



# **Development And Implementation Of Web-Based Virtual Classroom System**

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## **ABSTRACT**

In the last few decades, education has witnessed some advances in technologies involving computer aided learning that promises to drastically change the methods of teaching and learning. The World Wide Web has played a major role in information storage and dissemination in the educational community. Conventional classroom based teaching involves the delivery of course materials by the lecturer in a particular place at a defined time. Hence it imposes a constraint of time and place on both the instructor and the student. Due to human factor arising from the traditional classroom method, the lecturer may not always be able to put in optimum effort towards preparing and delivering course materials. There may also be inconsistencies in the pedagogy and learning style due to repetitive nature of teaching/learning. The objective of this paper is to develop a virtual classroom system to enhance learning on campus. The system was developed using PHP and MySQL as server side programming and database respectively.

**Keywords:** Design, Execution, Virtual, Classroom

## **INTRODUCTION**

Education is the best way of preserving and passing norms, culture and values from one generation to another. In any society, it remains the best method of passing the various technological developments and breakthroughs from generation to generation (Akinyokun and Iwasokun, 2014). Education is a way of training an individual the “dos” and “don’t” of an organization and instilling good moral and judgement into the life of the society. In totality, education is the means through which the old knowledge and innovations are passed to present generation and the present can invariably hands it over to the incoming one and each generation can include their finding and contributions toward the wellbeing of their society (Akinyokun and Iwasokun, 2014). In the world at large, formal education corresponds to a systematic, organized education model, structured and administered according to a given set of laws and norms, presenting a rather rigid curriculum as regards objectives, content and methodology.

Consequently, formal education involves building classrooms where students and teachers interact. This implied directly that only those who could be in the classroom and follow the teachers rigidly with the pace by which they present their lectures are the privileged one who will be educated (Obasa, 2010). Due to the rapid increase in the world population, a lot of problems have emanated which include; inadequate number of human and material resources to cater for the education of the large population, the population of school age citizen in most places has grown tremendously to the extent that only a small percentage can be offered admission, the student to lecturer and student to classroom ratios have grown to the extent that teaching and learning in the classroom have been less effective (Akintola and Akinyokun 2011).

Education as a field have provides most fascinating application of computing system, which has leads to various attention from educationists and policy makers since the late 1960s when computers were first introduced into classrooms. Various information technologies have been applied in learning and teaching,

such as Computer Aided Instruction (CAI), Computer Aided Learning (CAL), Research Packages, Project Monitoring, Computerized Libraries and so on. As a result of advancement in technology, computer networks and the Internet, computers are now being applied in distance learning premised on on-line and real time teaching and instruction (Akinyokun, 2003). Conventional classroom based teaching involves the delivery of course lectures by the lecturer in a particular place at a specific time. Hence it imposes a constraint of time and place on both the instructor and the student. Due to some factors, the lecturer may not always be able to put the optimum effort towards delivering effective and comprehensive course models (Ibam, 2012). Direct interaction with the student is not easy because of the large number of students that needs attention concurrently. The remedy to this situation seems to be the learning techniques that are based on modern technologies such as the Internet and WWW combined with traditional classroom teaching. One of the ways this can be achieved is through the use of virtual classrooms. A virtual classroom is an environment conducive for learning, which takes place in the cyberspace. It provides the tools that learners need and brings together educators and learners to share information and ideas. The virtual classroom is a special form of e-learning that finds relevant applications in enriching the conventional learning methods and can be deployed using a wide range of technologies and media. The virtual classroom has its roots in the study of computers in education such as computer-mediated instruction and multimedia as an instructional tool.

For the lecturers and students, a benefit of the Internet as platform for virtual classroom is that it enables them to stored unlimited information on the platform. The advantages of Virtual Classroom (VCR) includes; access to high quality and flexible learning technologies and the information being electronically stored can be accessed or downloaded by learners at their own pace, thereby overriding the constraint of time and place experienced in classroom based learning (Kimberly *et al.*, 2004). The involvement of the distance learning includes teaching using telecommunication tools, which transmit and receive numerous materials through data, voice, and video (Kimberly *et al.*, 2004).

The aim of this work is to design and implement web based virtual system which will override the limitation of time and place experienced in classroom based on learning and also design an alert system that will alert the lecturers when students send an information.

