

Web-based Teaching in Particular Developing Counties, Experience at “Sulamani University”

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Abstract— Throughout the progress of technology at Kurdistan Region Independent (KRI) Universities, it was investigated the influence of technological resources on teaching and learning at the KRI Universities. The all modifications of technological resources occurred from past up to now which created a new teaching and learning generation. Before year 2003 the traditional approach was applied in teaching and learning without any improvement due to the sanctions over Kurdistan Region by Ba'ath Regime. As a result of that, the universities at Kurdistan were isolated from the universal development of technology. Respectively, traditional teaching (TT) approach (or On-campus teaching) was more common at the University of Sulaimani as teachers had limited materials that they relied mainly on the suitable books for the course, face to face, and (whiteboard-and-marker) teaching. The new generation, namely electronic teaching (ET) (or Off-campus teaching) started after year 2003 because the University of Sulaimani did not go through all the stages of developing technology, therefore, most modern technology were brought to that university; for example network, computer and internet. However there is still a gap between TT and ET because of unavailability of electronic learning (e-learning) infrastructure or any e-learning (EL) center at that university so far. Despite that, the web base teaching (WBT) has not been functioned yet and that is turn out to be a gap between teachers, learner and technologies; in addition to that teachers and learners have been using technologies for the reason of teaching but they don't have sufficient background about the fully e-teaching (ET). This paper discussed the function of modern technological devices components (computer, internet and networking) to teaching approach and the method that has been created here is a web base teaching (WBT), with multimedia devices by lecturing video synchronized with PowerPoint which contains of twenty five week- lectures loaded to specific domain name and students can retrieve whenever they want. Finally, this paper examines the results of In-class-Test between groups of ten students in Computer science Department which they will have test by both of the methods namely on & Off-campus-teaching. Subsequently the lecturer investigates which result is more attractive by the teachers and students. The results show either in traditional or on the Web and ways or utilizing the computer and internet with strong network infrastructure for improving teaching in Sulamani University. The use of software application Camtasia studio8 for PowerPoint slides with teacher voice combined. The investigation of the real time for all both ON&OFF campus by testing groups of students and compare the results between the results.

Keywords— *E-learning and e-teaching; based-Computer teaching; web base teaching; On and Off campus teaching*

I. INTRODUCTION

CBT stands for "Computer Base Teaching" [1], but uses computer for training by trainer it another time is CBT (or Computer Base Training) also computer for testing (or Computer Base Testing), to and from computer has grown into an extremely popular of device among university of Sulamani students and teachers. Computer makes life much more easier for teachers' session-preparation. The session-presentation (connect to output device Data show projector) [2], session-explanation and etc. In actual fact, teaching without computer it's impossible to occurred CBT, and the CBT on its own is impossible to create fully Web Base teaching (WBT). The network and internet facilities influence the CBT to progress to another new generation of teaching. This generation helps teaching profession became hassle-free for teachers because teachers can delivery lecturer or any instruction regarding teaching strategy to

learner very easily and accurate [3]. Thus, CBT increases the interaction between teachers and students [4]. Internet facility is a strong backbone for both WBT and off-campus because the entire ICT without internet is neither WBT nor off-campus. For the reason that a synchronize ICT tool was seen to play a large part in this development for on-campus and off-campus delivery of subject [5], the uploaded lectures-video-PowerPoint on the web can be benefit for off and on campus learners. The deliverability of synchronized lecture –video-PowerPoint is more rapidly, accurate and affordable by off-campus teaching and on-campus teaching. Also the use of computer with incorporating the World Wide Web (WWW) is more powerful and reliable than the Mobile phone because computer has better ability than the mobile phone [6]. The role of new educational scenarios is to initiate and maintain an interactive process of presenting educational concept and their possible realization with technological

tools to the teachers. Thus, its act as a 'bridge' between the world of teaching and the world of software design [7]. The proposed system namely WBT or off-campus teaching is an experiment for solving the problem of those students with lack of time, money and physical condition to attended to on-campus. Additionally, due to large number of the students in classes or students' residence far from the University of Sulamani and etc. the proposed system is an excellent solution for most of on-campus' students which they have problems of taking notes or difficulty to understanding. Otherwise it activates the environment of teaching and learning, improves the student's enthusiasm and produces enhanced interactivity of teaching, also help to enroll more students in university. As a result, it has affected the society positively the society will be educated in a better way. The important of this paper is that to show best selection of methods of teaching students.

