

# AN ONLINE SYSTEM FOR ENTREPRENEURIAL SKILLS ACQUISITION IN TERTIARY INSTITUTION

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## *Abstract*

One of the major focuses of the Transformation Agenda of the present day government in Nigeria is the skill acquisition programme for the youth. The programme is designed to check youthful exuberance, minimize unemployment rate, curb insecurity and reduce poverty across the nation. In pursuance of these goals the National Board for Technical Education (NBTE) an organ of the Federal Government mandated all tertiary institutions in the country to establish an entrepreneurial and vocational Centre in their schools to prepare graduates and diplomates of tertiary institutions to be employable, self-employable, create jobs for others and earn a living for themselves. Studies have shown that there are a number of problems militating against these entrepreneurship Centres preventing them to function properly; these include poor management of records, shortage of staff, inadequate facility, and poor financing to mention just a few. An on-line system for entrepreneurship skill acquisition programme is proposed. The system was developed using incremental model development process. The front-end was designed using macromedia DreamWeaver 8.0, Macromedia Flash as the editor. The system logic and work flow was developed using Server Side Scripting Language (PHP) on Apache Tomcat Server while MS SQL 5.0 was used as the backend.

**Keywords:** Transformation Agenda, Skill Acquisition, Entrepreneurship Centre, and Unemployment

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## 1. INTRODUCTION

In order to curb unemployment, create wealth and for economy development the Federal Government in 2006 decided that 'Entrepreneurship Education be incorporated in all Programmes offered in Nigerian tertiary institutions of learning as a mandatory courses, irrespective of programmes of studies'. The noble idea is to ensure that graduates of those institutions would no longer be job seekers but job and wealth creators. According to Wikipedia Entrepreneurial education is a form of learning which is seen as the process by which people acquire new skills or knowledge for the purpose of enhancing their performance. Be it practical or virtual, it remains a process of getting and assimilating new experience for future achievements. This type of education engender graduates to adopt

school based-knowledge, skills, attitudes, and competencies to work which often depends on how adequately exposed they are to real-life business and office environment while they were in school.

The importance of enforcement of its objectives to the latter cannot be overemphasized. National Board for Technical Education (NBTE) as a watchdog is one of the agencies of government saddled with the responsibility of enforcing this policy. In line with this, the NBTE mandated the establishment of Entrepreneurship Development Centre in each polytechnic and monotechnic across the nation. The specific objectives of the Centres are to:

- Create, promote, and deliver entrepreneurial awareness and opportunities.
- Impart entrepreneurial skills in the students, staff and members of the public
- Improve the practices and competencies of existing entrepreneurs.
- Provide market linkages.

Polytechnic system seemed to be more proactive in this regard. Abdu Kofarmata, Desk Officer in charge of Entrepreneurship Programme and Education, National Board of Technical Education (NBTE) said the polytechnic system is the only sector in the education system that has developed the training document for entrepreneurship which includes the curriculum, teachers guide and training manual (The Nation April 18, 2013). Needless to say is that there are various problems confronting this Centre in these institutions. Chief among these are shortage of manpower to man the Centre, lack of proper record management, and inadequate infrastructure to mention but a few. Therefore, there is the need to develop a dynamic and vibrant system that requires little or fewer physical interactions, that keeps track of the record of students, and monitors their progress throughout the training programme; hence, an online entrepreneurship system is proposed. The organization of this paper is as follows: Section 1 gives a general introduction about the paper. Section 2 describes existing entrepreneurship systems. Section 3 discusses the proposed system and section 4 highlights future work while section 5 concludes the paper.

## 2. EXISTING ENTREPRENEURSHIP SYSTEM

The existing system still uses paper and biro for record keeping and relies on face-to-face contact for training scheduling and delivery. This system is limited in many ways. Entrepreneurial education emphasizes the acquisition of certain skills which centre around

the concept of innovation and creative process, financing, control, opportunity identification, venture, evaluation and deal making (Jimah et al, 2011).

