

Web-Based Tools and Effective Delivery of Distance Learning for Tertiary Education in Nigeria

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Abstract

Nigerian Universities cannot admit more than a quarter of candidates seeking places in the Universities. There is, therefore, the need for evolving an alternative means of providing University education for this marginalized group. The paper dealt with the form Distance Learning should take in this regard and the media that can be utilized. There are avalanche of web-based tools that can be effectively used to enhance communication, demonstrate concepts in interesting way, get other teachers' opinions about teaching issues, help students develop team work skills, and learn the use of internet responsibly, manage students records, enhance participation and assignments; improve students' writing and research skills; motivate students to learn; create websites, send e-newsletters, and write collaborative documents with colleagues or students. These web-based tools include on-line forums, chats, conference management, learning management system, mailing list, weblog, simulation, collaborative management, on-line survey; wiki; webquest; school management; picture management; and content management system. Despite the availability of these tools, most Nigerian Universities are not adequately utilizing them. Factors militating against their application and use and how they can be remedied were suggested. The paper identified the features and workings of some of the tools and how they can be used to facilitate effective delivery of Distance learning, and how they can be adopted or adapted to suit our peculiar situations.

Key Words: Universities, Media, Nigeria, Education, Distance learning, Tertiary education, Technologies and Admission.

1 Introduction

One of the major problems facing tertiary education in Nigeria is the problem of access and population explosion. There is a constantly high rate of unsatisfied demand for university education in Nigeria. Specifically, it is evident that a percentage range of 5.2% and 15.3% of the total number of candidates seeking admission into Nigerian Universities finally get admitted. This means that a range of 84.7% and 94.8% of candidates seeking admissions into Nigerian universities never get admitted each year into Nigerian universities (Okeke, 2009 cited in Aluede, Idogho & Imonikhe 2012). Education universally has been declared a right, as enshrined in The Universal Declaration of Human Rights of 1948. The National Policy on Education - NPE (2004) states that every Nigerian child shall have a right to equal educational opportunities irrespective of any real or unimagined disabilities each according to his or her ability. Section 1 paragraph 1 of the National Policy on Education stressed the intent of government in affording every citizen the opportunity to acquire within and outside the formal school system as much education as one can at the primary, secondary and tertiary levels in order to be able to contribute meaningfully to national development. Strategies for widening access to higher education including the universities to take care and provide a fair chance of access to citizens seeking university education is articulated in section 5 of the policy. In line with this, government has put in place programmes and actions that have reinforced widening access to university education. These include the introduction of Open University, the National Universities Commission and Joint Admission Matriculation Board to cater for the needs of educationally disadvantaged states. The above notwithstanding, there is a glaring disconnect between what is articulated in the policy and reality on the ground. (Okoroafor (2013) put it succinctly;

Most Nigerians prefer university education. Hence every year, universities exceed "get admission quota". Universities are constantly being inundated with admission request they cannot meet. The number of candidates who apply annually exceeds by far the vacancies available. For instance, over 1.5 million candidates apply annually for admission into universities nationwide but only about 500,000 is admitted. Some of these unsuccessful applicants become frustrated and sometimes, resort to crimes. With over hundred recognized federal, states and private universities across the country, millions of Nigerian youths that are desirous of university education find it difficult to access higher education. The issue has been attributed to the low carrying capacity of the universities. 96% of the candidates who sit for the Unified Tertiary Matriculation Examination (UTME) chose university as their preferred institutions; 1.69% chose colleges of education while 1.9% settled for polytechnic as their preferred institutions. The

situation has given rise to the proliferation of illegal degree awarding institutions, preying on desperate Nigerian youths craving for university education. Most of them claim affiliation to established universities in the United States, United Kingdom and Canada. Neighbouring countries have also discovered Nigeria to be a fertile ground for the business of illegal universities. Experts say the reason for the proliferation of illegal degree awarding institutions in the country is because of the limited space available in the university system. Experts say that the National Open University of Nigeria with sure function to come to amend conventional universities in giving all categories of Nigerians equal opportunities and access to tertiary education has failed to meet its statutory mandate. Private universities are on the other hand expensive and beyond what many Nigerians can afford.

