6-10 years. There was an equal proportion of academic staff that taught for less than a year (n=11, 15.9%) and 11-15 years (n=11, 15.9%). Only 8.7% (n=6) taught for more than 15 years at HKBU. The respondents were broken down into different faculties, as shown in Table 9-1 below.

Table 9-1. Responses by Faculty

Faculty	Number of Responses	Percentage
Arts	22	31.9%
Business	9	13.0%
Communication	4	5.8%
Science	12	17.4%
Chinese Medicine	1	1.4%
Continuing Education	11	15.9%
Social Sciences	8	11.6%

4.2.2 Response rate

A total of 400 questionnaires were sent out to all full time academic staff. 69 valid responses were collected; the response rate was 17.25%. Phone follow-ups were made to increase the response rate. The cut-off date was also extended from 2 to 4 weeks to allow more time for academic staff to return the answered questionnaire.

The number of survey forms returned was unfortunately too low to warrant detailed analysis of the results. Hence, the conclusions drawn from these results were not representative of the HKBU academic community. Some possible reasons that might account for the low rate of return other than simple lack of willingness or time to participate were:

- The time of the survey implementation coincided with the examination period of HKBU. As a consequence, the majority of the academic staff were occupied with the preparation and marking of the examination results.
- The time of the survey implementation was near the Christmas holidays. The majority of them went on holidays right after the examination period, leaving little or almost no time to respond to the survey questionnaires.
- The surveys were sent to academic staff via departmental secretaries. It is possible that they might not know about the survey being implemented. Lack of coordination at the departmental level may be one explanation for the low response rate.
- The use of web based approaches to teaching and learning is still embryonic at this stage. Hence, the level of interest and awareness of academic staff to alternative teaching / learning methods may also be another factor.

4.3 Some highlights from the findings

This section is divided into three parts. The first part provides a picture of the HKBU academic staff profile on IT use for teaching and learning. Part 2 gives an account of the degree of awareness (of HKBU academic staff) of the Taskforce and its associated activities. The last part, Part 3, indicates the preparation and development needs as perceived by the HKBU academic staff.

4.3.1 Profile of HKBU academic staff on IT use for teaching and learning

IT literacy and usage. Before the start of the 2001-2002 academic year, more than half of the respondents (n=45, 65.2%) have been using computers for more than 10 years. Another quarter (n=18, 26.1%) were also using computers for at least 5 years or more. However, most of the computer usage related only to word processing (frequent: n=66, 95.7%) and presentation (sometimes to frequent: n=39, 56.5%). Only 4 of the respondents were using computers for other reasons like faxing, video and image editing, programme authoring for teaching and research, and programming. In terms of training, more than half of the respondents (n=36,

52.2%) did not attend any IT courses during the past academic year 2000-2001. Only 33.3% (n=23) had between 1-3 IT training courses, whilst another 10.1% (n=7) attended at least 4-6. Only 2.9% (n=2) had 10 or more IT training courses in the past academic year 2000-2001.

IT in teaching and learning. Prior to 2001-2002 academic year, only 36.2% (n=25) were adopting some form of web based teaching prior the 2001-2002 academic year. Slightly more than half of the respondents (n=14, 56.0%) were using WebCH, a platform developed internally by the Academic Registry of HKBU. Another 28.0% (n=7) were using self-developed homepages, while only 20.0% (n=5) were WebCT users. A small proportion used self-made web based programmes; others used Macromedia software packages for interactive teaching objectives and platforms provided by other faculties (i.e. Social Sciences) and other universities (i.e. Hong Kong Polytechnic University Language Teaching website).

During the first semester of the academic year 2001-2002, more than half (n=44, 63.8%) were not using WebCT for teaching and learning. Of those using WebCT, 13 (18.8%) used it for 2 subjects. Another 5 (7.2%) used it for at least 1 subject, while only 2 (2.9%) used it for 3 subjects or more. Some staff members also used platforms other than WebCT, such as WebCH, self-developed homepages, or platforms provided by other faculties (such as the Social Sciences) or other institutions (such as PolyU Language Teaching website).

