



WEB-BASED INFORMATION SHARING PORTAL FOR EFFECTIVE UNIVERSITY LEARNING AND ADMINISTRATION

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ABSTRACT

The ubiquitous advantage of Information and Communication Technology (ICT) has removed all barriers in terms of geographical location and time associated with service delivery in virtually all domains. Researchers have revealed the need to extend this innovation to learning in the university for the benefit of the students. This article discusses usability, effectiveness and the benefits of the proposed web-base Information Sharing Portal for usage with the University. The requirement analysis and design was carried out using component-based approach which was later developed into a prototype.

KEYWORDS: Ubiquitous, ICT, Web-based, Information Sharing Portal.

INTRODUCTION

According to Adeogun and Osifila (2008), studies revealed that unstable academic calendar caused by ASUU strikes do have negative effect on student's academic performance, due to lectures being interrupted. Some institutions responded to situations like this by compressing the calendar to accommodate for lost the periods, leading to lowering of knowledge and staff fatigue (Dede, 1996). The fortune of the educational system in Nigeria is, perhaps, at its lowest ebb. There has been a consistent denigration of the system in the last two or three decades. Graduates of the educational system are not only derided, but are also described as lacking in quality, low in perception and unfit in skills. Employers complain that school graduates are poorly prepared for work. In many cases, employers compensate for insufficient academic preparation by organizing remedial courses for new employees (Dennen & Wieland, 2007).

Empirical studies revealed that lecture halls and theatres were filled to overflowing while the Professors were strained to be heard by a class of 2000 students crammed into lecture rooms designed to accommodate less than half of that number. Some students even sit on the lecturers' tables while lecturing (Omeleke, 2011). The phenomenon of large classes is fast becoming the vogue of higher institutions in Africa, if not all over the world. The large class syndrome has been attributed to the expansion in annual student's enrolment. At any rate, education as old as man has been characterized with mass instruction and this is the peculiarity of large classes in various institutions (Centre for the Enhancement of Learning and Teaching, 2003). Students, as many as three or four hundred, often cluster in a small hall tending to pay attention to the talking and chalking lecturer who occasionally scribbles on the chalkboard, while it is mostly assumed that, as the lecturer passes the necessary information through verbal means, learning takes place. Whereas Awoniyi (1998) found out that in such a situation, much teaching goes on, but little learning takes

place with only a few of the students as a result of the gap between the lecturer, the taught and the content. In a large class, where lecture method is typically the mode of instruction, meeting the needs of the variety of students through effective communication has therefore been found to be a challenge. Though it is often thought that learning occurs in proportion to class size, that is, the smaller the size the more the students learn, however, the size of a class may not absolutely be a predictor of students learning and quality of teaching (Felder, 1997). In essence, there is the need to be conscious of the fact that the key to effective instruction and students learning is effective communication (Agbatogun, 2007).

Communication is a vital key to effective teaching and learning, thus the ability of a teacher to effectively convey a concept to the students so as to understand and synthesis what the teacher is presenting is of paramount importance. Learning in itself is the resultant effect of effective communication between the teacher and the learner (Dabalena, 2000). In his own words, Sleeman (1976) said that effective communication in the classroom exists when there is a good interaction between the learner, the information and the instructor. If the interactive nature must be achieved in a large class, the traditional syndrome of a lecturer talking to a sea of heads seeming to attend his lecture, while many of them engage in other activities other than those related to what is going on in the class, is a problem that must be attended to. It could be felt that, one of the primary purposes of effective communication in the classroom is to spark, and guide active mental processing, develop competencies, gain attention and catch the interest of the students when they have access to information and make meanings from such information (Agbatogun, 2007). Awoniyi (1998) advocated that, for the quality of education to be improved, technology must be employed. Riesland (2005) was of the opinion that communication; even in the classroom has been positively influenced through the use of appropriate instructional media, at least for the purpose

of ensuring that all students benefit from the teaching and learning process. The effects of all this on student academic performance can be greatly reduced through the use of e-learning. E-learning is the use of technology to enable people to learn anytime and anywhere (Crook, 1994; e-Learning Consulting, 2011). Tavangarian, Leybold, Nolting and Roser (2004), said that the information and communication systems, whether network learning or not, serve as specific media to implement the learning process. E-learning is such a flexible tool as it has the advantage of providing class materials all year round and can be accessed from anywhere in the world

The emergence of the 'knowledge-based' society is changing the global economy and the status of education (Unesco, 1998). A cursory survey of library education in Nigeria reveals a catalogue of problems and gaps. These include a towering infrastructural inadequacy, seemingly insurmountable problems of human and financial resources, lack of access to necessary information and resources for learning, and poor communication among key players in the library schools in Nigeria. In this era of shortages of qualified teachers in universities, availability of Internet access for teachers and students would provide complementary information for their studies (Ukoha, 2005).

