



Students' online learning and information management system: A focus on Kasama College of Education (SLIMS-KACE)

Dr. William Phiri^{1*}, Yamba Lawrence Simuchenje²

¹ Chalimbana University, Directorate of Research and Postgraduate Studies, Lusaka, Zambia

² Yamba Lawrence Simuchenje, Teaching Council of Zambia (TCZ), Lusaka, Zambia

Abstract

The rapid developments and innovations in ICTs and increased use of the Internet has increased the importance of web based learning and electronic student information management systems in most higher learning institution both in developed and developing world. Unfortunately Kasama College of Education one of the public colleges in Zambia has yet taken advantage of the technological advancements to implement an online application system that would help in improving the management of students' records and bring efficiency in the delivery of learning contents to both students on the desk and those that are studying with the college under the distance learning mode.

Keywords: innovation, information management system

1. Introduction

Kasama College of Education is a government public college offering teacher education in both Primary and junior secondary section in both full time and distance programmes for Northern and Muchinga Provinces. The college uses the manual processes of recruiting and registering students. This exercise is not only strenuous but also time wasting in the process of conducting these activities. It is important to note that the world has moved miles away in technological advancement but Kasama College of Education is still stuck in using manual systems without taking advantage of the many benefits electronic systems bring on-board. It is interesting to state here that the electronic systems in the education sector have been around and used in the education system since the 1960s for some time now (Zlatko and Subitcha 2016) [15] while the college has not implemented any of these available platforms. Factors arising to this status are many and some of them account for complexity of the platforms against ICT knowledge and competencies, cost and processes of procuring and sustaining foreign acquired products and many more. Challenges the college faced included but not limited to the following: (a) The College faces difficulties capturing and processing students' information (b) Students queue up in long lines during opening days to register. This was identified as a gap that needed to be addressed by developing an electronic system that could address this problem. It is against this background that a home grown online students learning and information management system was developed to be implemented and used by the college and this paper outlines the background to the development of this system and gives the operational manual in other words, the user manual. This home grown web based student learning system is titled "Students' Learning and Information Management System for Kasama College of Education (SLIMS-KACE)".

1.2 Objective for the development of SLIMS-KACE

The objective of developing SLIMS-KACE was to develop an Electronic System that would enhance Efficiency for Students' Application, Registration and Learning Process at Kasama college of Education.

Key System features of SLIMS-KACE

1. Public shared resources - accessed without login system
 - On-line application and Registration Management
2. Private Reserved resources - accessed with login system
 - Teaching and learning Function

2. Literature Review

The invention of the internet and the World Wide Web (www) has revolutionised institutions of the world are conduct their businesses. Institutions of higher learning have not been left behind and many of them have embraced Information communications Technologies (ICT) innovations in delivering educational and learning contents to their students via the online learning platforms. Tagreed *et al.*, (2016:1) [12] note that, "due to the rapid growth of internet technology, universities around the world are investing heavily in e-learning systems to support their traditional teaching as well as to improve their students' learning experience and performance".

The online educational platforms ride on the E-learning concept which is the practice of using information and communication technology to create learning experience that can be formulated, organized and created with ample freedom without any boundaries states (Horton, 2011) [6]. This concept is a process where a set of lessons are provided on digital devices like computers or any mobile devices that supports the learning.

The term E-Learning is the process of using Information and

Communication Technology (ICT) to deliver information for education where instructors and learners are separated by distance, time, or both in order to enhance the learner's learning experience and performance (Keller *et al.*, 2007; Tarhini *et al.*, 2016)^[8, 13]. In a related event, Horton (2011)^[6] defines e-learning as a set of instructions delivered via all electronic media such as the internet, intranets, and extranets. Thus, by eliminating the barriers of time and distance which allows individuals take charge of their own lifelong learning. It is important to note that E-learning environments reduce the cost of provision and accessing of educational programmes and therefore increase revenues for academic institutions and relieves stress on the part of students in many ways (Masa'deh *et al.*, 2016; Ho and Dzung, 2010)^[9, 4].

