

# E-PORTAL: A TOOL FOR SECONDARY SCHOOLS MANAGEMENT IN NIGERIA

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## ABSTRACT

ICT is becoming increasingly used in schools and educational institutions. It is also established in professional and classroom practice. This leads to increasing development in ICT which is also becoming more diversified. However, head teachers, companies and policy makers continue to take increasing interest in the scope of this field. Relatively little research work is being undertaken which considers aspects of ICT and school management. Recently in the 21<sup>st</sup> century, about 70% of schools now boast to have their own website but for the purpose of web presence alone. The websites are just there to make the cyber community aware of the school existence, they post pictures of the school, brief portfolio of the school and all these information are not updated frequently which is not only a poor practice but in no way improve the school standard or help in the management of the school activity. Technically, a school with a website is not expected to waste money and resources in printing enrolment form for students.

This project looks into the use of a web portal to manage some activities in schools today which hitherto have been include the manually. These activities include online registration of students, online notification of admission printing, E-Result checking, students record management system, staff record management system, online news and media and also e-recruitment platform prior to school management.

**KEYWORDS:** Web Portal, E-School, School management, ICT for management, portal solution.

## Introduction

The profound effect of the application of computers in management of school activities cannot be over emphasized. Computer has been used to process students' admissions and registrations, as well as their academic processing or procedure. Besides that the result of the student i.e. fully computerized will easier and quicker to process. The E-Portal for Secondary schools will enable more effective and efficient administration and management of information in schools. It is aimed at promoting the application of ICTs in managing information more effectively and streamlining internal administrative procedures as an important incentive for administrative staff to institutionalize the use of ICT at all levels.

The concept of E-Portal is defined as including the use of ICT (Information and Communications Technologies), to facilitate daily administration of services and improve the satisfaction level of user.

E-Portal focuses on the utilization of ICTs to deliver managerial services including education. It is also envisioned in the national ICT policy "A Nigeria transformed into an information and knowledge-based society and economy supported by consistent development of, and pervasive access to ICTs by all citizens by 2020."

Management is a process of making use of human and non-human resources to achieve organizational goals (Onifade, 2004). Management involves planning, controlling, organizing, staffing, leading, coordinating and directing the available resources (Adeleke, 2001). The implementation of E-School is a process of integrating all day-to-day school management and administrative processes into an electronic system known as E-School portal which provides one central repository for all school information.

The School Information Management System (E-School) is part of the on-going efforts to the implementation of ICT in Nigeria, in particular the Ministry of Education (MoE). The implementation of

E-School is a process of integrating all day-to-day school management and administrative processes into an electronic system known as E-School portal which provides one central repository for all school information.

In this research, we present an incite of the steps and strategies in the development, implementation and operation of the E-School portal, an integrated system that will provide optimization of school processes, and enable members of staff to access all facets of management and administrative work. The E-School system will also generate reports on items such as teacher to pupil ratio, pupil enrolment status, skill management reports, and performance management reports. These will be useful for school administrator in effective management.

Based on Rob, G. R. & Coronel.(2001), the database life cycle (DBLC) traces the history (life cycle) of a database system. Since the adoption of ICTs in the education sector, many school administrators and teachers at large have not fully realized its importance as a tool for development, in overall school management and administration. Hence, ICTs have not been exploited to the full capacity that would pave way to ICT initiatives in the ministry of education at large. Therefore, this research illustrates the use of ICTs in managing information more effectively and streamlining internal administrative procedures as an important incentive for administrators to institutionalise the use of ICT at all levels.

Furthermore, this research highlights the training programme necessary to ensure that School administrators understand the benefits of the new system and are actually prepared to use it.

The advancement in Information Technology and internet penetration has greatly enhanced various business processes and communications between companies (services provider) and their customers, educational sector not being left out. In coping with the globalization of Information Technology, Computer had played an important role in an organization or company. Most of the organization used

computerized system in handling all their activities regarding with data processing in order to make the organization operation more efficient and to reduce cost. All the manual activities can now be done using computerized system. Although computerized system had been implemented within an organization, the manual system can still be used as guidance.

The E-Portal is an automated version of the manual school management. It handles a lot of activities running in the school. Activities which include registration, admission letter, result checking, news and media dissemination, school fees update, recruitment, student record management etc.