According to Akhuemonkhan et al (2013) Nigeria adopted entrepreneurship education to accelerate economic growth and development. This form of education is in sharp contrast with the age-long formal education inherited from the imperialist which turned out graduates with job-seeking mindsets as opposed to jobcreation; they thus lack entrepreneurial traits like self-motivation, drive and innovation needed by the world of work and employers of labour (Towobola and Raimi, 2011; Raimi et al., 2011; Simkovic, 2012). It is apt to mention however that, despite the increase in number of tertiary institutions running entrepreneurship programmes, (Kuratko, 2003, Okwanaso, 2000) that many graduates who go to work through entrepreneurial route fail because of their knowledge of what it takes to manage a business efficiently. This is not unconnected with the manner for which this education was being imparted. The huge amount of money currently being voted in the President Goodluck Jonathan's Economic Transformation Agenda including the Vision 20:2020 presently under implementation (Raimi et al, 2011) should be put into good use. The existing systems can be divided into two broad categories. These are discussed briefly in the following sections.

## **2.1 Traditional Entrepreneurship Centre**

This entails all forms of physical contact between the students and the Centre without the use of more sophisticated forms of communication, like the Internet. The main activities through this method include to:

- i. Co-ordinate and teach the theoretical perspective on entrepreneurship
- ii. Co- ordinate practical demonstrations in selected entrepreneurial fields
- iii. Undertake community impact and capacity building initiatives through short term training programmes based on market research or client demand.
- iv. Organize annual student/staff seminar/workshop on entrepreneurship.
- v. Organize annual student's business plan competition

These activities are carried out through three areas of functions. These are:

### **2.1.1 Vocational Skill Development**

This involves training of students in specific areas of skill acquisition programme such as in soap, paint, cake making, and host of others etc

### **2.1.2 Production**

Production ensures that there is practical demonstration of what students have been taught during training with which they are coordinated to bring out products from such venture. This is complemented by packaging of such products for public consumption.

### **2.1.3 Marketing/Advertisement of Products**

Products are marketed and advertised through seminars and exhibitions where students learnt rudiments of products marketing.

## **2.2 Electronic/Online Entrepreneurship System**

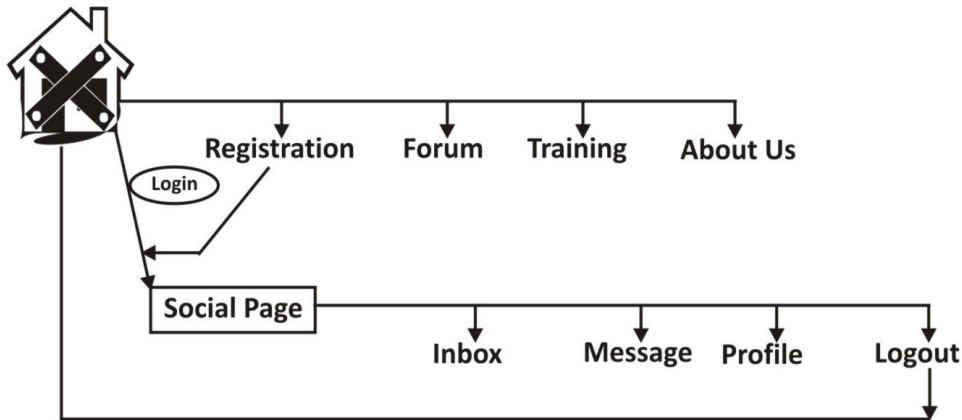
The advent of Information and Communication Technology (ICT), and particularly the Internet has created new ways by which many tasks can be accomplished. These tasks are simplified through the current means of communication between a tertiary institution and its students via the institution's website. Some of the services being rendered by some Nigerian schools on their websites are: Student and Course registration, Online Payment, Social Interactions, Frequently Asked Questions (FAQs), Electronic Mail, and Electronic bulletin boards or notices.

## **2.3 Limitations of Traditional Entrepreneurship Centre and Online Entrepreneurship Systems**

At its very best, e-entrepreneurship centre offers a student an efficient 24-hour-a-day service. It also offers the school a cost-effective means of providing an efficient record management. Another advantage that an online system has over the Traditional system is that issues of inadequate facility are avoided, since access to the website is open to a large number of people at once. However, electronic systems do not give students the privilege of close interaction with their lecturers which may yield desire results. Lastly, the online systems do not take into consideration the student's opinion, time or reaction about the training he/she is to receive.

### 3. PROPOSED ONLINE ENTREPRENEURSHIP SYSTEM

The proposed general architecture of the online entrepreneurship centre is as shown in Figure 1. The front end was designed using Macromedia DreamWeaver 8.0, Macromedia Flash, and PHP – server side language. The system logic and the work flow used Microsoft Apache Tomcat Server. MySQL 5.0 was used as the back end.