### **Description Of The Existing System**

Teaching and Learning is an activity that takes place in school classroom, where the teacher impact knowledge to the student through explanation of the curricular contents of the subject matter. The traditional method of learning involves a teacher and the students. The teacher gives study notes or guide to the students and guide them through reading and understanding of the notes. Learning is often accompanied by classroom assignments, test and examination.

### **The Problem Identified In The Existing System**

Problems identify in the existing system are:

1. Inadequate time schedule for lectures.
2. Chances of lecture clashing.
3. Inadequacy of teaching and learning materials

### **The Proposed System**

Online virtual classroom system is concerned with the creation of a platform that will give room for in-depth discussion between students and lecturer on a particular course and also incorporating learning technologies such as small group and whole-class forum and live chats that can foster students interaction and ingenuity .

**Use Case Diagram**

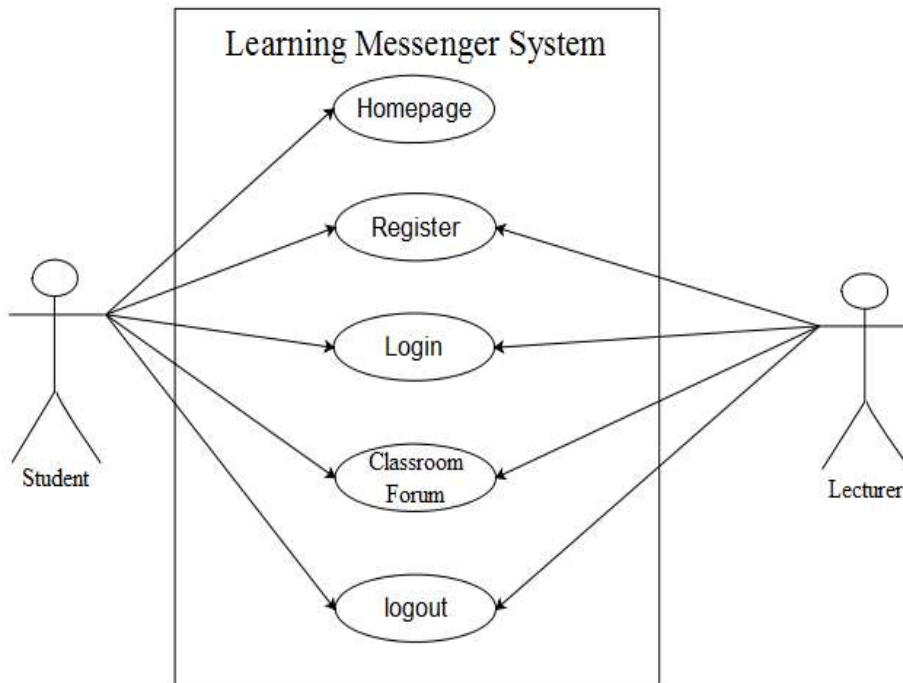


Fig 1: Use Case Diagram- Showing the description of Online Virtual Classroom System.

