

WebCT and Learning (An Oman Experience)

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Abstract—Online learning is said to be an innovative way of learning in the present high speed network setup. The World Wide Web Course Tool (WebCT), Blackboard and Moodle are used for teaching and learning in higher education institutions around the globe. This study investigated the impact of WebCT on students learning taking a course “Introduction to Computers in Business” offered at the College of Commerce and Economics, Sultan Qaboos University in the Sultanate of Oman. The finding showed that though the students have little exposure of WebCT at the beginning of the course but towards the end they have appreciated the importance and the use of WebCT as it is easily accessible from any Internet enabled location at any time. In addition it helps them in better understanding and learning the course material. The students preferred the course be taught face to face mode and enforced with supportive digital material for an additional benefits.

Index Terms— Information Technology, Internet, on-line learning, WebCT

I. INTRODUCTION

The recent advancement in technology has affected our lives. As computers are increasing in speed while decreasing in cost, and high-speed network connections continue to expand [1]. This advancement in technology transforming higher education [2], one example being the changes caused by broader use of digital course materials [3]. By the year 2012, schools and colleges will routinely use “computerized teaching programs and interactive television lectures and seminars, as well as traditional methods” [4]. Videoconferencing and other technologies will also help enrich distance media and provide many benefits over the traditional face-to-face mode of teaching.

E-learning is defined as a planned teaching/learning experience that uses a wide spectrum of technologies mainly Internet to reach learners at a distance. Lately in most Universities, e-learning is used to define a specific mode to attend a course or program of study where the students rarely, if ever, attend face-to-face or for on-campus access to educational facilities, because they study on-line. Online learning is said to be an innovative way of learning suited to meet today’s learner’s learning requirements, particularly as the industrial economy evolves into a knowledge-based economy [5].

Online learning can also be used in conjunction with face-to-face teaching, commonly known as Blended learning. Blended Learning is the combination of multiple approaches to learning. Blended learning can be accomplished through the use of 'blended' virtual and physical resources. A typical example of this would be a combination of technology-based materials and face-to-face sessions used together to deliver instruction [5]. Online learning, as an educational concept, which utilizes Local Area Networks (LAN), Wide Area Networks (WAN), or the Internet to communicate and spread digital material in support of learning and students-

teachers interaction. Wang and Hwang (2004) argued that the effective learning process could be created by electronically delivered contents in support of more learning [15]. The online learning is becoming the way to go if students are encouraged to take more responsibility on their learning goals [7] and if education is to be made available to all irrespective of location and status in the society on affordable scale [8].

Dunn (2000) projected changes in higher education’s landscape over the next 20 years [9], “The number of degree-granting institutions will continue to grow, while the number of traditional campuses will decline”. Several universities have already started offering courses using WebCT [10], Moodle, Blackboard or similar packages for their students’ on line learning needs. [7]. In Oman, Sultan Qaboos University has recently introduced WebCT in support of more learning by its students.

Background to the Study: The Sultanate of Oman is a developing country, which is located on the south east of the Arabian Peninsula. Sultanate of Oman is the second largest country among the Gulf States after Saudi Arabia. It is spread over 309,500 square kilometers and has a 1,700-kilometre coastline. Since the accession of Sultan Qaboos in 1970 to the throne, there has been remarkable progress in different fields such as economy, politics, education, and the civil services [11].

In Oman the introduction of information technologies is very recent and traditionally the preferred way of communication and learning is through the face to face mode. In this kind of environment resistance to adopt the new technology is expected. Besides all these resistance and difficulties Omani educational institutions are embracing technology though slowly to get its benefits in their educational activities.

Sultan Qaboos University is the only national university in the country, serving to more than 10000 male and female students at a time [12]. Recently the Center for Education Technology (CET), of Sultan Qaboos University has provided access to WebCT to all colleges in the University.

At the College of Commerce and Economics the researcher has introduced WebCT for students to have access the digital contents of the “Introduction to Computers in Business” course along with the traditional course teaching. The moving from traditional learning to using digital learning environment like WebCT may have some implications on students’ attitudes and learning.