The situation has resulted in inadequate facilities and over stressing of the available ones as well as admission racketeering. The mad rush for University education and its attendant effects on quality delivery of education has reduced the credibility of certificates and products that emanate from therein. Nigerian Universities cannot admit more than a quarter of candidates seeking places in them, in fact the Joint Admission and Matriculation Board data showed that in 2010/2011 session more than one million five hundred thousand (1,500,000) candidates applied for admission into Nigerian Universities. In the 2013/2014 Unified Tertiary Matriculation Examination (UTME) The Joint Admissions and Matriculations Board (JAMB) announced that over 1.7million candidates registered for the UTME, an increase of 13.35 percent compared to last year's UTME. The Minister of Education, Professor Ruqayyatu Rufai, alongside the Registrar and Chief Executive of the Joint Admission and Matriculation Board, JAMB, Prof. Dibu Ojerinde, at a news conference disclosed that the current capacity of tertiary institutions across the country was only about 500,000 (Afinsulu, 2013 & Scannews2013). The total number of universities, both public and private in Nigeria is one hundred and twenty two (122). As a result of the inability to cope with the upsurge in demand for university education, government has come up with programmes and policies to abate the situation, even though some of these end up aggravating the problem. For example, the National Economic Council recently approved the conversion of one Federal University in each of the six geopolitical zones in the country to a Mega University. They are expected to admit up to 200,000 students (Akinnaso, 2010). Others steps taken include the reform policies of quota system, and catchment area admission policy, poor and inadequate facilities and the limited absorptive capacity of Nigerian universities Akpotu (2005) cited by (Moti, 2010). Even where these policies are intended to raise standards, some are based on false premises and unilaterally imposed on the universities. For example, the conversion of one Federal University in each of the six geopolitical zones in the country to a Mega University is a Utopian scheme that should never have been contemplated in a country where nothing seems to work. Presently virtually no university in the country has adequate facilities for its present student's enrolment. It would be difficult for the six of them to accommodate hundreds of thousands of students, and they may not be able to have the needed competent teachers.

Granted that demand for university education has become very high in recent times and the fact that teeming numbers of youths cannot matriculate may be due to population explosion and the after effect of Universal Primary Education of 1976. Educational planners had predicted that Nigerian universities should expect more applications in some years ahead when the products of the Universal Basic Education begin to move into higher institutions. The demand for university education has reached an unprecedented high level that Nigeria needs more than double the current number of universities to meet the required need (Moti, 2010)

In the quest for abating this trend, an alternative means of providing University education for this marginalised group is evolved in form of distance education, which over the past decade has gained prominence and developed at an extraordinary rate (Pamela, Dupin-Bryant and DuCharme-Hansen 2005). Defined in its most basic form, distance learning occurs when the student and the instructor are logistically separated. Considered from this prospective, distance learning is not a new concept to academia. Educational institutions have been providing distance learning courses in various formats for many years. Correspondence courses were offered as early as the mid-1800s (Sonner, 1999). As technologies developed, various types of distance learning have evolved along with the technologies. Universities have been providing directed and independent study distance learning courses utilizing videotapes and interactive television since these technologies became available. The advent of Internet technologies and their application to distance learning resulted in an explosive growth of distance-learning courses. This growth has continued as more online courses became available through a variety of educational venues, and as such, has provided a means of providing alternative form of education for the marginalised groups. (Baker n.d), Schwier, (2001), McIssac, Blosher, Mahes, & Charalombos, (1999), Garrison, (2000), Dede, (1996), Karacapilidis, Abou Khaled, Pettenati, & Vanoirbeek, (2000), Rueger, Zahnd, Gurtner, Perrault, Abou Khaled, Pettenati, & Vanoirbeek, (1999).

The paper dealt with the form Distance Learning should take in this regard and the media that can be utilized.