ICT AND E-LEARNING

Information and communications technology is a powerful tool that would link Nigerian library schools with library schools in the west and facilitate the ongoing revitalization of the educational process. We need to provide people with information and knowledge, especially in rural areas. One thing we are looking at is the development of telecenters, where people can discuss and share ideas (Ukoha, 2005).

Advances in information and communication technologies (ICT) facilitate advancement and improvement in education (Hawkins, 1998). ICTs enhance the quality of teaching and learning, the sharing of knowledge and information. They have the potential, according to Haddad and Draxler (2002), to contribute to effective learning through expanding access, promoting efficiency, improving the quality of learning, enhancing the quality of teaching, and improving management systems. ICTs also offer possibilities for lifelong learning. The introduction of ICT into universities clearly changes the way education is conducted. Not only is it possible to work with distance learning and achieve a closer collaboration between different universities, ICT is also paving the way for a new pedagogical approach where students are expected to play a more active role than before. Using ICT as a tool in education students should be able to communicate, create presentations in PowerPoint, and interact with colleagues and teachers using technology. For countries to benefit from technological developments, a cadre of professionals has to be educated with sound ICT backgrounds, with various computer platforms and software environments (Ukoha, 2005). As a result of the aforementioned challenges to learning, effective communication calls for a more robust tool. E-learning has gained immense popularity in recent

times. Debunking traditional notions of how teaching and learning have been taking place in educational ecology, e-learning has bridged the constraints of time and geographical distance that characterized the traditional learning system and it has diffused into a flexible yet dynamic mode of study for populations of learners, taking into account their varied learning styles and needs. E-learning is now widely hailed and synonymously associated with a more effective and efficient learning outcomes (Onasanya, OLUMORIN, Asuquo & Ogunojemite, 2007).

In a survey of the role of the Internet on education, innovation, and global living standards carried out by Princeton Survey Research Associates (PSRA) (2001), 74% of the subjects studied believe that educating students via a virtual classroom will provide more students with greater opportunities to learn, 87% say that the Internet will have a positive effect on improving education, 69% say that the Internet will play a sizeable role in improving educational systems so that children and adults can get the best education regardless of their economic background or geographic location, and 93% say that the Internet will be valuable in providing students with greater access to libraries, information, and teachers around the world. Overall, the research findings of PSRA affirm that universal access to the Internet would bring about enormous benefits and improvements to the educational system because of the Internet's unparalleled ability to spread knowledge and disseminate information (Ukoha, 2005).

METHODOLOGY

Design

The incremental process model is a popular software model used by many commercial companies and software vendors. The series of releases is called increments, with each increment providing more functionality to customers. Early increments are "stripped down" versions of the final product, but they do provide capability that serves the user and also provides a platform for evaluation by the user. The incremental process model is used because all the modules required for an educational collaboration portal could not be included now and provides the platform for adding them later if the project subsequently improved on.

Requirement Analysis

The requirement of the proposed web-based Information Sharing Portal is specified using object-oriented system analysis approach with entity relationship diagram and class diagram as described in Figures 1 and 2 respectively. Entity-Relation is a type of static structure diagram that describes the structure of a system by showing the system's entities (omponents), their attributes and the relationships between the components.

The web-collaborative design relies on a MySQL database system for storing data. The database and all tables are designed to allow fetching information by the PHP scripting language easy and less stressful. The central database named "toolset" uses eleven (11) tables represented in fig 1.