Purpose of the study: The purpose of this study was to carry out the earlier work done to explore the student’s feedback on a wider scale on factors including the WebCT accessibility, student’s attitudes toward WebCT and its impact on students learning the material of the course “Introduction to Computers in Business”. The course is offered through face to face mode and supported by on line capabilities of WebCT.

Brief Description of WebCT: The WebCT is considered as a powerful tool for e-learning systems in higher education. WebCT provides a highly flexible e-learning environment

that empowers institutions across the educational spectrum with the ability to achieve their unique objectives. Thousands of colleges and universities around the world, from community colleges to large university consortia, are using WebCT to expand the boundaries of teaching and learning [13].

Learners use WebCT to access digital contents of the course independent of place and time [6], [14]. Learners who prefer support can also access the contents in self paced laboratory sessions with the assistance of an instructor. The learners who have attended face-to-face sessions can use this digital course material for further review and reinforcement. It also, according to Wang and Hwang (2004), enables users to submit and retrieve information and incorporate collaborative tools like chat, threaded discussion, email, white boards, internet links, etc. [15]. Further it can help users keep track of learning progress, download and upload learning materials, and link to relevant resources.

It allows educators to design the appearance of course pages, it provides a set of educational tools that can easily be incorporated into any course, and it provides a set of administrative tools that assist the educator in the task of course administration [16]. The advantages include a simple interface that can be accessed from anywhere a network-connected computer is available and at any time of the day [17].

WebCT is available in two major editions i.e. Campus and Vista. Campus Edition is designed for single institution usage basically it is a Course Management System. The Vista edition is designed for a more scaled deployment. It is an academic enterprise system provides private file space where students can work on projects and store them on their server. It could also include link to discussion topics, assignments, assessments and URLs [13].

II. METHODOLOGY

This study was conducted on students taking course "Introduction to Computers in Business" following a common course outlines. The students were both male and female with similar educational background and very little or no initial IT skills. This study was done on a wider scale than the earlier one and the data was collected in year 2005, and repeated in year 2006 and 2007 cohorts called as Phase I, Phase II and Phase III.

A questionnaire was designed for this study with fourteen questions, covering four major domains related to accessing WebCT, Attitudes toward WebCT, WebCT helps in understanding and learning and their preferred mode of learning either through Instructor, WebCT or both. The questionnaire was administered in similar way to all students in the course. There were two stages for data collection Prior and After. The Prior data collection point was at the beginning of the course, while After data was at the end of the course.

Responses to each item were based on Likert scale ranging from 1 to 5, where 1 = Strongly Disagree, 2 = Disagree, 3 = Uncertain/neutral (never used WebCT before), 4 = Agree, 5 = Strongly Agree.

The total number of students taken the course and responded to this questionnaire was 160. These students had similar educational background and having no or little initial IT skills. The students registered with the course were given

access to WebCT through similar log-in procedure to the digital material of the course. Simple statistical tests were used to analyze the data by comparing the means to assess the size of change from Prior to After stage. The results of these comparisons were incorporated to examine the change on issues like accessing WebCT, attitudes toward WebCT, learning through WebCT and students preferences i.e. Face to Face mode versus WebCT.

III. RESULTS AND FINDINGS

A. Phase I

This Phase I study was conducted in year 2005 with a sample size of seventy one students. Out of these seventy one, there were 37 (52%) male and 34 (48%) female students. The data were collected starting with the Prior and then After stage and processed by comparing the means to assess the size of change from prior to final stage. The results of these comparisons were presented in Figure 1 through Figure 4.