There are avalanche of web-based tools that can be effectively used to enhance communication, demonstrate concepts in interesting ways; get other teachers' opinions about teaching issues; help students develop team work skills, and learn the use of internet responsibly. These tools can also be used to manage students records, enhance participation and assignments, improve students' writing and research skills, motivate students to learn, prepare websites, send e-newsletters; and write collaborative documents with colleagues or students. These web-based tools include on-line forums; chat; conference management, learning management system; mailing list; weblog; simulation; collaborative management; on-line survey; wiki; webquest; school management; picture management; and content management system. Many Nigerian Universities run distance education programmes, which at the very best are run taking barely the modus operandi of regular programmes and therefore are not immuned from the peculiar militating factors against the success of the regular University programmes. This gap is borne out of the fact that our Ununiversities are not utilising the invaluable contributions these tools presents.

The place of Web-based tools in the delivery of distance education cannot be over-emphasised. Pamela, Dupin-Bryant and DuCharme-Hansen (2005) perused literature and argued that Web-based distance education has emerged in higher education as a means for providing a variety of educational opportunities to a diverse community of individuals. As the number of participants continues to increase, so too does the importance of providing effective instruction that focuses on the needs of learners. Successful distance education is believed to revolve around a learner-centered system of instruction designed to meet the needs of individual learners. Web-based instruction is a rapidly growing instructional format that is challenging the traditional learning model in higher education. Many institutions of higher education are on the bandwagon, or are running furiously to jump on (Brahler, Peterson, & Johnson, 1999). The widespread availability and access to the Internet, a student population that is increasingly non-traditional, and occupational forces that require worker re-education, have fueled the avalanche of Web-based courses in higher education (Miller and Miller 1999).

2. Educational Web-based Tools

Distance education is the basis of different learning forms among which is web-based learning, the apprehension has always been the question of interaction. These Web-based tools as compiled by UNESCO Bangkok (2006) include:

2.1 Content Management System

A web content management system (CMS) is a sophisticated type of computer software that can be used to make the process of making and updating websites much easier and without the need of HTML skills using a CMS, the content creation process is separate from the design and presentation process. (UNESCO Bangkok, 2006).

2.1.1 Content Creation

On a website, "content" includes things like images, document (including reports, publications and fact sheets), sound clips and video clips.

A CMS allows people without technical web authoring skills to update and maintain a website. Content can be added to the database and displayed on a web page by typing or pasting normal text into a form within the CMS administration system.

Information about the content (metadata such as title, description, keywords, author, publish date, review date etc. can be added. This enables content that needs updating to be found and changed easily when it goes out of date. It can also be used to help manage work flow and maintain quality control by allowing an overall administrator of the system to set roles and permission for content. (UNESCO Bangkok, 2006).

2.1.2 Educational Use

Students and lecturers can use a CMS to easily create web pages. By being involved in creating materials for a website, students become familiar with the subject matter; and work together in groups to create materials for a website, students can gain a sense of pride in their work and a sense of purpose- motivating them to study the subject. Class websites can provide a means by which student can access useful information quickly and easily. Teachers can regularly update the class website with new materials for classes, instead of providing new books or making copings.

Websites makes it easy to share information, and so can make the administrative task more efficient. Storing and sharing information on line [on website] saves papers, printing costs and mailing costs. If information is stored on a website, that information can be accessed when you are away in school or office simply by viewing the website. (UNESCO Bangkok, 2006).

2.1.3 Creating Class Websites and Web Pages

A website can be like having a bulletin board in your classroom. Normally a bulletin board is put on the wall and has information on it about daily activities, a calendar of upcoming event in classroom website can provide the same thing for your classroom but instead of only being visible in your classroom, a website can be seen anywhere and at any time. (UNESCO Bangkok, 2006).

2.2 On-line Forum

An on-line forum is a web application [tool] that can be useful to hold discussions on the internet and to share documents. On-line [fora] are also commonly referred to as internet forums, webs forums, messages boards, discussion boards,[electronic] discussion groups, discussion forums and bulletin boards.

A sense of virtual community often develops around forums that have regular users. There are forums for almost every topic. Popular forum themes include; technology, computer games, fashion, religion, and politics. (UNESCO Bangkok, 2006).

2.2.1 Educational use

An on-line forum is a website on which people can discuss any topic. Participants in an on-line forum contribute their views and information to the forum in form of written posts. By participating in an on-line forum participants are able to respond to a topic and interact with other participants. Engaging in such discussion forces participants to think about the subject matter and explore various ideas and viewpoints. Since posts are expected to be short and straight to the point, participants must write their opinion briefly and succinctly. Engaging in this process compels participants to analyse information and construct knowledge on the topic.

