Web Based Materials for Teaching and Research

Usang Usang Bassey
Department of Educational Administration and Planning,
University of Calabar, Calabar, Nigeria

Abstract: The premise of this study is that the effectiveness of web in contributing to learning will be a function of web-model alignment and the appropriateness of the model to a particular learning situation. It further examines the usefulness and impact of the internet in advancing research, learning and teaching abilities and techniques of the researchers, teachers and students, respectively. The literature tends to use the following words interchangeably: online education and web-based education, web based teaching and resources, web assisted learning and web mediated learning; virtual learning environments, online courses and web-based courses. The researchers are using two terms in a more specific manner. Online education means the use of an integrated and global accessible collection of teaching materials for the attainment of course objectives. These teaching materials could be used to augment a campus based traditional class or for a web-based course. Web-based education means the most extreme form of online education that uses streaming videos and the more advanced functionalities available in educational software and where there is no actual face to face contact between the teacher, student and the researcher.

Key words: Web based resources, teaching, researchers and students, education, learning hardware

INTRODUCTION

Web based teaching are a subset of Computer Based Training (CBT) or electronic learning (e-learning) used to leverage the world wide web for the delivery of instructional materials. The impact of information technology (which includes web technology, software or hardware tools) on the overall teaching environment is becoming more pronounced. The ability to incorporate information technology into instruction has been deemed to be one of the most important professional competences of teachers (Fisher, 1997; Scheffler and Logan, 1999). Web based teaching materials emerged as elements on personal web sites with the proliferation and adoption of the internet in the early to mid 90s. Beyond personal publishing, web based teaching materials were often published online as samples and supplemental materials by commercial entities experimenting with the world wide web. The internet is but a ripple on the surface of the educational institutions, this internet technology allows teachers and researchers like students keep up with their minds, it allows them try ideas as soon as they come up with them, similarly the internet provides learning, teaching and research which involve students, teachers, learning materials and even the environment at large. As a result of the internet, web based teaching and research is fast creeping into the consciousness of teachers and researchers as a result teachers and lecturers incorporate the internet through such techniques as posting course syllabus and readings on the web using interactive course design using interactive course design packages such as WebCT, firstclass, email, video conferencing and live lectures (video streaming) and other communication tools.

The eagerness with which many instructors approach integrating web based materials, provides a significant opportunity for collaboration and interaction with students teachers and researchers.

WHAT ARE WEB BASED RESOURCES

Web based teaching are a subset of Computer Based Training (CBT) or electronic learning (e-learning) used to leverage the world wide web for the delivery of instructional materials. The growing popularity of the internet as a source for information resources leads to the need to establish and apply rational collection development criteria to the acquisition of web based materials. There are several reasons to develop collections of web based resources for libraries, web based resources can be very convenient for users since, materials are delivered quickly, they are delivered directly to a computer station without a patron having to collect materials from around the library building. When such materials can be delivered to a patron's home or office computer, convenience is increased even more and is likely to result in greater user satisfaction. If a library can provide access from the user's desktop in effect patrons

have year-round, 24 h access to materials. Thus, when a library, university system or consortium acquires, a web based product, it essentially provides multiple copies since, the product can be widely distributed to a very large customer base. If the system components are spread over a large geographical area this can provide much easier remote access to the materials. Increasing interest in distance education seems to be a trend at many educational institutions and as a result, the need to supply library materials to distant locations is growing. Providing Internet access to full text materials for remote users is one solution to this service issue.

THE USE OF WEB BASED TEACHING AND RESEARCH MATERIALS

Several teachers and institutions provide access to web based teaching materials through links on web pages. An example is how Columbia Education Center provides access to supplemental web based teaching materials. University professors and departments often provide similar resource pages to augment learning opportunities for their students. These resources are especially helpful when they provide an extension beyond what is covered in the classroom (materials on specific disciplines for education majors who may be having deep knowledge in a specific discipline). Several companies and cooperative efforts have emerged to provide online access to web based teaching materials. These entities range from companies producing their own edutainment media to sites provided to aggregate links to other existing content. While the missions of these organizations may differ, they all focus on furthering the world wide web as the delivery medium for teaching materials. Web based teaching materials emerged as elements on personal web sites with the proliferation and adoption of the internet in the early to mid 90s. Beyond personal publishing, web based teaching materials were often published online as samples and supplemental materials by commercial entities experimenting with the world wide web.

Sites devoted to specific topics began aggregating links to these resources in efforts to capture educator audiences in the late 90s. These concepts were then extended to the Learning Management System (LMS) and Learning Content Management System (LCMS) as a way for instructors to organize and provide access to learning materials already available online. These systems also contain authoring tools that allow pieces of entire courses (including web based teaching materials) to be published online. In the past and in some present institutions, lecturers give their students lots of handouts but yet there are institutions where instructors use the web as a good means to help them organize course information and materials so as to enable them deliver information to students and even researchers.