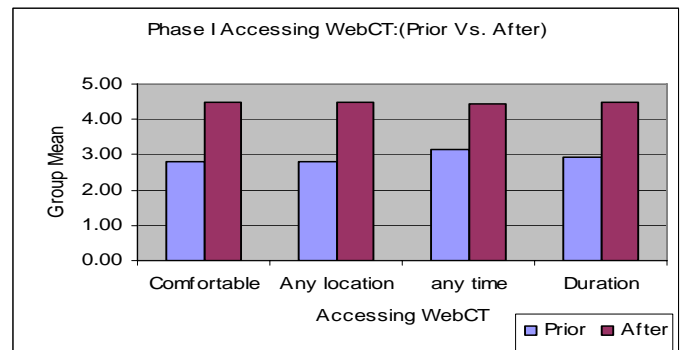


Figure 1: Accessing WebCT (Prior Vs. After)

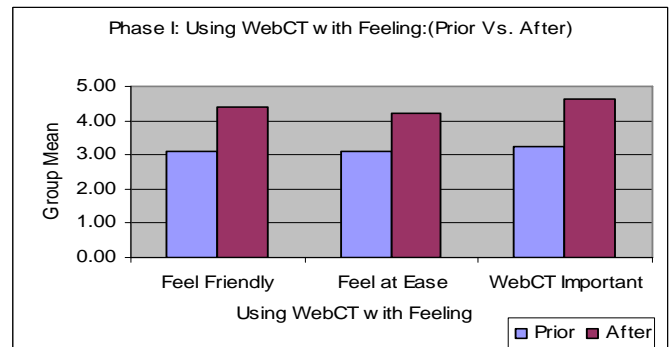


Figure 2: Attitudes toward WebCT (Prior Vs. After)

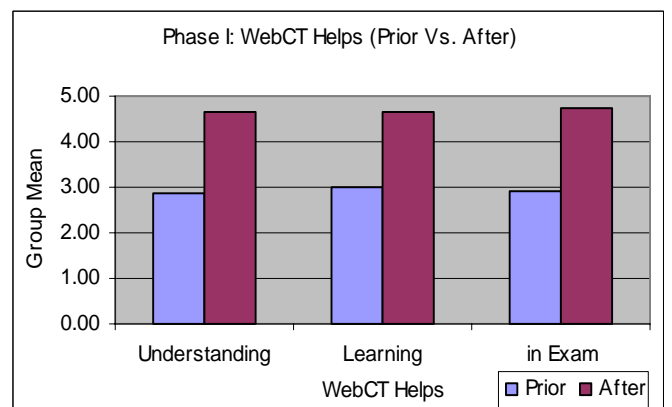


Figure 3: Learning through WebCT (Prior Vs. After)

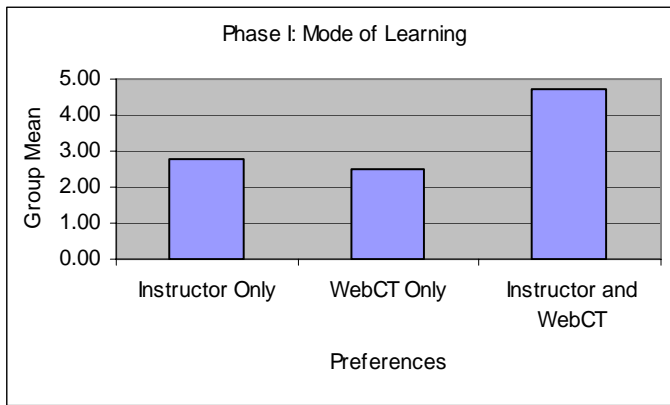


Figure 4: Preferred Mode of Learning (Prior Vs. After)

It appears that the students were having little or no exposure of WebCT Prior to the course. But when the instructor enrolled them, then the students were freely exposed to WebCT. It was interesting to know that the students found WebCT easily accessible from any networked computer at any time of the day for any length of time as shown in Figure 1.

The overall attitudes toward WebCT was found poor at the beginning of the course (M=3.16), but at After stage most students responded very high (M=4.48) as shown in Figure 2. As we have seen earlier that the students Prior to the course were having no or little accessibility of WebCT. It appears that it may be the cause of poor attitudes at the beginning of the course. When the students of this course were given equal and free exposure to WebCT, their overall responses at After stage (M = 4.48) indicating a positive change from Prior to After. It appears from students responses that they felt WebCT as an important tool for learning and also felt at ease while using it. This indicated their more positive attitudes toward WebCT.