An on-line forum can be useful in enhancing education in a number of ways. Participating in an on-line forum can make learning more interactive and stimulating. It exposes students to a variety of ideas and opinions, develops students' analytical and writing skills, and enable students to construct knowledge. (UNESCO Bangkok, 2006).

2.3 Simulation

A computer simulation is a model of a real life or hypothetical situation on a computer. Using computer simulation technology, a user can change variables and thereby see how changes in variables can change the outcome.

Computer simulations have become a useful part of mathematical modeling of many natural systems in physics [Computational physics], chemistry and biology, human systems in economics, psychology and in social science and in the process of engineering new technology, to gain insight into the operation of those systems. Traditionally, the formal modeling of systems has been via a mathematical model, which attempts to find analytical solutions to the problems which enable the prediction of the behaviour of the system from a set of parameters and initial conditions. Computer simulation builds on, and is a useful adjunct to purely mathematical models in science, technology and entertainment.

Computer graphics are often used to display the results of a computer simulation. Animations can be used to experience a simulation in real-time. In some cases animations may also be useful in visualising the buildup of queues in the simulation of human evacuating a building. Furthermore, simulation results are often aggregated into static images using various ways of scientific visualisation. Many games have been developed by using computer simulation technology. A simulation game,[also known as a game of status or mixed game] is a game that contains a mixture of skill, chance, and strategy to simulate an aspect of reality. (UNESCO Bangkok, 2006).

2.3.1 Educational use

Computer simulations are fast and cost effective means of demonstrating real life activities or reactions. Instead of purchasing equipment and taking time to set it up, teachers can simply present a computer simulation and students can manipulate the variables to see how the outcome can be changed. Simulations also make it possible for teachers to explain and present reactions that could not be demonstrated in real life. It helps students actually experience a system or problem and not just read or hear about it. (UNESCO Bangkok, 2006).

2.4 Weblog

A weblog or blog is like a journal that the whole world can read. It looks like a normal website but unlike a website, which typically lacks interactivity, a blog allows web authors get feedback on the comments and opinions they have published. Most blogs consist of text, and often have links to related information and websites. Some blogs also have photographs, video and audio clips, while some blogs are used as a mainstream medium for creating and disseminating news and information. (UNESCO Bangkok, 2006).

2.4.1 Educational use

Blogging software is used to create special sites on which people can write blogs which can be used for teaching and learning. Writing blogs on topics relating to course work encourages students to express, in writing, what they have learned, and this enhances the learning process. If students are required to communicate their ideas and opinions about what they are learning in blogs, it can help them to develop analytical skills. Blogs are published online, so students gain satisfaction from seeing their creative work in print, in the public domain. In other words, students receive feedback (UNESCO Bangkok, 2006).

2.5 Webquest

A Webquest is a learner-centred and inquiry-based educational activity which uses the internet to find, analyse

and synthesize information. Webquest enable constructivist learning and require creativity and higher level thinking skills, including problems-solving, analysis and judgment.

2.5.1 Educational use

Webquest is a learner-centred and inquiry-based educational activity which uses the internet to find, analyse and synthesize information. Webquest can be powerful learning tools because they bring together the most effective instructional practices into one integrated student activity. (UNESCO Bangkok, 2006).

2.6 Wiki

A wiki is a type of website that a group of users can contribute to. It enables documents to be written collaboratively. The most famous example of a wiki is “Wikipedia”, the online encyclopaedia with articles that are written and edited by authorized site visitors.

Using wiki technology, this type of web page can be created and updated very easily. Contributors do not need technical skills and do not need to know HTML. “Wiki wiki” means, super-fast” in the Hawaiian language, and it is the speed of creating and updating pages that is one of the defining aspects of wiki technology. Generally, no prior review is required before modifications are accepted, and most wikis are open to the general public or at least to all persons who have been allowed to access the wiki. (UNESCO Bangkok, 2006).