II. BACKGROUND

In the old generation, TT or on-campus teaching was in physical classroom, and teaching activity was by words of mouth. Teacher was asking questions like "How far you understand this subject" and not unclear results outcomes for both students and lecturer. Internet make world very small but the internet facility and computer instrument, for instance e-mail, instant chat, short message service (SMS), Mobile phone, and many other ways of communicating has evolved after years 2003 for the reason of teaching at the University of Suleiman. The Internet and mobile technologies reached to that level in which students and teachers can communicate with each others for the reason of teaching or learning [6]. Teachers can send lessons, exam time-table, and Assignment title by SMS or email. Using Mobile and email for teaching activity are not a fully ET if compared to WBT, WBT is not only ET it is a fully ET. The level of digitalize and capacity in WBT are much higher than Mobile learning and E-learning. Learner would be able to retrieve all lecture notes without attending the class and namely distance teaching, that mean teacher can load her/his lectures into specific web domain. Students in off-campus teaching can access to the domain and easily call the synchronized lecture-video-PowerPoint or download PowerPoint lessons. The lecturer-video-PowerPoint is designed by using of Camtasia Studio and it's a better understanding of how to create technically solid eLearning lessons by using Camtasia Studio [8].in addition,

Lecturer notes are available twenty four hours a day and seven days a week, which is amazing chance to reduce using of papers and pens and white boards also it will be saving time, effort and money for both teachers and students instead attending the classes. The Web Not only will enable distance learning, but it will also enhance student feedback [9], accordingly WBT provides a great chance for those students who have difficulties in understanding the lectures, by repeating the lecture at home which considers a good

supports. Most of the people believe that On-campus was uninteresting because of unchangeable of the subject Area, hence same notes, books of previous years and depending on student's attendance and etc. Teaching was very primitive and Quality of teaching (QoT) neither is high than ET nor WBT. The ICT is an inescapable component of changes now facing education in the United States, indeed throughout the world [10]. In general, the technology development becomes a part of our real lives especially in the high education sector. The computer, networking and internet are backbone of WBT. The improvement of the WBT Quality of service is return to globally of internet. Due to the nature of their subject, technology teachers have found ways to make learning active and exciting [11]. In real life, whatever the advantages of any system must have disadvantage as well. The disadvantages of using WBT by students are reducing the physical activity and sitting for long time in front of computer is unhealthy, also absence of real time. In order to keep away from poor health, students must do ten minutes some simple activities for each an hour working on computer. The paper starts with the background used for this research. Then, a brief description of the system as well as the trial that took place, subsequently a discussion of the survey results is presented.