2.1 Advantages of using e-learning platforms

While these platforms bring with them a number of advantages, institutions of learning must decide during or before the implementation phase of these platforms on the best approach to deliver education, such as online learning, face to face, or apply blended approach. Further, Learning Management Systems (LMSs) refer to the web-based delivery applications or technologies that are adopted by various institutions of higher education worldwide to deliver courses' contents, provide distance learning and to manage the education process indicates (Phiri & Silumbe, 2016)^[10] while Masa'deh *et al.*, (2016)^[9] and Tarhini *et al.*, (2016)^[13] indicate that LMSs create a variety of ways to deliver instruction and provide electronic resources for student learning. Some methods, such as using Web pages to deliver text in much the same way as hard bound texts, are very familiar to academic staff. However, a big advantage is that the Internet also supports the delivery and use of multimedia elements, such as sound, video, and interactive hypermedia.

2.2 Examples of some e-learning platforms

It is also important to note that there are different Web-based learning systems that have been developed to facilitate learning in a web-based learning setting; these include Moodle, Web Course Tools (WebCT), LAMS and SAKAI, Blackboard Learn (BBL) (Masa'deh *et al.*, 2016; Tarhini *et al.*, 2016)^{[9][13]}. These web-based learning platforms most are used for creating learning contents and delivering them to learners using employing most adaptive methodologies when reaching the students. They are also a platform for administering assessments tailored at students self-paced.

2.3 Disadvantages of web-based learning platform

While Web-based courses have advantages, it is equally important to note that there are disadvantages. These might include little or no "in-person" contact with the faculty member, feelings of isolations, a difficult learning curve in how to navigate within the system, problems with the technology, the need for the student to be actively involved in learning, and increased lead-time required for feedback regarding assignments (Holmes and Gardner, 2006; Masa'deh *et al.*, 2013; Kanaan *et al.*, 2013; Tarhini *et al.*, 2013b)^[5, 9, 7, 13]. There are also different aspects, especially in the developing countries, such as providing the required funds to purchase new technology, lack of adequate e-learning

strategies, training for staff members and most importantly the student resistance to use the e-learning systems (Wagner, 2008)^[14].

The criticism concerning effectiveness of web-based learning platforms is related to the specific features of the online educational environment. It has been argued that taking classes on the internet is neither practical nor effective. For example, the interaction between teachers and students cannot be the same as it is in a traditional classroom, teachers cannot adapt their teaching style to the learning needs of students, and so on (Chan, 2003; Cowan, 2006)^[2, 3].

It is important to note that online learning platforms have come to stay; it is anticipated that they will co-evolve with traditional learning platforms in the future observes (Adzobu 2014)^[1]. Further, it must be understood that e-learning platforms are already taking centre stage in learning and research in institutions of higher learning in developing countries. A good example can be drawn from some of the high schools in Kenya which have gone ahead in the adoption and use of online platform systems in managing students' records and learning process. Koech (2016) observes that Nairobi Schools have adopted an online system of transmitting admission letters to candidates and parents and those candidates obtain instructions by visiting the schools' websites. In Zambia, Schurgers, *et al.*, (2009)^[11] indicate that the use of online and ICT in Zambian education has been implemented at the University of Zambia in various fields of study. For example, they note that with the introduction of ICT in education, a new world of possibilities is available to further assist both lecturer and student to maximize the learning experiences.

The demand of using these online platforms in education institutions in Zambia is on a rise and many players in this sector are taking advantage to supply the ever growing demand of online platforms such as the Astria Learning Zambia. This educational IT solutions provider, partners with institutions around the world including learning institutions in Zambia to meet the needs of students, faculty and administrators. The Astria LMS is already enabling institutions to manage and deliver engaging content and activities to learners online. ([https:// thebestofzambia. com/ categories/education-and-careers/elearning-and-distance-learning](https://thebestofzambia.com/categories/education-and-careers/elearning-and-distance-learning))^[16]

It is therefore required that Zambians systems developers, rudimentary as they may be, need to rise up and supply this 'thirsty' market for e-learning platforms with home grown solutions than being recipients and supporters of the exotic economies. It is against this background that as SLIMS developer has developed an online system tailored to address the needs of Kasama College of Education to start managing the students learning and records management processes using online electronic systems.