2.6.1 Educational use

Wiki software enables users to create wikis. A wiki is a type of website that a group of users can contribute to. A way to understand a wiki site is to think of a large black board with a paragraph written on it. Everyone is given an opportunity to erase, edit, or add content to what is already written. Unlike a blackboard, previous versions of the paragraph can be saved and everyone can write on the blackboard at the same time and from a long distance away.

Wikis can be used to embrace education in several ways. For example, since wikis are useful for creating collaborative documents, they can be used by teachers as a tool for fostering teamwork and online cooperation among groups of students. Using a wiki, students can collaborate to write articles on subjects ranging from what they learned in biology class and also an analysis of a piece of literature. Furthermore, several students can work on a given assignment concurrently. (UNESCO Bangkok, 2006).

Using wiki software, students can work in groups on-line to write a collaborative document. Group work has always been a part of classroom learning. With wiki software it has become much easier to monitor group work in all its stages. Wiki engines allows students and teachers to see and edit multiple drafts of a work, keeping it organized all the way through and making the most recent draft easily available. This leads to more organized collaboration in the classroom. (UNESCO Bangkok, 2006).

2.6.2 Online Textbook for Class

Students can use wiki software to create their own textbook for a subject.

2.7 Collaborative Management

Groupware (collaborative software) is designed to help people involved in a common task achieve their goals. Collaborative software is the basis for computer-supported co-operative work. Groupware can be divided into three categories depending on the type of interaction:

- communication tools, e.g. email, text chat and wikis;
- conferencing tools; and
- collaborative management (co-ordination) tools. (UNESCO Bangkok, 2006).

2.7.1 Educational use

Collaborative software is the basis for computer-supported cooperative work. It is designed to help people involved in a common management task to achieve their goals.

Examples of collaborative software include: eGroupware, php Calendar, Project Alumni and Scoop. What these tools have in common is that they enable people to work together on management activities. (UNESCO Bangkok, 2006).

2.7.2 Using eGroupware Software in Education

eGroupware is an on-line collaboration and management tool. eGroupWare can be used in various ways. For example, it can be used as an on-line version of a yearly planner. Because it’s on-line, it can be seen by many people at the same time. Your school, ministry or organization can keep track of activities using the on-line calendar and also assign tasks, monitor progress and store related information. Unlike a personal planner, this on-line planner can be shared with all school staff, all Ministry staff or all students in a classroom. Each person involved can contribute information to the on-line planner, can let others know when tasks or activities have been completed, and can keep up-to-date on what others are doing. (UNESCO Bangkok, 2006).

2.7.3 Using PHP-Calendar software in Education

PHP-Calendar software can be used to layout a schedule that can be seen by everyone in a particular school, education ministry or organization. Being able to see different lengths of time at once makes easy to split up yearly goals into daily tasks. For example, teachers can use the tool to share their plans about the lessons they will be teaching that term. Similarly, administration can use the tool to mark on a shared calendar what activities they will be undertaking in the near future. When everyone is able to see this information, there is less opportunity for confusion and miscommunication between staff, leading to greater efficiency and effectiveness. (UNESCO Bangkok, 2006).

2.7.4 Using Project Alumni Software in Education

Project Alumni can be used to create a large site for all students who used to attend a particular school or organization. This tool enables students to maintain contact with one another and with the school after they have graduated. By keeping in contact through the website, graduates can be informed about school activities, including fundraising events and opportunities for graduates to share their skills with students at the school. (UNESCO Bangkok, 2006).

2.7.5 Using Scoop Software in Education

Scoop can be used to publish and manage web content, to share information through a web bulletin board system and to post blogs. Scoop lets many people provide information to a shared website. This tool makes it easy to share ideas quickly. Therefore this tool can be useful for administrators or teachers who want to share and exchange information among themselves. For example, school administrators can use the tool to discuss a problem and find solutions quickly. Similarly, teachers can use the tool to share lesson plans or discuss different ways of teaching. (UNESCO Bangkok, 2006).

2.8 Learning Management System

Learning Management System (LMS) is a software package that helps teachers and educators to manage learning content and resources. While often thought of primarily tools for distance education, they are most often used to supplement the face-to face classroom.

The focus of an LMS is to manage learners, keeping track of their progress and performance across all types of training activities. An LMS is also used to assist in administrative tasks, such as reporting instructors, but isn't generally used to create course content. Usually an LMS is web-based so that students can access learning content anywhere and anytime.