**Data Flow Diagram Of The Proposed System**

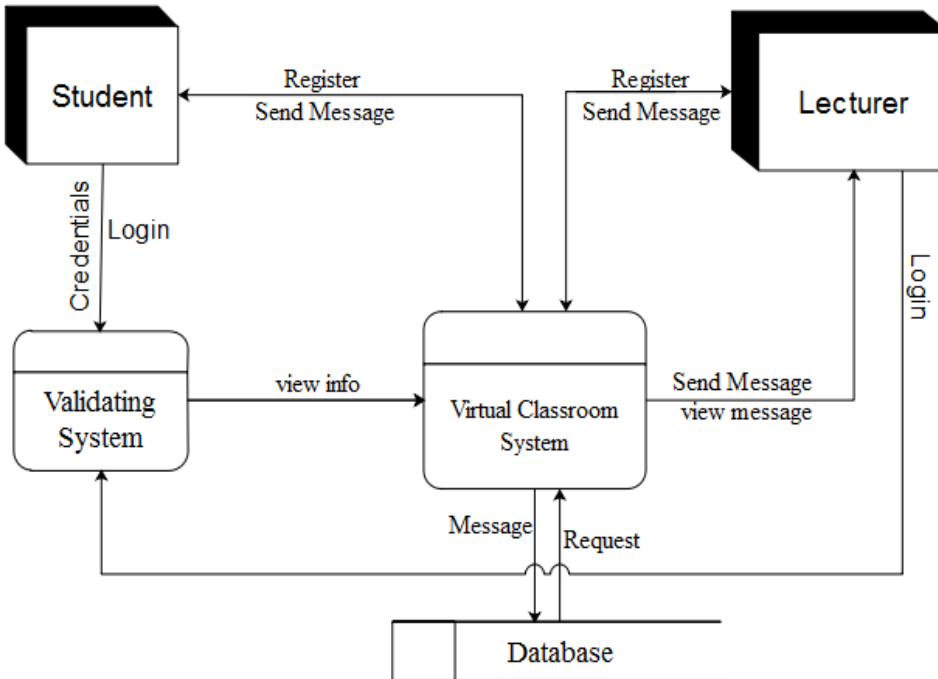


Fig 2: **Diagram Flow Diagram-** Showing the description of Online Virtual Classroom System.

**The Strength of the Proposed System**

The functions of the system are listed below:

1. To develop a system with the idea that student and teacher co-develop the dialogue of a class.
2. Access to a forum where many users can exchange ideas on different issues relating to a given topic at the same time.
3. This system will help live- time discussion in a very efficient way

**System Design**

The system was designed with the following specification:

**Table: 1a: USER**

FIELD NAME	DATA TYPE	LENGTH	DESCRIPTION
UserID	Auto Increment	10	Primary key
Username	Varchar	20	
Password	Varchar	20	
Lastname	Varchar	20	
Firstname	Varchar	20	

**Table: 2b: lecturer**

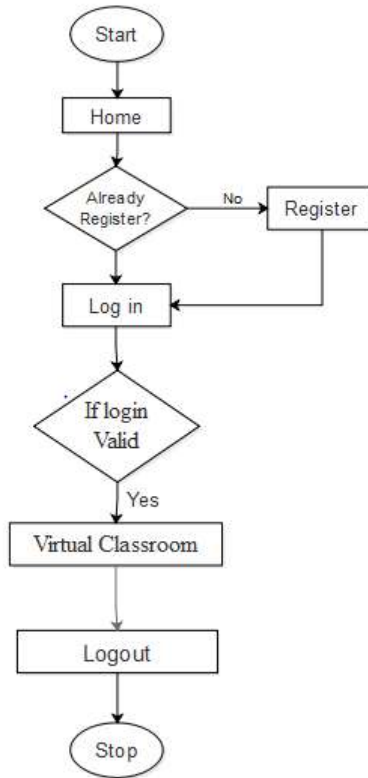
<b>FIELD NAME</b>	<b>DATA TYPE</b>	<b>LENGTH</b>	<b>DESCRIPTION</b>
UserID	Auto Increment	10	Primary key
Username	Varchar	20	
Password	Varchar	20	
Lastname	Varchar	20	
Firstname	Varchar	20	

**Table: 1c: colourtb**

<b>FIELD NAME</b>	<b>DATA TYPE</b>	<b>LENGTH</b>	<b>DESCRIPTION</b>
ColourID	Auto Increment	20	Primary key
Username	Varchar	20	
Colourbg	Varchar	20	
Colourtxt	Varchar	20	

**Table: 2: chattb**

<b>FIELD NAME</b>	<b>DATA TYPE</b>	<b>LENGTH</b>	<b>DESCRIPTION</b>
ChatID	Auto Increment	20	Primary key
UserID	Int	20	
Chatbody	text	225	
Chatdate	Varchar	10	