**Fig. 1 A General Layout of the Website Navigation Structure (Adapted from Spiller et al, 1998).**

#### 3.1 System Design

The program is modular in nature which helps in fast development, maintenance and future change if required. The system design is considered under three sections namely: the front end, the system logic and the back end. These are as discussed in the following sections.

##### 3.1.1 The Front End/Client Component

This presented the interface to interact with the application. This client component resides with the student who wishes to browse through the institution's webpage by registering for the EED course as domesticated in the school. The interface is user friendly since the students will be interacting with familiar components such as: Checkboxes, Radio Buttons, Buttons and Password fields and Text fields. The functionalities of the system include:

- ✓ Registration of students and assigning usernames and passwords.
- ✓ *Social page*: This allows online interaction between a student and an administrator for real-time assistance via instant messaging.

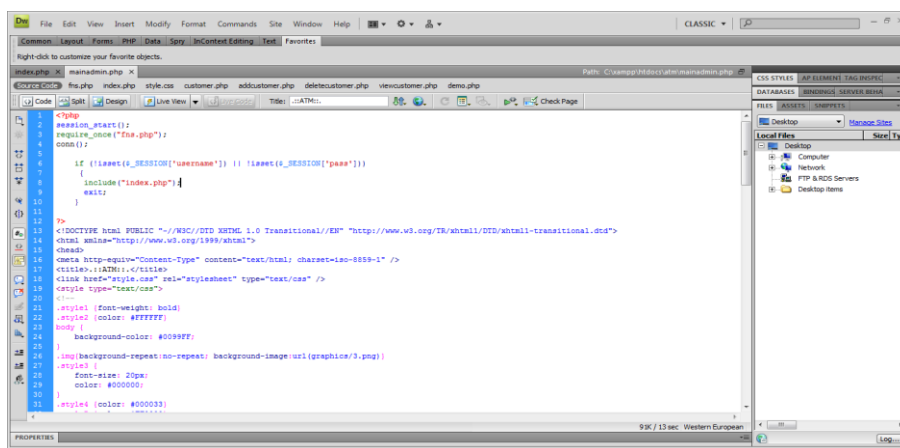
- ✓ Online Self Help: This is a service that provides technical help and support for customers. It navigates the customers through different service options available in the website.

### 3.1.2 The System Logic

The system logic considered the details and flow of the design of the Online Entrepreneurship Centre that will be hosted on the school Portal. Student Registration was the first step to gaining access to other privileges available on the web portal. For every service available, a registered student would need to key in his username and password created during registration in order to gain access to his account. However, an unregistered student could only be allowed to use the social subsystem to communicate directly with the system. This will not include gaining access to the group, class allotted for the course and the type of training the student supposed to pass through. It will just be an enquiry with the hope of having familiarity with the system.