All LMS offer the same basic tool set: a way to present content in a folder structure, assessment tools, survey tools, survey tools, discussion groups announcement boards, and gradebooks. LMS differ in user interface, features, licensing and pricing, services for course building and training, and integration with other on-campus systems such as e-mail and registration.

While most LMS are commercially developed, there are also several free and open-source (FOSS) systems. Sakai and Moodle are popular open source LMS. According to the Moodle website, this software package is a system for managing courses which is based on social constructionist pedagogical principles, and which is designed to help educators create effective online learning communities. Moodle can be used by teachers to create web-based courses. Such courses generally consist of several lessons, with each lesson including reading materials, activities (including tests and projects) and interactive elements to encourage students to engage in group work. Examples of other widely used LMS include (not FOSS): Blackboard, WebCT, Deisre2Learn, ANGEL, and eCollege. (UNESCO Bangkok, 2006).

2.8.1 Educational use

A Learning Management System (LMS) is a software tool that is used for managing learners, to keep track of their progress and performance in learning activities. An LMS can be used on any computer and can be used to assist just one teacher to manage one course, or can be used to manage the e-learning content and delivery for several teachers and thousands of students. (UNESCO Bangkok, 2006).

An LMS is usually used to:

- Manage users, enrollment, courses, instructors, and facilities.
- Deliver courses on-line.
- Facilitate self-paced learning.
- Send messages and notifications to learners.
- Provide learning resources in a central on-line location.
- Encourage and track student's interaction with class material, teaching assistants, and each other.

- Generate reports.
- Display scores and transcripts
- Provide schedules (using the Course calendar).
- Facilitate (online) communication and discussion of subject matter among students. (UNESCO Bangkok, 2006).

Picture Management

Picture management software (also called photo sharing software) enables you to manage and share on-line folders of photos. Using this software you can store, organize and catalogue images and set up on-line photo galleries and photoblogs. (UNESCO Bangkok, 2006).

2.9 Conference Management

Conference management software is designed to manage the entire conference organizing process. This software helps to simplify the administrative processes of organizing a conference and make administrative processes more efficient, allowing the organizers to focus on people and content.

This software provides tools which help you to:

- Create a conference web site.
- Manage on-line registration and payment.
- Provide a mechanism for reviewing abstracts and other submissions.
- Index and share the conference proceedings. (UNESCO Bangkok, 2006).

2.10 School Management

School management software is designed to improve school administration, helping both school administrators and teachers, by centrally managing information on classes, students, teachers, families, bus routes, report cards, and many other aspects of school operations.

A secure, central database, provided as part of the software, enables information to be entered and maintained by authorized office staff. Information can be entered once but accessed via many screens. This avoids redundant data entry associated with managing information via many independent documents. Information can be efficiently managed administrators and can then be made available to all staff, on demand, for shared use. (UNESCO Bangkok, 2006).

2.10.1 Educational use

Administration at a school has many levels and needs solid organization and structure to ensure effective provision education. School Management software is designed to make every day administrative tasks easier and faster. The software helps staff to take care of administration tasks simply and quickly, in ways that avoid overlap in tasks and improve efficiency. Using this software, administrative tasks can be completed on a web-based computerized system, instead of manually or on a desktop application that is not connected to a school-wide system. (UNESCO Bangkok, 2006).

2.11 Document Management

Document management software is used to track and store electronic documents and images of paper documents. This software makes it easier to perform tasks such as searching for and retrieving documents, and thereby can be used as a tool to improve workflow and efficiency.

Document management software is necessary in order to address the issue of data proliferation. Data proliferation is problematic for several reasons:

- Difficulty and time required to find and retrieve information.
- Data loss and legal liability when data is disorganized, not properly replicated, or cannot be found in a timely manner.
- As data proliferates, more manpower is required to manage data storage resources.
- Slower networks and application performance due to excess traffic as users search and search again for the material they need.
- High cost in terms of the energy resources required to operate storage hardware. (UNESCO Bangkok, 2006).