The overall perception of students towards the WebCT as a tool for learning was poor Prior to the course as indicated by their responses (M=2.93). But when asked at After stage of the course the students responded very high (M = 4.69). This indicated the positive impact of WebCT on their learning as shown in Figure 3.

The results support the Wang and Hwang (2004) findings that WebCT enhanced learning and encouraged students take more responsibilities on their learning goals [15]. The students have indicated the positive effects of WebCT on their better understanding and learning the course material as well on their better exam preparations. It seems that more accessibility of WebCT contributes to more positive students' attitudes toward WebCT, which in turn contribute to their better understanding and learning the course material.

The students were asked their preference mode of learning either through instructor only, WebCT only or the combination of both i.e. Instructor and WebCT. The overall students mean response was lowest for the WebCT only (M=2.49) while for the Instructor was relatively higher (M= 2.77). But the most preferred response (M = 4.71) were as that the course be taught by Instructor and enforced with digital material on the WebCT as shown in Figure 4. As many universities are offering courses through a blended mode i.e. in conjunction with our traditional face to face mode along with technology based appears more desirable.

B. Phase II

This Phase II study was a repetition of Phase I study and conducted in year 2006. There were 55 with 26 (47%) male and 29 (53%) female students. The data were collected in the same sequence starting with the Prior and then After stage and processed in the same manner as in Phase I. The data were compared between the initial and final stages to assess the affects of the introduction of WebCT in the course.

The results on issues accessibility of WebCT, students' attitudes toward WebCT and its effects on learning and students preference on the mode of learning are shown y in Figures 5, 6, 7 and 8.

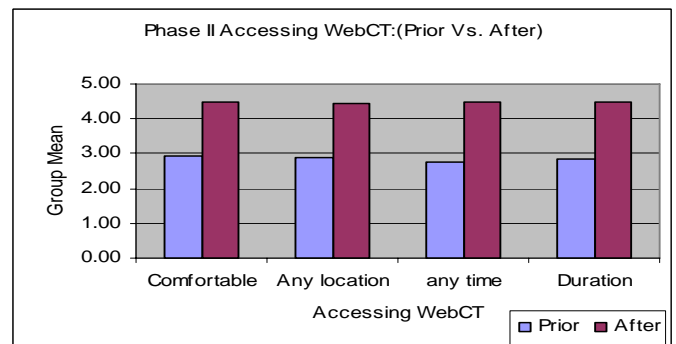


Figure 5: Accessing WebCT (Prior Vs. After)

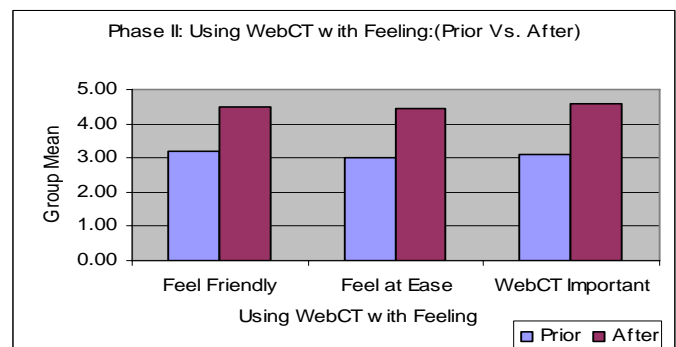


Figure 6: Attitudes toward WebCT (Prior Vs. After)