In case of manual system, a lot of time is needed, manpower, finance etc. Here almost all work is computerized, so the accuracy is maintained. Maintaining backup is very easy and as well as managing of records. The system in question has two type of accessing modes, administrator and public user modes. Administrator has the right to make available or close activities on the public user mode, activities which include registration, result checking and also the job vacancy application platform. Also the administrator is responsible for the management of staff and students' record, upload of results, upload of news and the dissemination of information to parents/guardian both through SMS and through email. The public user who could be the parent/guardian or student can only view the information on the mode and can fill the registration form only when the activities is being opened by the administrator.

## **System Analysis:**

This document play a vital role in the development of life cycle (SDLC) as it describes the complete requirement of the system. It means for use by developers and will be the basic during testing phase. Any changes made to the requirements in the future will have to go through formal change approval process.

SPIRAL MODEL was defined by Barry Boehm in his 1988 article, “A spiral Model of Software Development and Enhancement. This model was not the first model to discuss iterative development, but it was the first model to explain why the iteration models.

As originally envisioned, the iterations were typically 6 months to 2 years long. Each phase starts with a design goal and ends with a client reviewing the progress thus far. Analysis and engineering efforts are applied at each phase of the project, with an eye toward the end goal of the project.

This project supports users who wish to be a student to register when registration is ongoing. Also the project provides all information about the school to the general public. Hence the need for this developed applications (since it is server-side software i.e. will be used on the web).

A PC or PDA device and a server containing the data are required. The interaction is shown in Figure 1.1