III. ON-CAMPUS VS OFF-CAMPUS STUDY

Distance Campus [11] or Off-Campus is a Distance study (DS) and Distance teaching (DT). It's not a new method [11]. The real time activity for semi-electronic Off-Campus is very poor especially for that semi-electronic Off-Campus that published over the specific URL and the common examples of semi-electronic Off-Campus are 1) PowerPoint-slides-lecturers, 2) PowerPoint-slides-lectures with voice (i.e designed by Camtasia software). The role of real time activity is very poor in both PowerPoint-slides-lecturers and PowerPoint-slides-lectures with voice. the real time activity availability is zero if compared to the ON-Campus methods (face to face) teaching or learning for both mentioned method of learning in sulamani university. The DT and DS is occurs in the mind, independent of time and place but as mentioned the real time is not as good as the On-campus. Although the term "distance campus" has come to primarily mean on-line delivery systems. Nevertheless the use of webcam between the teacher and students for the reason of lecturing is very common and both students and teacher can see each other by webcam and it's possible to asking questions from students and teacher can answer student's questions. The webcam communication between students and teacher over network by the medium of internet is create a new method namely fully-electronic-Off-Campus. The fully-electronic-Off-Campus is as same as to the On-Campus in the respect of functionality, but the real time activity in ON-Campus is perfect and still much better then the fully-electronic-Off-Campus. The ON-Campus faults effects are not reduce the real time activity but Off-Campus faults (i.e. internet faults, network faults and computer faults) are

reducing the quality of real time activity. Thus, the poor response of internet, network and computer increase the unreliability of real time. The quality of real time of ON-Campus is not changeable if compare to Off-Campus real time. Since students and teachers owning computer with internet facility; they may perhaps easily connect to uniform resource locator (URL) link addresses. For that reason student's on-campus activity by the teacher into the physical classroom has completely modified toward off-campus. In order to take advantage of this service it was obligatory to have the WBT address link (URL). Proposed off-campus software real time activity is very poor if compared to the ON-campus due to the face to face teaching and learning is fully real time for example teachers and students can asking and answering each other's to how far they understand. This paper investigates the test results of all methods with the most popular method for the learning strategy in the mentioned university in the computer Department.

IV. CBT OR WBT

Nowadays, most of the teachers in Computer Department are using technologies as a resource of teaching in a face to face class teaching (ON-Campus). The examples of the teaching resource software are Microsoft PowerPoint, Camtasia Studio, and internet, but the common hardware resources are a computers and network facility. The use of any computer hardware or software to support traditional learning in the ON-Campus is modifying the ON-Campus to Blended- ON-Campus. CBT is an example of Blended- ON-Campus and it is impossible for computer department teachers that teach students without computer. In order to Design any WBL, the web developer should thought about the domain name and select a good domain name. We suggest that the University of Suleiman is a great chance and published in a popular web site for ON-Campus, Blended- ON-Campus, and fully Off-Campus. One of the advantages of fully Off-Campus is that 24/7 are available. Electronic learning or e-learning is an umbrella term for learning enhanced by the use of computers. To make this happen efficiently, there are many technologies in use, such as CBT is for blended-ON-Campus. Also WBT with webcam is for a fully Off-Campus.

Computer Based Training (CBT) is a blended-ON-Campus and new-age way of learning. It is a form of education in which a student learns by using special training programs while on a computer. This system worked well in the pre-Internet days, but with the explosive use of the Internet, the scope of CBTs is forced to expand. It has several advantages over traditional classroom learning methods and over self-taught books.

A. Advantages of Blended-ON-Campus CBT:

The student can think, answer and give feedback very easily on the topic. It is a good chance for students to study a stimulating environment where the student can learn at his own pace. Student is able to take the course at his convenience without any expense of time or travel. By being

accessible to the widest audience at multi-locations, it is cost-effective for the students. It's not economic for student only but it's economic for teacher as well. Finally the CBT make the On-Campus much quicker, hassle free and organized by using of information communication technology (ICT) recourses. Another generation of teaching is:

WBT: This is a subset of CBTs in which the material is made accessible on the Internet by applying Web technologies. Typically, it has text and graphics, animation, audio and video, and needs additional bandwidth and software to work optimally. WBT is also referred to as "online courses" and "Web-based instruction". It presents the latest content of any topic that can be modified and is set in a framework of self-directed and self-paced instruction. It can also be evaluated and adapted, without a computer platform. The roles of webcam are modifying the WBT towards to fully-electronic-Off-Campus.