### Social Subsystem

Student interactions with the system administrator via instant messaging were achieved using Servlets. The message server is implemented as a single class with a single instantiation because it has a large amount of associated state and a fair amount of code that would otherwise have to be repeated. Implementing the message server as a servlet provides a simple way for one object to make it available via Hyper Text Transfer Protocol (HTTP) communication technique. By being an HTTP servlet, it has built-in HTTP support. HTTP message clients post their messages to the server using the HTTP POST method. A sample Snippet of code written with is shown in Figure 2 below.



```
1 <?php
2 session_start();
3 require_once("fsa.php");
4 ob_start();
5
6 if (!isset($_SESSION["username"]) || !isset($_SESSION["pass"]))
7 {
8     include("index.php");
9 }
10 else
11 {
12 }
13
14
15 <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN" "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
16 <html xmlns="http://www.w3.org/1999/xhtml">
17 <head>
18 <meta http-equiv="Content-Type" content="text/html; charset=iso-8859-1" />
19 <title></title>
20 <link href="style.css" rel="stylesheet" type="text/css" />
21 <style type="text/css">
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Snippet of code written with PHP

PHP 5 is a widely-used general purpose scripting language that is highly suitable for web development and is compatible with XHTML for the application's interface development. The developers choose PHP because of its open source nature since this project is a simulation of the real life application, it requires minimal cost compared to its counterparts like ASP.NET etc.

### **Online Self Help**

This is designed as a dynamic frequently Asked Questions (FAQ), that produces solutions based on the identified problems students encountered while using the system.

#### **3.1.3 The Back End**

In order to ensure data persistence, MySQL was used as to manage and store all the information handled by the application. The system had 4 relational tables that stored Student Registration Information, User names and Passwords, Schedules and Groups, Training Type, and Student Department. Data redundancy was reduced to the barest minimal level by first subjecting the entities into normalization through closure because these data are essential for the application and need to be called up at any time even after the application has been closed and reopened.

### **3.2 System Implementation**

The application was developed on a Microsoft's Windows 7 operating system environment. After the coding process, the application file was copied into the www directory of the Apache server so that various pages of the application are tested. This web application is targeted at all personal computers. The server side application was developed using PHP and this could be deployed on any web server, while providing the appropriate driver for the database-application connectivity. For this application to run on any system, the following requirements must be met.