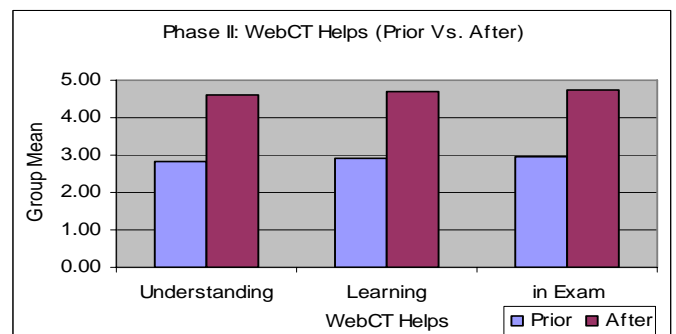


Figure 7: Learning through WebCT (Prior Vs. After)

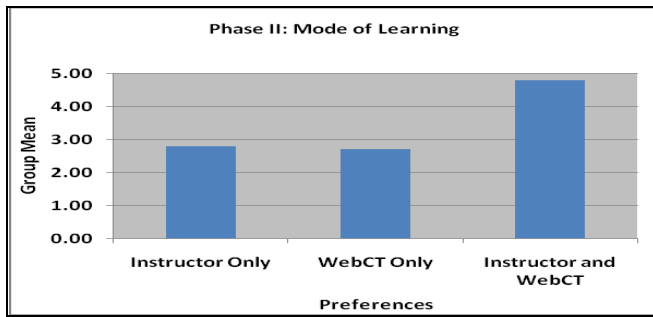


Figure 8: Preferred Mode of Learning (Prior Vs. After)

The results were very much similar to the Phase I; the students were having little or no exposure of WebCT Prior to the course, so their attitude and their responses on learning using WebCT were almost neutral. The overall perception of students towards the WebCT as a tool for learning was poor Prior to the course as indicated by their responses. But when asked at After stage the responses were far higher than the Prior stage. This indicated that the students have strongly appreciated the impact of WebCT on their learning with positive attitudes toward it and their preferred mode of learning is not through instructor or WebCT only but the combination of both as shown in Figure 8.

C. Phase III

The phase III study was a repetition of Phase I and II and conducted in the same manner on the cohort of Spring 2007 semester. The sample size was 34 with 18 (52%) male and 16 (48%) female students.

The data was collected in the same sequence starting with the initial stage i.e. "Prior" and then the final i.e. "After" stage and processed in the same manner as in Phase I and II. The data of the two groups were compared at initial and final stages to assess the influence of WebCT on issues similar to Phase I and II studies. The results of this Phase III are presented In the Figures 9 through 12.

The results were very much similar to the Phase I and II, the students were having little or no exposure of WebCT Prior to the course, so their attitude and their responses on learning using WebCT were almost neutral.

The overall perception of students towards the WebCT as a tool for learning was poor Prior to the course as indicated by their responses (M=2.93). But when asked at After stage of the course the students responded very high (M = 4.71) appears as they have appreciated the impact of WebCT on their learning with more positive attitudes toward it. Moreover they tend to prefer that the course be taught by Instructor and enforced with digital material on the WebCT as shown in Figure 12. It was interesting to know that the results were similar even the sample size was smaller.

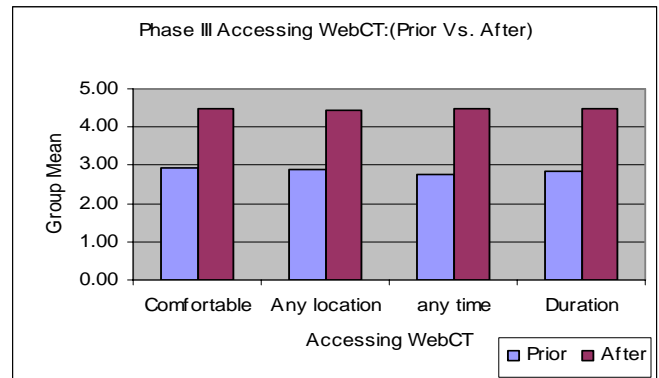


Figure 9. Accessing WebCT (Prior Vs. After)