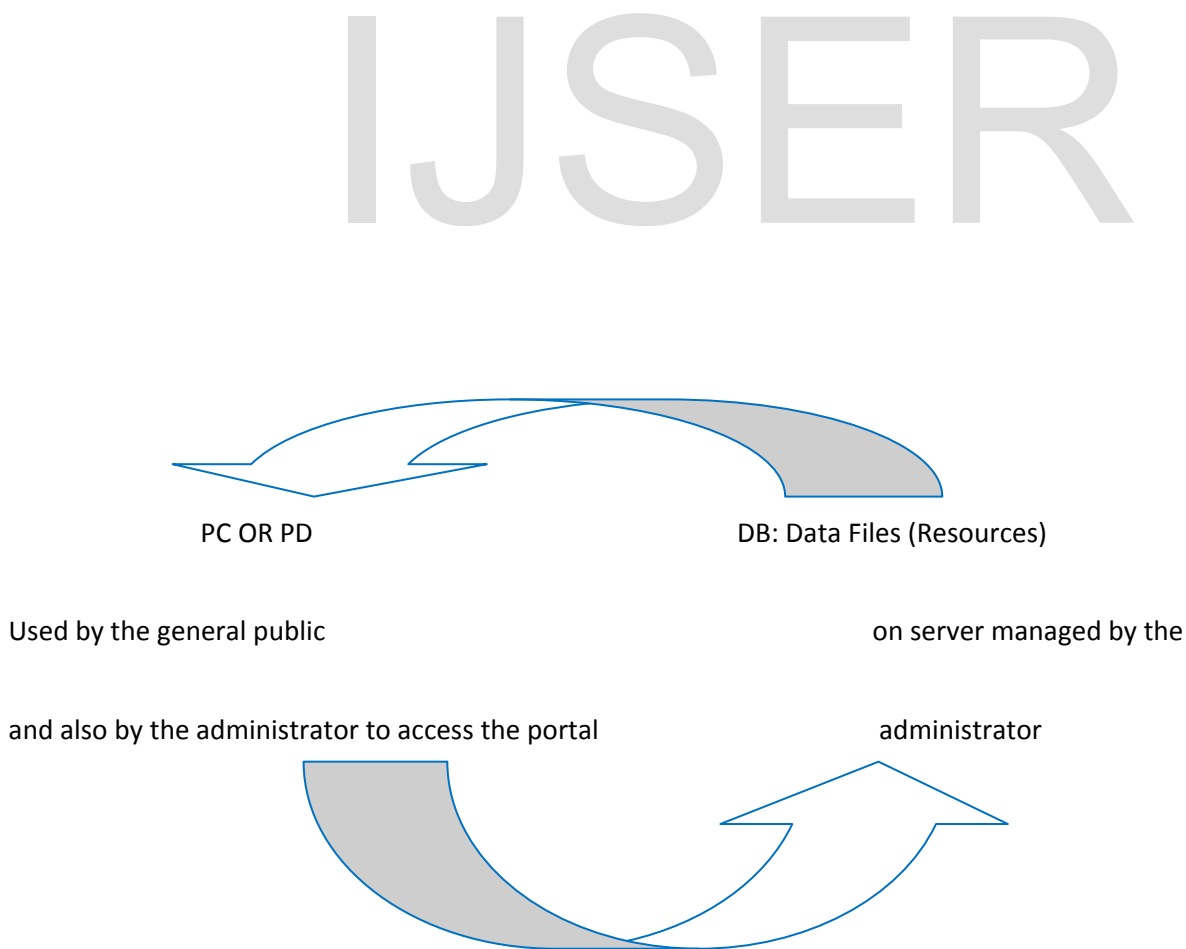


Fig 1.0 interaction

### **Methods of data collection vis-a-vis the proposed system**

Materials for this research work were obtained basically through primary and secondary sources. Primary source are data/materials obtained through interviews and questionnaire while secondary source represents works already done on the research topic, from sources like literature, textbooks, computer journals and on-line sources (internet).

The study was narrowed down and as such we had to make use of only four methods of data collections, which are:

- I. Observation Method
- II. Surfing
- III. Interview Method

### **SYSTEM ANALYSIS**

The configuration of library systems varies from one library to another, and depends on the type and complexity of the library system. The analysis of the system is divided into various aspects.

### **ANALYSIS OF THE EXISTING SYSTEM**

In analyzing the present system, it would be good to explain the cycle of reporting which can be referred to as the traditional system of most of the secondary schools. The process of record keeping in the traditional method involves putting the records which are on printed papers in a file and the files are kept in a store room.

The existing system is one that has been manually operated over the years. It is a system in which all the processes of management is of a manual approach. Critical analysis of this system reveals that it is prone to errors. Careful analysis also shows that due to the complexities of the manual system, records of students and staff kept are inaccurate and manually operated in such a way that requires office space or store for keeping recorded data.

### **LIMITATION OF THE EXISTING SYSTEM**

Some of the problems been faced by the manual system are as follow

1. Fast report generation is not possible.
2. Tracing a student's information is difficult.
3. Information is not properly maintained i.e. school fees, school portfolio etc.
4. No central database can be created as information is not available in database.

#### **INPUT ANALYSIS OF EXISTING SYSTEM**

The term input consists of collected data and other related materials being process for the production of an output and these includes vital information or materials for School automation process which are provided by the school to students. These include;

- Admission form: A copy of admission form issued to all applicant who wish to be a student of the school.
- Confirmation of admission letter: A copy of confirmation of admission letter given to all successful candidates after passing the entrance exam.
- Terminal Result: Each and every student is given a report of their terminal performance.
- Job Application Form: A copy of job application form is given to job applicants to fill and attach their curriculum vitae.

#### **OUTPUT ANALYSIS OF EXISTING SYSTEM**

Having identified the constraints of the current system, we will be analyzing the output of the current system; by output we mean the end result of any processed data. The output of the current system involves the issuing of registration form, Admission letter, terminal result and job application form.

#### **ANALYSIS OF THE PROPOSED SYSTEM**

The sole objective of the present system is to develop a data warehouse (DWH) OR data centralization over network (Data/CON), which aims at the centralization of data from different platforms. The data which are based in different platforms can be centralized in a unique server (Apache server). It should be noted however, that data will be collected with internet connection

#### **Advantages of the Proposed System**

After conducting the investigation, there is a collection of relevant data exposing the flaws and inadequacies of the present system. This investigation was conducted through a local database in which the application was used to retrieve records and saved to the data warehouse (DWH). The investigation revealed the need to develop a new system to take care of the inadequacies observed.

1. The data collected revealed that a data warehouse could be developed and used for management of the school.
2. The data warehouse could be structured to accommodate the large volume of information processed daily, weekly monthly, or annually.

### **Justification for the Proposed System**

From the analysis carried out of the present/existing system ways, several problems were noticed. It is in view of this that it is inevitably clear that a new automated system is important for effective and proper management of records. The following are the problems of the existing systems that justify the development of the new system.