The development of SLIMS-KACE online platform took into consideration a number of factors some of which have been highlighted by Adzobu (2014)^[1] who notes that the design of e-learning platforms is a complex initiative. The complexity in design is reflected in the number of stakeholders involved in the various stages and processes of the design. This, indeed, calls for collaboration and interactivity at different levels of the design process. Further, Tagreed *et al.*, (2016:1)^[12]

indicate that, the success of an e-learning system depends on the understanding of certain antecedent factors that influence the students' acceptance and usage of such e-learning systems. As such the system that has been developed to be used at Kasama College of Education is developed so that users find it to more user friendly and has as much as possible reduced the complexity that are characteristics of most contemporary softwares which Adzobu (2014) [1] indicates that electronic learning platforms are more complex.

3. System User Guide outline

3.1 Public shared resources

The system's resources are accessed clicking on the inks from

3.3 The System

the index page. The index page links are as follows: Programmes offered, Notes board, About KACE, Contact us, Photo Gallery, Online application system, Online Registration –Returning Students and Members sign up

3.2 Private Reserved resources

The private reserved resources are accessed by login into the system from the index page using the following links.

- Students' login link
- This gives access to the learning platform resources
- System's administrator Login
- This give access to the management of the entire system

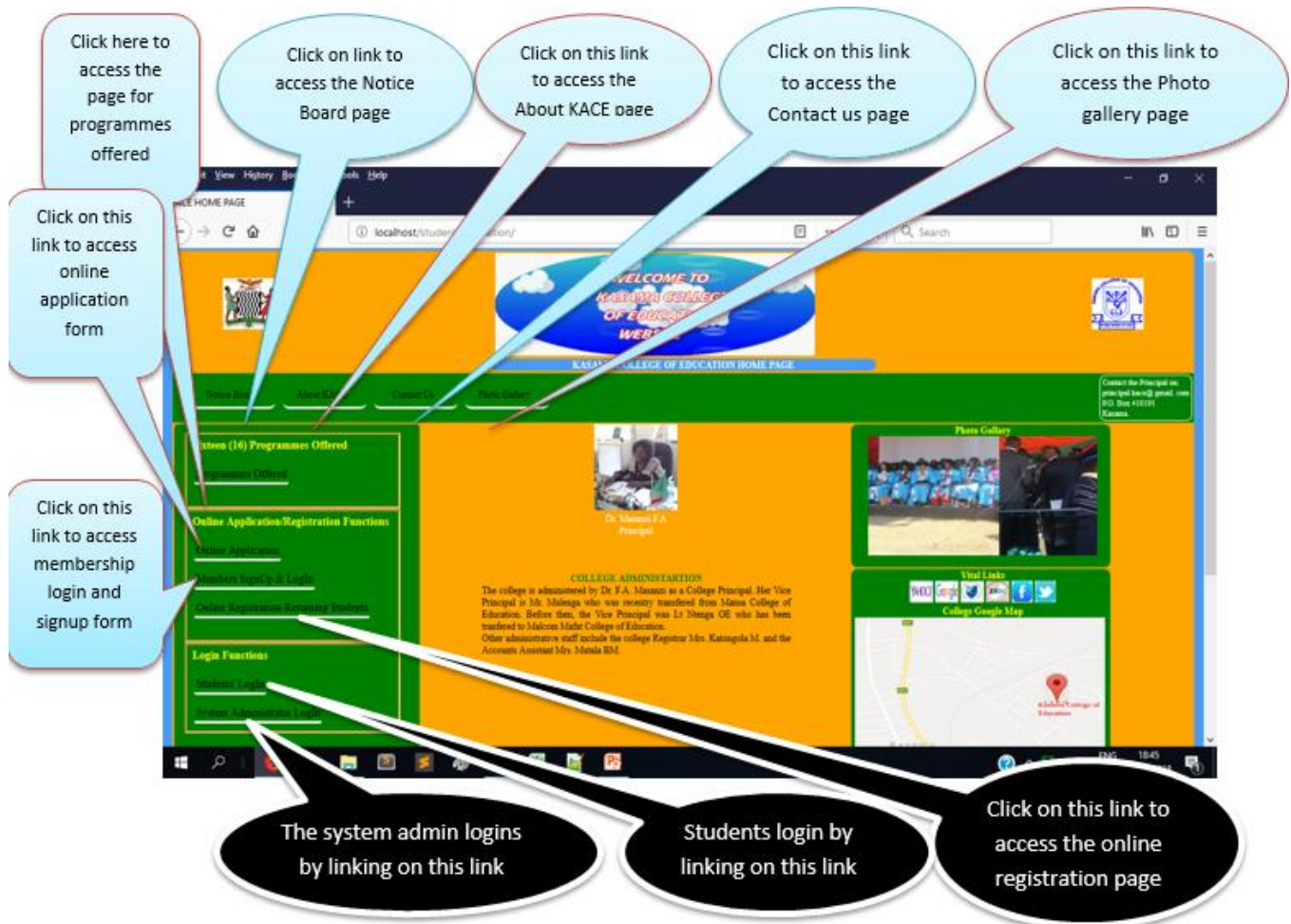


Fig 1: This is index or front page of the system

The following are index page links

1. **Notes Board:** This link provides visitors with information. The college management is supposed to posts information and announcements for the public and students regularly.
2. **About KACE:** This link provides information about the college. The visitor on this page will be acquainted with what goes on in the college.
3. **Contact Us:** The contact us link provides the platform for