2.12 Issue Tracking

Issue tracking software (also called: trouble ticket system or incident ticket system) are used to manage and maintain lists of issues, as needed by an organization.

This software application enables an enterprise to record and follow the progress of every problem or “issue”

that a computer system user identifies until the problem is resolved. An “issue” which can be anything from a simple customer question to a detailed technical report of an error or bug, can be tracked by priority status, owner, or some other customized criteria.

This software generally provides the user with a way to report an issue, track progression towards its resolution, and know who is responsible for resolving the issue. It also allows the manager of the system to customize the tracking procedure so that unnecessary documentation on the part of the problem solvers does not become a waste of time. (UNESCO Bangkok, 2006).

2.13 Online Survey

On-line survey software enables you to build, manage and analyze a survey. Using such software you can create and publish on-line surveys in a matter of minutes.

Some survey software run on the same server as the website. Others work on a third party’s server. Some are limited by a number of surveys or questions, or answers.

Most software offers a wide spectrum of features, allowing users not only to build and publish questionnaires, but also to monitor the survey process during all its stages and analyze the results. Software users can create all forms of questionnaires including complex web surveys, multipage questionnaires, registration forms and simple polls. (UNESCO Bangkok, 2006).

3.0 Strategies for Web-based Tools and Course Design

A variety of web-based tools and course design strategies including the following, are available (Ferguson & Wijekumar 2000):

1. Syllabus course outline posting

while syllabus posting is available for both Distance Learning and non-Distance Learning courses, the absence of an instructor to review the syllabus with the learner requires an easily understandable and comprehensive syllabus.

2. Video classroom

Streaming video has replaced video tapes as the tool of choice for lecture delivery in DL courses. Video must be interesting, engaging, and worthwhile. Videos should not simply restate what is available in written materials. A primary consideration for streaming video is the bandwidth available to the learner. While high speed connections are usually available on campus, Students who rely on dial-up connections will be at a significant disadvantage when using streaming video. Provisions for downloadable or CD-Rom video files should be made to prevent this problem.

3. Course Notes

Course notes can be posted to the web to supplement video lectures and required readings.

4. Course Reference Materials, Readings, Cases

Supplemental reading materials can be posted to the web for students to download. Links to other websites are frequently provided in references.

5. Chat Rooms

Structured chat rooms conducted by the instructor provide group discussion on course activities and assignments. Using real-time chat, the instructor can ask questions during in a similar manner to the traditional classroom. Audio chat, a web-based tool that functions similar to teleconferencing, using a tool like Microsoft’s NetMeeting ® has an advantage in that it is more spontaneous than text-based chat and not dependent on the learners keyboard speed. Chat also allows the instructor to provide immediate feedback to learner questions, evaluate learner participation, and take attendance.

6. Email

Email allows students to asynchronously communicate with their instructor. Learners can ask questions and send assignments to the instructor. The instructor can use email to send evaluated assignments back to the learner

7. Bulletin Boards, Group Discussion Boards, and Digital Drop Boxes

These tools allow the learners to collaborate on projects, exchange ideas and participate in group activities.

8. Online Testing

Online testing procedures allow the instructor to design evaluation instruments comparable to any form of paper-based instrument. Multiple choice, true or false, matching, and fill-in-the-blank questions can be automatically graded and posted. Long or short answer essay questions can also be used. However, essay questions must be graded by the instructor.

9. Interactive Activities

Interactive activities provide a method of having the students practice desired behaviors. Click and drag techniques can be used to assemble components online (for example atoms into a molecule).

10. Feedback

Specific provisions must be provided to insure students receive sufficient feedback. A frequent criticism of Distance Learning is its disembodied nature restricts feedback leaving learners feeling abandoned. Instructors must be trained to promptly respond to emails. Virtual office hours can be held using chat. Computer graded exams should have provisions for giving the student correct answers to the questions answered incorrectly. Provisions for both asynchronous and synchronous feedback should be provided in course design. Asynchronous feedback occurs when the individual requesting the feedback (the student) experiences a time delay before feedback is received. Synchronous feedback occurs when the feedback response immediately follows the question or request with no time delay.

11. Virtual Classroom

An online, interactive class session between students and instructor. Simulates much of the interaction found in traditional face-to-face classrooms. Frequently incorporates other web-based tools including audio chat, video classroom, white boarding, etc.