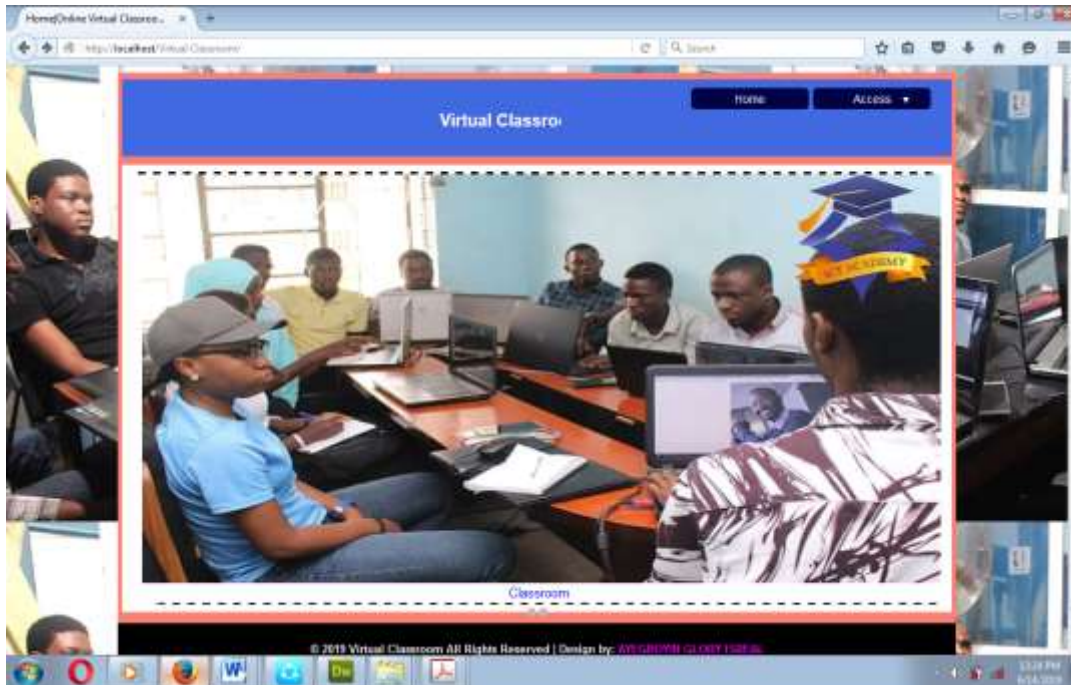


**Fig 3: Flowchart Of The Propose System**

**System Implementation and Evaluation  
Running and Loading**

The installation and implementation of the software have the requirement of software and hardware in which the system would be implemented. The system as too be installed by the following processes

- Power on the system and let it boot.
- Install WARM server on the system by Compaq disk or through flash drive
- Open the PHP folder “Virtual classroom”
- Copy the folder in to the warm/www/ Virtual classroom”
- Open the MYSQL folder “Virtual classroom”
- Copy the folder to c:\wap\bin MySQL 5.0.51b data\ Virtual classroom
- Open the warm server to start the server
- Open a web browser and type this url http://localhost
- Then open another tab of your favorite website and type this url http://localhost/virtual classroom/
- Wait for the system to load the index page.



**Figure 1** Virtual Classroom Index Page

This module allows the user to login if already registered or go to sign up page if not member to register



**Figure 2:** Virtual Classroom Sign up Page

This module creates an interface to accept the user data and save in the database after clicking on sign up button.