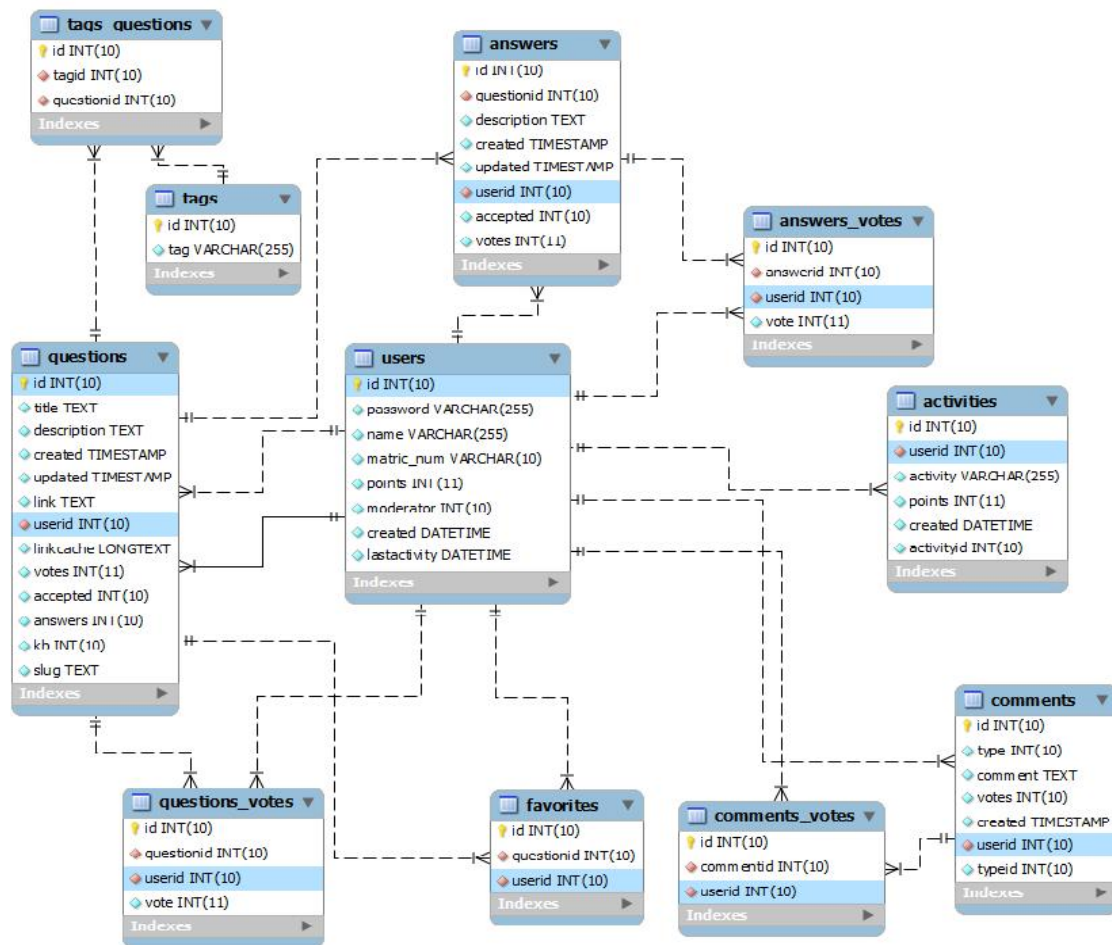


Figure 1: Structure of the “toolset” tables

Use Case diagram

A use case diagram provides a graphical overview of the functionality of a system. It shows who is using the system and what they can do with it. A use case diagram does not

show details of the use case themselves, but instead provides a summary of use case, actors and systems. The use case diagram is shown in Figure 2.