WEB TEACHING MODELS

Teaching models prescribe tested steps and procedures to effectively generate desired outcomes. When we are learning and teaching, there are four basic communicative skills involved namely: listening, speaking, reading and writing. Web based education provides the opportunity and necessary materials for the student to practice these necessary communicative skills from endless text based materials to read online to audio and video files to facilitate a more efficient and interesting learning environment. The demand for online learning is growing fast. However, most web based learning environments are designed and implemented for academic or professional purposes and not for netizens (network citizens). As Pickering (1995) pointed out, people who could educate on the internet might not necessarily be teachers in the traditional sense but fellow navigators in cyberspace. Information on the web makes shared knowledge immediately available to anyone in the world with a suitable computer connection, anyone can publish such information (Kearsley, 2000). If anyone prepared to engage in web education can be enabled to teach regardless of age or occupation then information technology can be said to have provided, an important benefit thereby taking advantage of the internet and the mechanisms of social groups and allows everyone to learn and acquire new knowledge openly, freely and interactively.

ISSUES IN WEB-BASED TEACHING

There are issues that arise when traditional universities use the web to move into a fully web based any place/any time educational environment.

Technical issues: A good way to appreciate the technical issues involved in web based education is to consider what one is trying to accomplish when translating to the web the activities that normally take place in a face to face learning environments. These technical issues includes: content, delivery, access interaction, assignment, study guides, syllabus being translated from the normal pattern and put on a website for easy accessibility wherever there is internet access.

Administrative issues: If education is offered electronically, all student-oriented administrative activities from registration to graduation should also be available. Online offering should include:

- General information
- University/college/programme/courses, Registration
- Advising/counseling
- Application
- Fee payment/confirmation
- Course demos

Graduation where a student can sit at the comfort of his home to carry out this processes with a mouse click and administrators able to present up to date data on various administrative issues.

Control issues: In addition to the addressing quality issues, universities must also pay special attention to how traditional methods of evaluating learning are translated into an exclusively web based environment.

With everything we do we have some advantages and also disadvantages so we will just briefly list out some of the merits and demerits of web based materials for teaching and research:

Advantages:
- Ability to link resources in many different formats
- Resources can be made available from any location at any time
- Potential for widening access for example, to part time, mature or work based students
- Can encourage more independent and active learning
- Can provide a useful source of supplementary materials to conventional programs
- Can be an efficient way of delivering course materials
- Students can receive instant feedback on their performance
- It is cheaper and easy to run
- It provides real possibilities for authentic interaction
- It adds a huge contribution to leisure in the educational system
- Students will develop and exploit their own imaginative and intellectual capabilities
- It will facilitate collaboration and interaction among students and teachers
- Providing access to emailing and files transfer
- Applying for further studies overseas and ordering equipment's, books etc. from suppliers outside the country become an easy process

Disadvantages:
- Learners find it frustrating if they cannot access graphics, images and video clips because of poor facilities
- The necessary infrastructure must be available and affordable

- Information can vary in quality and accuracy
- Most online assessment is limited to objective questions
- Difficult to authenticate student's work because there is no personal supervision

WEB BASED EDUCATION

Technological change which not only permits new activities but makes those new activities superior in many important ways over the previous method of operation, creates long lasting innovations in society. Web based education is one of those innovations (Sue and Mary, 2001).

Why is the remarkably fast growing innovation of web ased education important to the world? Firstly, it is radically growing in the first world nations of the world, especially in the United States (Barker, 2002). This alone means that it will likely grow in other nations in the world as this innovation dominates education at all levels.

Secondly, teachers at all levels can merely post their syllabi on Blackboard but some have radically changed their whole method of teaching so that the class venue for the teacher and the student becomes the computer. The classroom now is a virtual learning environment. Learning is no longer bound by space and time (Sue and Mary, 2001). To use a metaphor associated with the past, the traditional classroom has become the expensive and difficult to handle as the rolled parchment manuscript when the printing press innovation was implemented. Web-based education has become the cheaper and superior printed book of the modern era.

CONCLUSION

Web based materials for teaching and learning can only be implemented with the use of the internet as a tool for interactive learning, teaching and research in the new phenomenon of the education era, it appeared with the development of the internet and websites. Web-based education has become the cheaper and superior printed book of the modern era, thus leading to the fast growth of online learning and as Pickering (1995) pointed out, people who could educate on the Internet might not necessarily be teachers in the traditional sense but fellow navigators in cyberspace and information on the Web makes shared knowledge immediately available to anyone in the world with a suitable computer connection. The moment we realize the advantages and disadvantages of web based materials, then the web will become an effective supplement for teaching, learning and carrying out research.

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