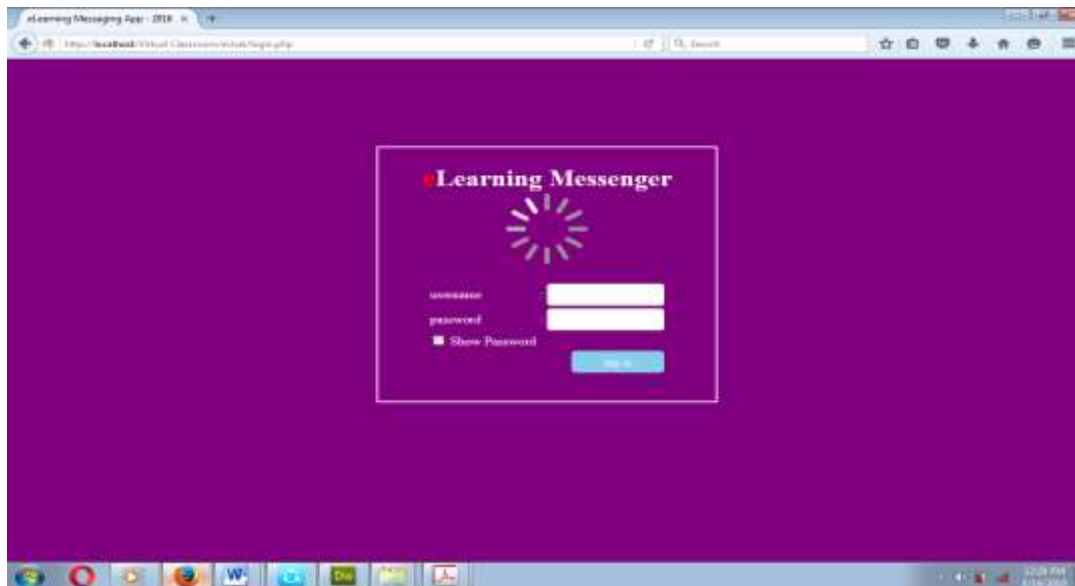


Figure 3: Virtual Classroom Login Page

This module creates an interface to login the user and direct the user to e-learning forum.

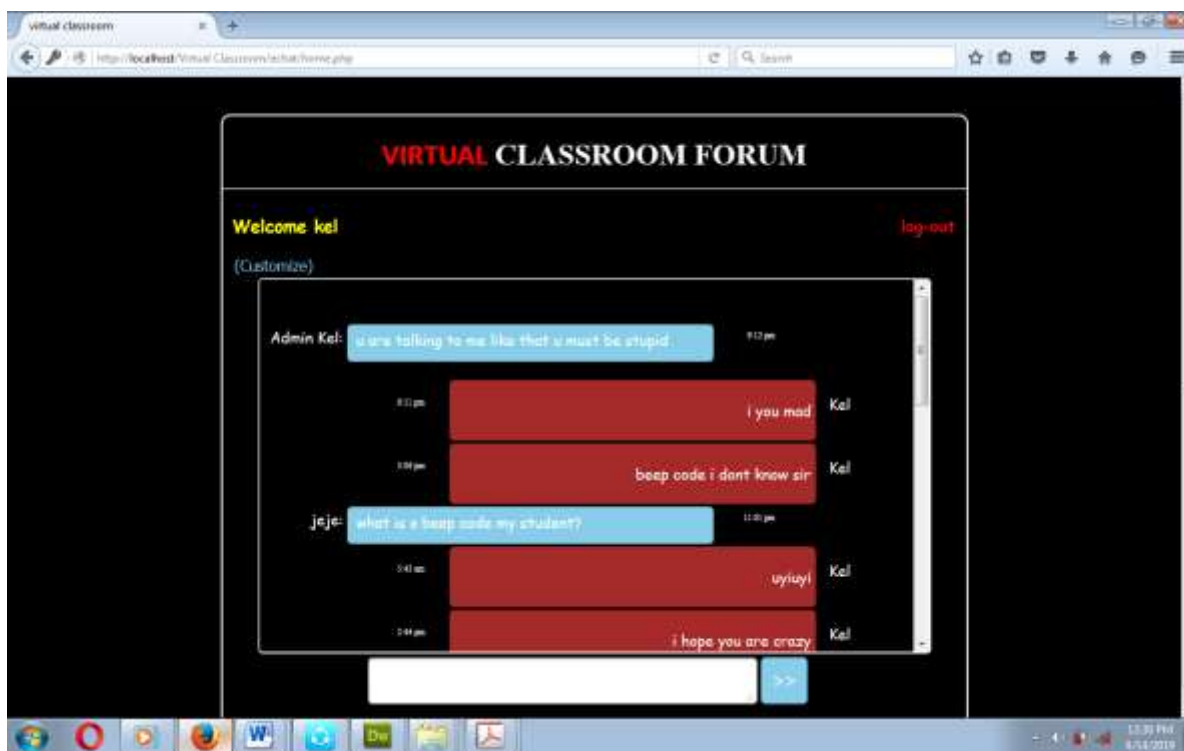


Figure 3: Virtual Classroom Chatting Forum

This module allow the students and lecturers to interact and sending of messages with one another.

### The Choice of Language Used

The new system was developed using PHP as frontend and MYSQL as backend which the user can use to interact with the system.



The choice to work with Sublime text as the text editor, it helps in creating a webpage within a short period of time; it provides a user friendly environment.

## CONCLUSION

In this paper, a virtual learning system has been developed. The new system is expected to serve as a remedy to the problems and weakness observed in the old system. It will combine open learning techniques based on new technologies (in this case, the world wide web) with conventional classroom teaching, The main intention is to make the learning experience more flexible, stimulating and available around the clock and at any place with Internet facilities.

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