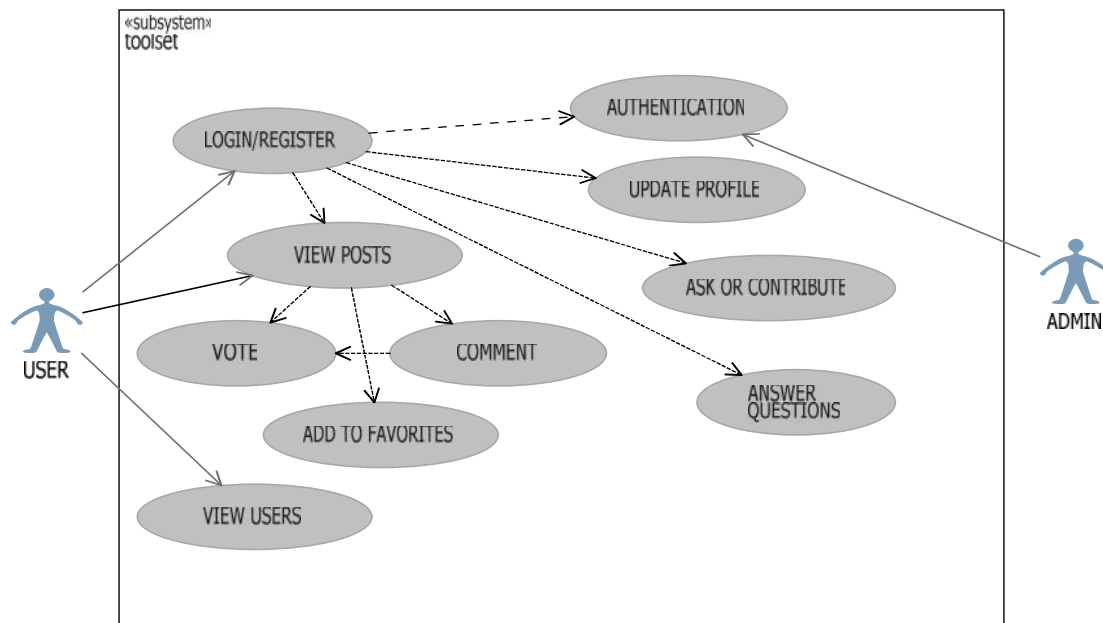


Fig 2: toolset use case diagram

CONCLUSION

In this paper, we presented the usability, effectiveness and benefits of web-based Information Sharing Portal in the University. The challenges facing educational system most especially in Nigeria were also discussed. This design and implementation of a web-based information sharing portal in the university community will change and improve the way students learn and get access to information, giving the means of communicating with friends and providing a flexible learning platform and the administration of the University.

RECOMMENDATIONS

The field of computer-supported collaborative learning is still in its early stages, and the proposed system developed can be improved by adding chat sessions, video conferencing and, upload and download of course contents. The project can also be aimed at covering a wider audience.

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APPENDIX CODE LISTING

HEADER

```
<html><meta http-equiv="Content-Type" content="text/html; charset=UTF-8"/>
<head><title>toolset</title>
<link type="text/css" rel="stylesheet" href="<?php
echo basePathNS();?>/css/main.css">
<link type="text/css" rel="stylesheet" href="<?php echo basePathNS();?>/css/tagscomplete.css">
<script src="<?php echo basePathNS();?>/js/jquery.js"></script>
<script src="<?php echo basePathNS();?>/js/tagscomplete.js"></script>
<script src="<?php echo basePathNS();?>/js/fancybox.js"></script>
<script type="text/javascript" src="<?php echo basePathNS();?>/js/prettify/prettify.js"></script>
<link href="<?php echo basePathNS();?>/css/prettify.css" type="text/css" rel="stylesheet" />
<?php if(!empty($js)):?><?php echo $js;?><?php endif;?>
</head>
<body onload="prettyPrint()">
<div id="navigation"><div class="navcenter">
<form action="<?php echo basePath();?>/questions" method="get" style="float:left;width:420px;text-align:left;"><input
type="text" name="search" style="color: #999" value="<?php if(!empty($searchstring)):?><?php echo
$searchstring;?><?php endif?>"></form>
<div style="float:right;border-left: 1px solid #13a1c9;border-right: 1px solid #45c9e9;"><ol><li><a href="<?php
echo basePath();?>">Home</a></li><li><a href="<?php echo
basePath();?>/questions">Questions</a></li><li><a href="<?php echo basePath();?>/tags">Tags</a></li><li><a
href="<?php echo basePath();?>/users">Users</a></li><li><a href="<?php echo
basePath();?>/questions?type=unanswered">Unanswered</a></li><li><a href="<?php echo
basePath();?>/questions/ask">Ask or Contribute</a></li></ol></div>
</div>
<div style="clear:both"></div>
</div>
<div id="container">
<div id="leftpanel">
</div>
<div id="rightpanel">
<div style="text-align:right;"><a href="<?php echo basePath();?>/" style="border-bottom:0px;"></a></div>
<div style="clear:both"></div>
<?php if(!empty($_SESSION['userid'])):?>
<div class="userlogin">
<div style="float:left"></div><div
```

```
style="float:left;padding-left:10px;"><h3 style="padding-left:0px"><?php echo $_SESSION['name'];?> | <?php echo
$_SESSION['points'];?></h3>
<a href="<?php echo basePath();?>/users/edit">Edit Profile</a><br/>
<a href="<?php echo basePath();?>/users/logout">Logout</a></div>
<div style="clear:both"></div>
</div>
<?php else:?>
<?php if (empty($loginpage)):?>
<div class="userlogin">
<form action="<?php echo generateLink("users","validate");?>" method="post">
<h3>Matric Num</h3>
<input type="text" class="text" name="email" style="width:215px;"/>
<h3>Password</h3>
<input type="password" class="text" name="password" style="width:215px;"/>
<input type="hidden" name="returnurl" value="<?php echo getLink();?>">
<div style="padding-top:10px"><input type="submit" value="Login" class="button"> or <i><a href="<?php echo
basePath();?>/users/register">click here to register</a></i>
</form>
</div>
<?php endif;?>
<?php endif;?>
</div>
<div style="clear:both"></div>
</div>
<div style="clear:both">&nbsp;</div><div class="footer">
<!-- Copyright Notice Do Not Remove -->
Project devolped by: Ishola Aramide, 08/52ha090.
<p>Supervised by: Dr R.G Jimoh</p>
</div>
</body>
</html>
```