12. White boarding

The ability to write and draw on an electronic board during a virtual classroom session.

4.0 Benefits Nigerian Education System Stands to Benefit From Web-based Distance Education

Effective utilisation of Web-based tools for the delivery of distance education portends great benefits for the Nation

-The problem of access to University education will be abated in the sense that many candidates will elect to go for part time programmes, if they are not able to access the regular programmes.

-The problem of inadequate facilities will reduce, in as much as there is alternative means of running degree programmes, number of intake into the regular programmes will be subject to the capacity of the existing infrastructure and facilities.

-Our system of education suffers dearth of text-books, but with web-tools, there is the likelihood of availability of modules and on-line text materials.

Candidates have the ample opportunity to go for courses of their choice and not courses availabilities. Performance will be enhanced and quality will improve because an individual is likely to perform better when s/he takes a course of his/her interest than an individual who takes a course as last resort.

-the 21st century is a century of Information Communication Technology (ICT). Web-based distance education programme makes computer literacy a must, as such candidate as a matter of compulsion must be computer literate.

-Access to University education is broadened because persons from poor economic background can enrol in a degree programme and at the same time engage in income generating activities.

-Web-based distance education programmes take care of the interests of marginalised group; women nursing mother(s) women in purdah, handicapped, migrant fishermen and pastoralists whose peculiar situations constitute impediment to university education.

5.0 Factors Militating Against Web-based Distance Education

-The main driver of web-based education is power supply. The poor state of power supply in Nigeria constitutes a serious impediment to web-based education.

-There is still low level of computer literacy and ICT compliance in Nigeria. Given such situation, it becomes a bit difficult to successfully operate web-based education since the main ingredient of such education is ICT compliance.

-The widespread poverty in Nigeria constitutes a militating factor against successful implementation of web-based education in the country. Majority of prospective candidates may find the programme too expensive. In addition to school fees, students must acquire computer with full accessories and all the required consumables. Given the minimum wage and its ripple effects, it may be difficult for candidates to afford the programme.

-The state of internet network service is still poor in the country. Internet network service is the engine room of web-based education and the effectiveness of web-based distance education is contingent upon the effectiveness of internet network services.

-The widespread corruption in Nigeria is hydra headed and a cog in the wheel of progress as far as policy

implementation is concerned. If prudence does not come to play, web-based distance education will not achieve the desired results.

6.0 Way Forward

- Every university running distance programme, must as a matter of compulsion, be made to run it on the web.
- A commission on web-based education should be established.
- A web-based education trust fund should be established.
- All university teachers must as a matter of compulsion be made to acquire ICT skills.
- Workshops, trainings and refresher courses on the use of web-based tools for education should be made available to all workers and students in our universities.
- Computers, laptops, ipads and other mobile devices should be made accessible to all stakeholders in education through subsidies and loan facilities.
- Broadband facilities should be readily available in our university campuses to enhance the use of web-based tools for teaching and learning.
- Communication service providers as part of their corporate social responsibilities should provide free internet services for their subscribers.
- There should be special units dedicated for support services on the use of web-based tools, and such services should be available round the clock
- Courses on application of web-based tools for teaching and learning should be mounted in faculties of education, to produce specialists that will man the units established for providing web-based support services in our institutions of learning.

7.0 Conclusion

Beautiful as the application of Web-based tools may look, it may not work well because of the attitude of Nigerian academics to Information Communication Technology (ICT) compliance. The skills of using these tools may not be easily acquired and thus may militate against their adoption. Many of our Universities may not be able to use Web-based tools despite the fact that some are even free on the web. Consequently the paper suggests that due to the complexity surrounding the use of some of the Web-based tools, it is better to adopt the principle of learning from simple to complex. Lecturers can start by giving assignments through the internet, mark them and send them back to student through the same internet channel. Students can be made to submit their questions on lecture topics through the internet and explanations on such topics can also be sent back to the students through the internet. Lectures can be delivered using multimedia projector and laptops connected to the internet, in which case internet materials can be utilised on the spot if the need arises. Subsequently, the more complex Web-based materials can then be gradually introduced

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