**Hardware Requirements:** Minimum of 20GB Hard drive, Minimum of Pentium IV, Minimum of 256MB RAM.

**Software Requirements:** Web Servers, Database Server, Java Runtime Environment

In order to deploy the application, Macromedia Dream weaver was chosen as the editor for this work because of its full support for intelligence, XHTML compatibility and the ability for user to view code and interface design in situation where by interface is required. The final component the developers need to develop and test pages on local computer is

MySQL. So it was downloaded on MySQL Installer: from MySQL website at <http://dev.mysql.com/downloads/> under MySQL Community Server. The interfaces of the system are as shown in Figures 3, 4, 5, 6, 7, 8, and 9.

## HOMEPAGE



Figure 3: Home

## REGISTRATION PAGE

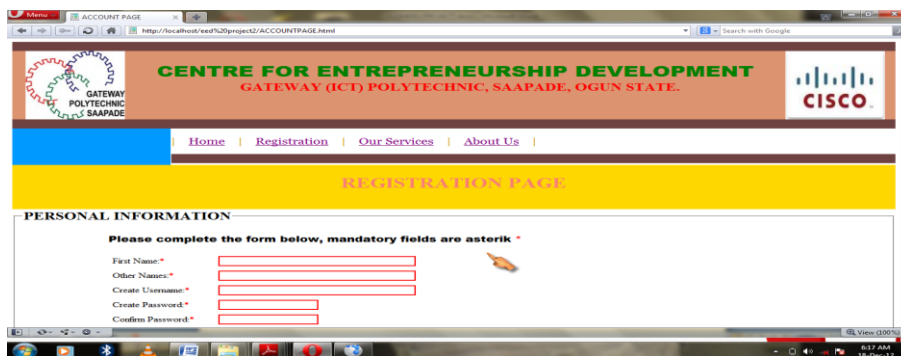


Figure 4: Registration

## USER ACCOUNT PAGE

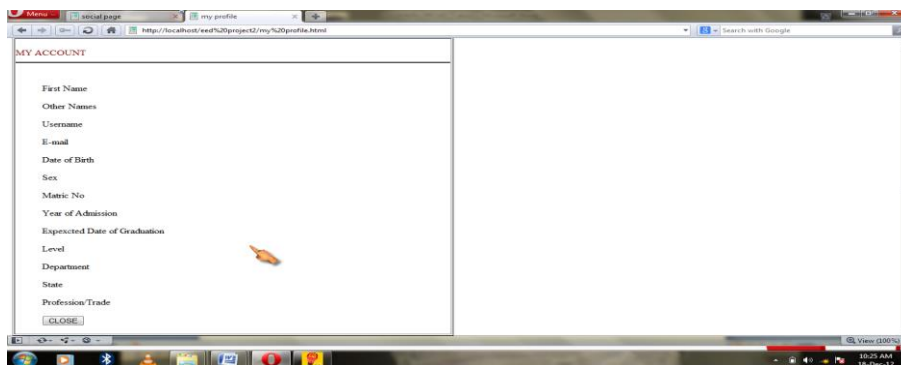


Figure 5: User Account



## OUR SERVICES



Figure 6: Centre Services

## SOCIAL PAGE

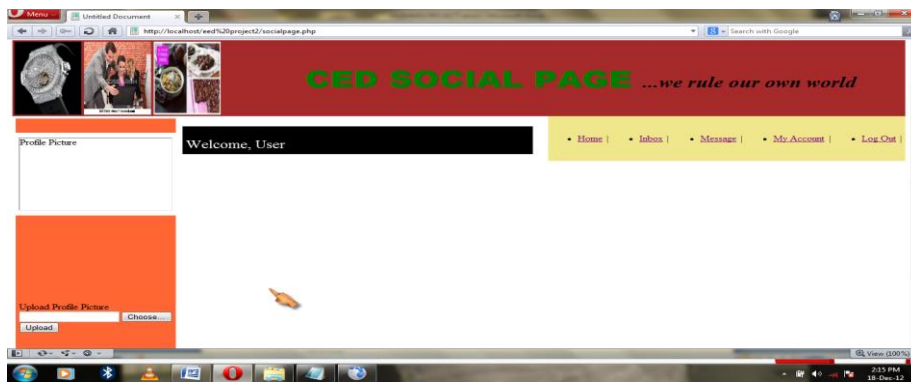


Figure 7: Social Interactions

## CREATE MESSAGE

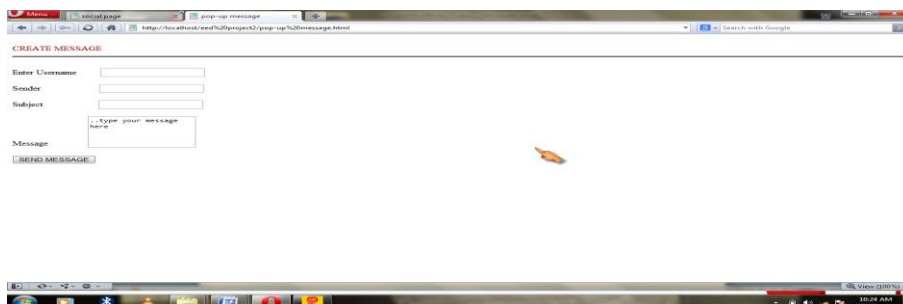
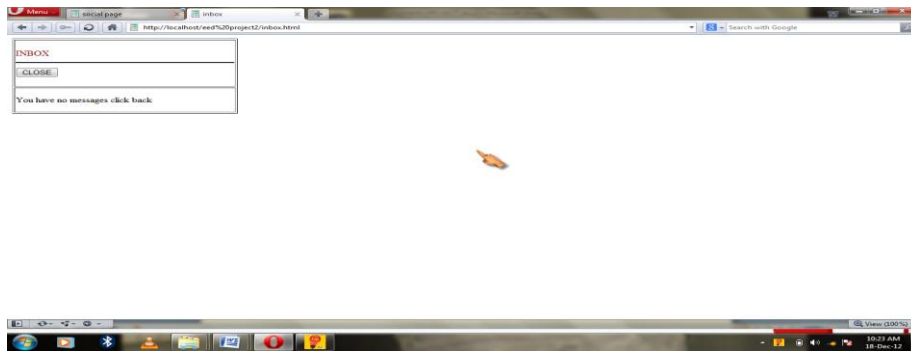


Figure 8: SMS Service

## MESSAGE INBOX



**Figure 9: The Inbox**

### 4. FUTURE WORK

For the future research work, a full-fledge website would be constructed for Entrepreneurship Centre using semantic web design method which will host all the entrepreneurial training programme manuals together with their simple step-by-step guidelines for ease of use, which reduce the physical contact of students with the Centre and for effective skill acquisition by the students.

### 5. CONCLUSION

This work set out to develop a dynamic online system for entrepreneurial skills acquisition in tertiary institutions. The study indicates that entrepreneurial characteristics of youth are diverse and their exposure to entrepreneurship education for a period time is capable of provoking the intention of becoming entrepreneurs. For the goal of entrepreneurship education to be actualized it is important that institutions should device a strategy and method through which the students that shown serious intention to start enterprise while in school and after graduation will be assisted. The design and implementation of the system was successful. Users of the portal can benefit from it, if fully implemented and customized to meet the institution's needs in providing skill acquisition through entrepreneurial training.

The strength of this system lies in the availability of a wide range of services options with which the students can choose from while interacting with the system. The components of this system aside Student Registration are: Frequently Asked Questions Page, Social Interaction with instant messages (SMS), Online Self Help, and Schedule and Class Download.

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