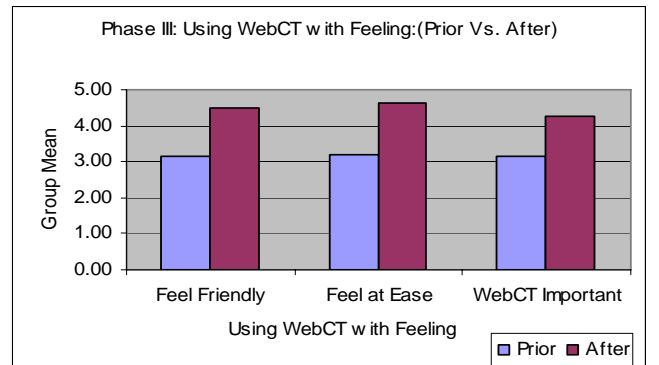


Figure 10: Attitudes toward WebCT (Prior Vs. After)

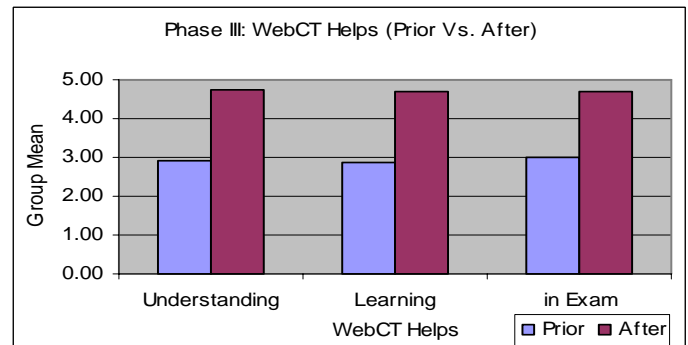


Figure 11: Learning through WebCT (Prior Vs. After)

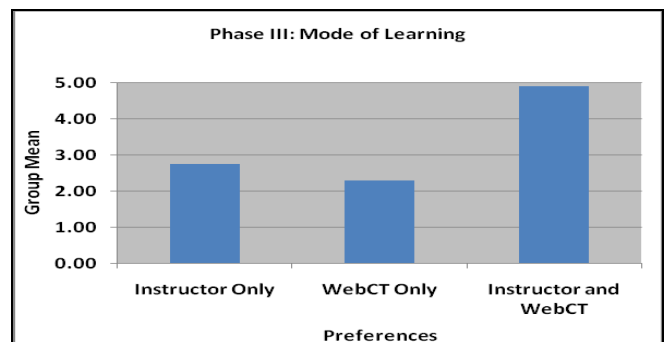


Figure 12: Preferred Mode of Learning (Prior Vs. After)

IV. SUMMARY AND CONCLUSION

The findings suggest that the students get better understanding and learning through WebCT with positive attitude and most students preferred that the course be offered through a blended mode i.e. combination of technology based and traditional face to face mode.

In summary, those students who were exposed to the WebCT online learning environment, had positive attitudes toward WebCT and in turn had better learning and understanding of the course material. The findings of this study are also in line with Koohang (1989), Hunt and Bohlin (1993), in that greater use of IT brings about more positive attitudes and hence greater confidence in the users [18], [19].

This study suggests that students After using WebCT have positive attitudes toward it which leads to their better learning and understanding the course material. The students did not reject class sessions face to face mode but preferred this mode be complemented with WebCT for better learning and understanding the course material.

The Distance and Distributed Education Center makes higher education a possibility for those who face obstacles to taking undergraduate or graduate courses in a traditional face-to-face classroom setting particularly in Oman where this research was conducted. Here the students population is spread across the country and having a single national university in the capital.

As the Internet and other information technology devices are becoming more prevalent while technological fluency is becoming a common expectation. Distance education is becoming more abundant, especially online, and location independent, increasing the need for effective course-management systems and teaching strategies that utilize technology. The more use of WebCT, Blackboard and Moodle or similar packages may impact the students learning and understanding with positive attitudes may pose a challenge to our traditional institutions offering courses in traditional face to face mode. Most students preferred face to face mode along with supported online digital course contents for comfortable learning.

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