The WebCT usage summary at the end of the first semester 2001-2002 (i.e. 31st December 2001) was calculated as follows in Table 9-2:

*Table 9-2. WebCT usage summary** This figure includes full time and part time academic staff

Faculty	N	%
BUS: School of Business	25 out of 67	25.4%
SCI: Faculty of Science	15 out of 122	12.3%
SOSC: Faculty of Social Sciences	35 out of 195	18.0%
ARTS: Faculty of Arts	6 out of 159	3.8%
COMM: School of Communication	N	16.0%
SCM: School of Chinese Medicine	25 out of 67	10.0%
TOTAL	15 out of 122	14.8%

When the academic staff were asked whether they have an intention to use WebCT for teaching and learning in the second semester of the academic year 2001-2002, only 27.5% (n=19) and 17.4% (n=12) intend to use it for 1 and 2 different subjects respectively. Slightly less than half (n=33, 47.8%) indicated no intention of using WebCT in the second semester of the academic year 2001-2002.

Preferred approach for IT use. The academic staff members were also asked for their most preferred approach when using web based technology to support teaching and learning (Table 9-3). Majority of the respondents opted for level 4 (learning on their own, with access to technical support when needed), and level 1 (having technical support to prepare the materials). There was an equal preference for levels 2 and 3 (work with mixed team, and learning to learn without support).

Table 9-3. Preferred approaches when using web based technologies.

Level	Description	Preference			
		Least preferred	Preferred	Strongly preferred	Don't know
4	Learn the technology skills so that I can prepare materials myself, with access to skilled technical staff when the need arises	4 (5.8%)	18 (26.1%)	40 (58.0%)	2 (2.9%)
1	Work with skilled technical staff who will prepare the content materials based on my needs	14 (20.3%)	12 (17.4%)	29 (42.0%)	4 (5.8%)
2	Work in a team with colleagues, including a mix of academic and technical staff, on preparing the content materials	20 (29.0%)	20 (29.0%)	8 (11.6%)	10 (14.5%)
3	Learn on my own when the need arises without any formal instruction and support	23 (33.3%)	22 (31.9%)	8 (11.6%)	4 (5.8%)

4.3.2 Degree of awareness on the administration and support provided by the Taskforce

Degree of awareness. 82.6% (n=57) and 73.9% (n=51) of the respondents were aware of the WebCT platform and the Web based Teaching and Learning (WebTL) Taskforce respectively. 91.3% (n=63) were also aware of the WebCT training and workshops provided by the Taskforce. However, when asked about the support provided by the Taskforce, only 65.2% (n=45) were aware of the Support Team, 52.2% (n=36) for the Help Desk, and 40.6% (n=28) for the WebTL Website. In fact, only 33.3% (n=23) has sought for support from the Support Team / Help Desk.

Channel for obtaining information. The most popular source of learning about the WebTL Taskforce and its associated activities was through the Email message system of HKBU (i.e. Postman). This accounted for 88.4%

(n=61). The next sources of information channel were through colleagues and friends (n=24, 34.8%) and direct mail posting (n=21, 30.4%), followed by the HKBU website (n=9, 13.0%). The WebTL and WebCT websites were the least popular channels for obtaining information about the activities of the Taskforce. This accounted for 1.4% (n=1) and 8.7% (n=6) respectively.

Workshops offered. Of the 69 respondents, only 25 (36.2%) attended the WebCT workshops offered by the Taskforce. The majority of them rated the overall quality of the workshops as acceptable (n=12, 48.0%) to above average (n=10, 40.0%). The respondents also expressed that the most convenient time to offer these workshops (in the future) was on Monday (n=12, 17.4%) and Tuesday afternoons (n=7, 10.1%). Another 7 (10.1%) also expressed Friday afternoon as a possible timeslot.

4.3.3 Preparation and development needs of HKBU academic staff

Academic staff members were asked to feedback on what are (if any) their needs for the preparation and development of skills necessary in performing various tasks associated with web based teaching and learning. They were also asked to comment on the hindering factors that could have affected their progress. Table 9-4, below, shows the needs expressed by the respondents, in order of priority.