1. There is usually delay in getting information from manual files. This greatly hampers performance and is the major cause of late reporting but a new system will minimize delay transaction and wastage of time.
2. Information dissemination is very slow because of the format in which information flows through the system, mostly in paper. The new system will improve drastically on the flow since it will be on a network. All records can be collected from the software which can be used for central administration.
3. It is very cumbersome to store information on paper files since this makes provision of information analysis very difficult. A new system will ensure that records are readily available for proper management.



## System Design:

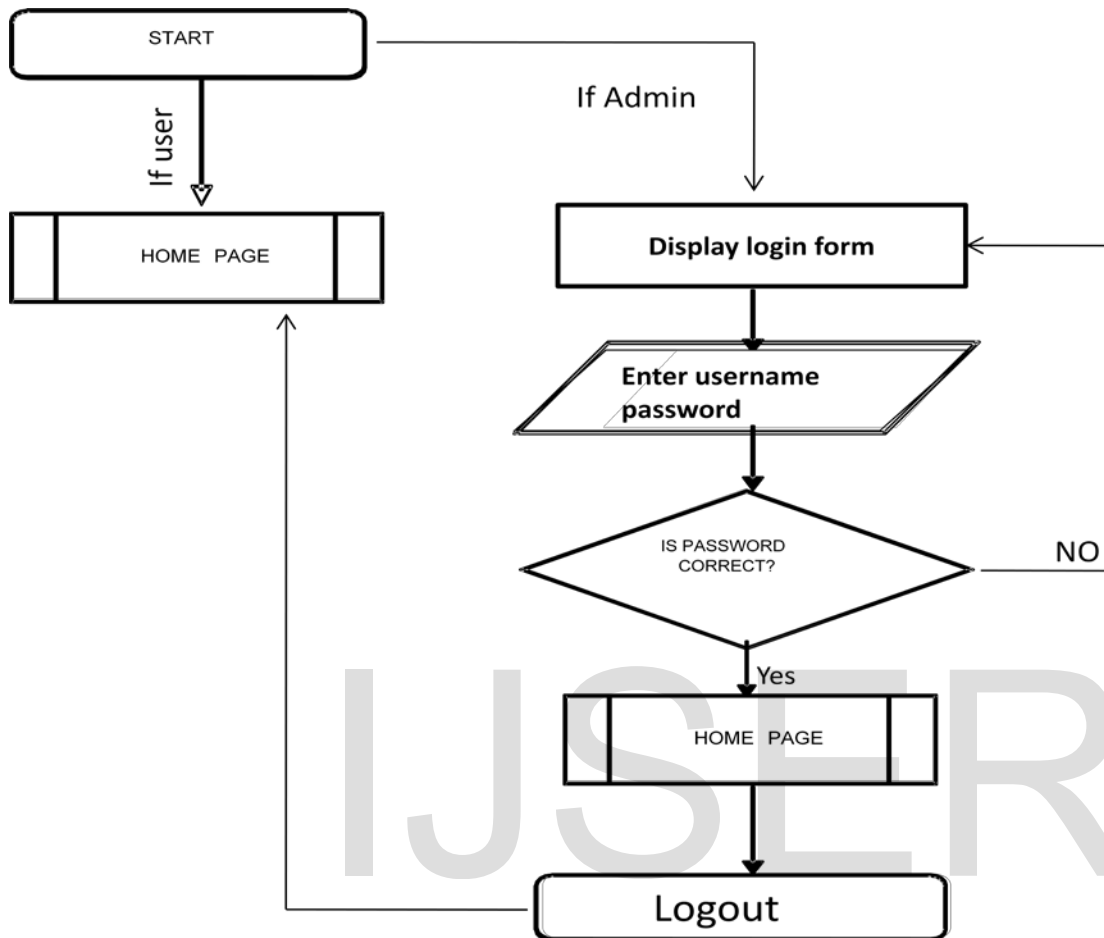
Graphical user interface

In order to ensure flexibility in the usage, the interface has been developed with graphics concept in mind. The GUI'S at the top level have been categorized as

1. Administrative user interface
2. The Operational or Public user interface

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## PROPOSED SYSTEM FLOWCHART



The administrative user interface concentrates on the consistent information that is practically, part of the organizational activities and which needs proper authentication for the data collection. The interfaces help the administrations with all the transactional states like Data insertion, Data deletion and Data update along with the extensive data search capabilities.