B. Advantages of fully-electronic-Off-Campus-WBT:

Training or teaching to users is very easily delivered by WBTs can be either in the form of individual or group training Multi-platform capabilities are possible, over different operating system (OS) such as: Windows, Mac, Linux, among others Content can be easily updated and students can get answer from the teacher easily by webcam communication in the respect of real time. The benefits of fully-electronic-Off-Campus-WBT are as same as to the ON-Campus except the real time quality of ON-Campus is better than fully-electronic-Off-Campus-WBT. Also fully-electronic-Off-Campus-WBT is much tidier and cost-effective. Table 1 for different modes of teaching

V. RESULTS AND DISCUSSION

The proposed System evaluated by four different multiple choice exams for a group of ten students with duration of half an hour in four different days. The first exam-evaluation set for those students that attended to ON-Campus methods with availability of real time. the second exam-evaluation set for same group of students and same time exam duration that not attend to class OFF-Campus they only have a PowerPoint-slides-lectures to prepare their self for second exam-evaluation.

Table 1 shows comparability between Off-Campus-Teaching and ON-Campus-Teaching in respect of Real Time.

Specification			Visited Class-Need	
Types	Technology	Status	learner	Teacher
Off-campus-	Web Teaching	Real-time (Dynamic)	NO	NO
	PowerPoint(slid&	Not-	Yes	Yes

teaching	sound designed by MS-Camtasia)	Real-time (statics)		
	PowerPoint(only slides)	Not-Real-time (statics)	Yes	Yes
On-campus-teaching	Traditional face to face teaching(in class)	Real-time (Dynamic)	Yes	Yes

The third exam-evaluation set for same group of students and same time exam duration that not attends to class OFF-Campus they only has PowerPoint-slides-lectures with voice. The final exam- evaluation set for same group of students and same time exam duration that ON-Campus and using all OFF-Campus methods namely PowerPoint-slides-lectures with voice. The exams for Different subject area (Models) are four exams and must be with the different results exam. The exams are thirty minutes duration with fifteen multiple choice and students must answer all multiple choices. The selected model is web programing and lecture topics are four different chapters which are (exam1 is HTML, exam2 CSS, exam3 is web database MYSQL, exam4 is PHP) all lecturing duration is two hours and twice times and two day after the exam will be set. The preparation of exam for students are using four different technology of studying-students notes, the first students notes is traditional notes in class by attended student in face to face class. The attended students in a class can make notes from teacher. First exam preparation for students is by reading his/her class notes. The minimum grads to maximum grads are shows which one is the best for e-learning in the Sulamani University. The higher real time level between lecturer and students which are in the face to face in ON-campus methods are recorded very good student’s results exam. Thus, it is much higher than the other with inappropriate real time. The inappropriate real time returns to the low bandwidths of internet and etc. The exam results for those students had exam that lecturing by fully-electronic-Off-Campus-WBT are not as good as the ON-Campus teaching.

Table 2 shows the ranking of student’s exam results and best results

Types	Technology	Learner Visited Need	Percentage		Ranking
			Real-time	Min to Max	
Off-Campus-teaching	A)Web Teaching	Yes just for exam	70% to 80%	65% to 80%	3
	B)PowerPoint(slid& sound designed by MS-Camtasia)	Yes just for exam	Zero%	59% to 77%	4

	C)PowerPoint(only slides)	Could be both	Zero%	52% to 70%	5
2)	On-Campus-teaching	Traditional face to face teaching(in class)	Yes for class and exam	100% to 90%	1
3)	All types together	On-Campus & Off-Campus-	Blended or mixed	mixed 69% to 89%	2

VI. CONCLUSIONS

Since the web programing language PHP and HTML to design dynamic web based learning is easy to handle and the designed proposed system make more attractive for Off-Campus students because seven day a week are available. Also teachers and students are saving time, money and effort .the only disadvantage of using WBT by students are decrease the physical activity and sitting for long time in front of computer is not unhealthy. Also the results might be not accurate but we still can evaluate and select best methods of learning with real time activity,

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