Table 9-4. Pre-requisites for using WebCT

Preparation and Development Needs	N	%
Face to face training and workshops of different types in the use of WebCT	39	56.5%
One on one personal consultations to use WebCT	25	36.2%
Departmental local support for WebCT	25	36.2%
On-line self access learning to use WebCT	24	34.8%
Department based training, workshop, experience sharing to use WebCT	24	34.8%
CD-ROMS on how to use WebCT	13	18.8%
University wide experience sharing sessions on using WebCT	7	10.1%
Centralised WebCT content development support	3	4.3%

One interesting finding from the survey showed that more than half of the respondents (n=45, 65.2%) did not think incentives were needed for staff members who use web based technology to enhance teaching and learning. At the time of this reporting, the Taskforce has already started looking into this issue.

When asked what conditions prevent or limit the use of WebCT in teaching, the following responses were given by the respondents (Table 9-5).

Table 9-5. Inhibitors to WebCT use

Conditions that prevent or limit WebCT use	N	%
Not enough time to develop content materials for WebCT	41	59.4%
Not enough time to attend WebCT training and workshops	36	52.2%
Still learning the knowledge and skills of using WebCT for instruction	21	30.4%
Unsure whether the use of web based technology is beneficial to students	17	24.6%
Classroom infrastructure is inappropriate for web based teaching	17	24.6%
Insufficient provision of technical support	10	14.5%
Lack of personal interest to use WebCT	9	13.0%
Not ready to change my existing teaching strategies	8	11.6%
Lack of content development support	8	11.6%
WebCT not user friendly enough	7	10.1%
Unsure whether the use of web based technology is beneficial to self	7	10.1%
Prefers using other instructional software to help meet learning objectives	6	8.7%
Students' attitudes are not ready for web based learning	4	5.8%
Insufficient training and workshops	4	5.8%
Need for departmental policy / leadership	4	5.8%
Not ready to change my teaching role	2	2.9%

Others also expressed lack of time, lack of expertise/knowledge, and lack of support (i.e. helper to design WebCT materials) as hindrances for WebCT use. Some of the other reasons provided were:

- 'A lot of WebCT is irrelevant to the way I do things, and it's very cumbersome'.
- 'It can only be used when semester is about to start, I can't prepare in advance'.
- 'Difficulty in presenting graphics of chemical structure or mathematical equation in a text based system like WebCT'.
- 'Manual of WebCT is not good'.
- 'No need to use it'.
- 'Some students do not participate in WebCT'.
- 'Students may not be able to access it'.
- 'Not all students have computers at home, the access to Internet is slow'.
- 'Time consuming'.
- 'Self-developed website is being used'.
- 'WebCT does not provide the design freedom needed for my class'.

5. DISCUSSION

The development of high performance computing and communications has resulted in the production of new media, such as the Web and virtual realities. These new types of messages and experiences have transformed traditional instruction based only on classroom learning into a broader and potentially more powerful repertoire of pedagogical strategies.

There are a number of points raised by this paper which shed lights on what academic staff at HKBU need to support their use of web based technologies for teaching and learning. The single most important conclusion reached is that the potential benefit of information technology can be realized provided careful attention is paid to a range of factors, including:

- appropriate attention to the context into which the new initiative is being introduced;
- provision of an appropriate organizational infrastructure; and
- motivating academic staff and students in using IT to enhance teaching and learning practices.

This paper provides a snapshot of the progress made by HKBU on its undertaking towards web based teaching and learning practices in the university community. This is only the first phase of a two-year term. The Taskforce at this stage will continue to promote WebCT and ensure that it is fully integrated into the teaching and learning practice. Training and workshops will also be offered on a regular basis. Strategies on achieving better forms of teaching and learning will be looked at. While many universities are still experimenting with teaching and learning in electronic environments, it is important to note that this experimentation requires institutional support to ensure continual success. This is the direction that the Taskforce will continue to thrive beyond its initial phase, with a set of recommendations to be drawn up linking changes at the macro level of systems and policies of higher education, to changes at the micro level concerned with curricula, teaching, learning and assessment.

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