The operational or generic user interface helps the users upon the system in transactions through the existing data and required services. The operational user interface also helps the ordinary users in managing their own information helps the ordinary users in managing their own information in a customized manner as per the assisted flexibilities.

## **Proposed methodology-**

- Study the problems of the existing methods.
- Analyse the system, design application of the system, the hardware and software requirements for implementing the system.
- Choosing PHP for design. The PHP is designed for running highly interactive, dynamic, and secure web applications on networked computer systems. Thus, the PHP has benefits not only for the developer and support personnel, but also for the end user.
- For the end users, the platform provides live, interactive content on the World Wide Web, with just-in-time software access. Applications are readily available on all operating systems at once. Users do not have to choose operating systems based on the applications; they can run the applications on their favourite machines.
- To develop the application on the PHP Platform that is available on a wide variety of OS and hardware platforms. This much reduces the developing cost.
- To ensure that personnel support, version control and upgrades are much simplified because PHP-enabled application can be kept in a central repository and served from there for each individual use.
- Implementing the system using DBMS. A DBMS is a set of software programs that controls the organization, storage, management, and retrieval of data in a database. DBMS are categorized according to their data structures or types. It is a set of prewritten programs that are used to store, update and retrieve a Database. The DBMS accepts requests for data from the application program and instructs the operating system to transfer the appropriate data. When a DBMS is used, information systems can be changed much more easily as the organization's information

requirements change. New categories of data can be added to the database without disruption to the existing system.

## Tools

The following tools are used in the implementation of the proposed system

1. PHP: It is a server scripting language.
2. MySQL: A language called Structural Query Language used by relational database.
3. CSS: Cascading style sheet used in beautifying the pages.
4. HTML: Hypertext Mark up Language used in web designing because of its being interpretable by all available web browsers and makes the directory accessible.

## Modules

The system after careful analysis has been identified to be presented with the following modules:

The modules involved are:

1. **School information:** Through this service one can access the complete information about the school such as admission procedure, placements, school events, achievements etc. via visiting the web portal.
2. **School fees update:** Any parent or guardian who wishes to enrol his or her ward into the school might want to check the school fees for each and every class and for that purpose they will be given a particular link through which they can access the information required.

**3.Student registration:** It gives opportunity for interested candidates for enrolment to be a student of the school. The administrator will conduct entrance exam and candidates will be admitted into classes based on their performance.

**4. Student's admission notification printing:** This facility provides the performance of the students given an offer of admission to print their admission notification through the portal and a pin will be given to all successful candidates to print their copy of the confirmation.

**5. Student's E-Result checking:** This facility displays a printable format of students' terminal results to students and parents after every terminal examination.

## System benefits

The benefits of these system are numerous, we will only mention but few of them below

1. It reduces the cost of management of a school as most paperwork and printing are to be done by the concerned individual.
2. It increases efficiency as searching or students record or tracing staff record is with ease, gone are the days of keeping old record in the store room, hence using the resources meant for other purpose to keep bulky files
3. It will brand the name of whichever school using the system as parents and guardians will be easily convinced of technological advancement in the citadel of learning.

## Conclusion

The research has successfully achieved all the planned objectives.

The administrator is expected to maintain the reliability and accuracy of database while inserting, editing and deleting student's registration entries and student's record. Also the research shed more light into the implementation of ICT in the field of management, school management to be précised.

## Recommendation

Earlier research has proven and shown various school management processes and automation but have not tried relating them all as single software. This research work recommends that the developed E-portal for Secondary schools management can be further enhanced to include some other features like timetable management system, online examinations, social playgroup etc to mention but few. Having implemented, tested and observed that the software application provide a great deal of improvement over the existing manual management process. We therefore, confidently recommend it to any academic institutions that require an effective and efficient school process management.

We strongly recommend a parallel change over implementation approach which involves the operation of both the manual system and the new system simultaneously for some period of time to monitor the reliability of the new system before a direct change over will be applied.

Finally, for proper implementation and usage of this software package, proper attention must be given to the administrative module, the personnel to be in charge must be a trained and Information Technology oriented person to ensure effective use of the software.

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