the visitor to send questions, inquiries and concerns for clarification and the administrators are supposed to respond based on the visitors concern.

4. **Photo Gallery:** This link takes the visitor to a page where college memories about the events and activities are posited for the public to view and appreciate the build and reactiveness of the college.



Fig 2

5. **Programmes offered:** This link takes the visitor to a page containing programmes offered showing course codes.



Fig 3

Online Application

This link takes the aspirant applicant to a page containing the online application form.

The application has two stages

Stage 1: The applicant submits the following details

Stage 1: Submit details about Names, NRC/Passport, Email, Mobile No., Programme of Study and academic & professional documents

ATTENTION!
If you need any assistance do not hesitate to call the college registrar on the following numbers
09770000001
09660000001
09550000001

Application Form

First Name
Last Name
NRC or Passport No.
E-mail Address
Userid (e.g-johnjohnes)
Pick Date of Registration Here
Indicate Your Phone No. Here
Gender Male or Female
Select the Programme Here
Amount Paid as application fee

Upload Scanned Copies of:
1. Bank Deposit Slip-Application Fee
2. Academic Credentials
3. ID (NRC/Passport No).
Browse... No file selected

Submit the Form

Fig 4

Stage 2: The applicant submits the following details

1. Applicants Full Names
2. Gender
3. Date of Birth
4. Age

5. Parents/Guardian details

- Name
- Occupation
- Residential Address

Stage 2: Submit Student's & Parent/Guardian's Residential and Occupational Details

Back

Applicant's Full Names
Gender
Date of Birth
Age

Enter the details of the Parent/Guardian here

1. Parent/Guardian Names
2. Occupation
3. Postal & physical Address

Apply Reset

Fig 5

6. **Membership signup and login link:** This link provides the platform for the lecturers to subscribe and login so that

they can prepared learning resources.

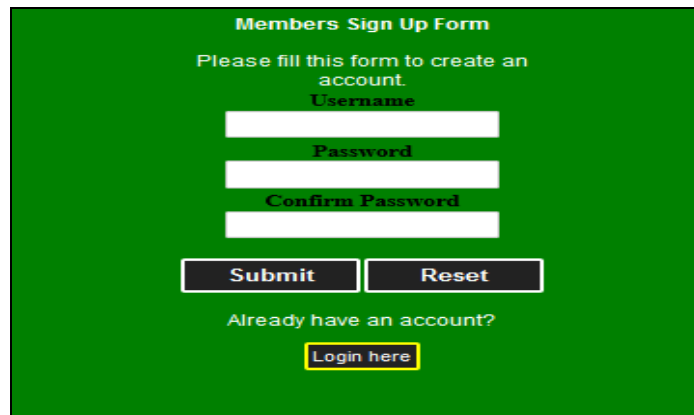


Fig 6

The page below shows the logged in client

The client will have privileges to section portal and have the learning resource

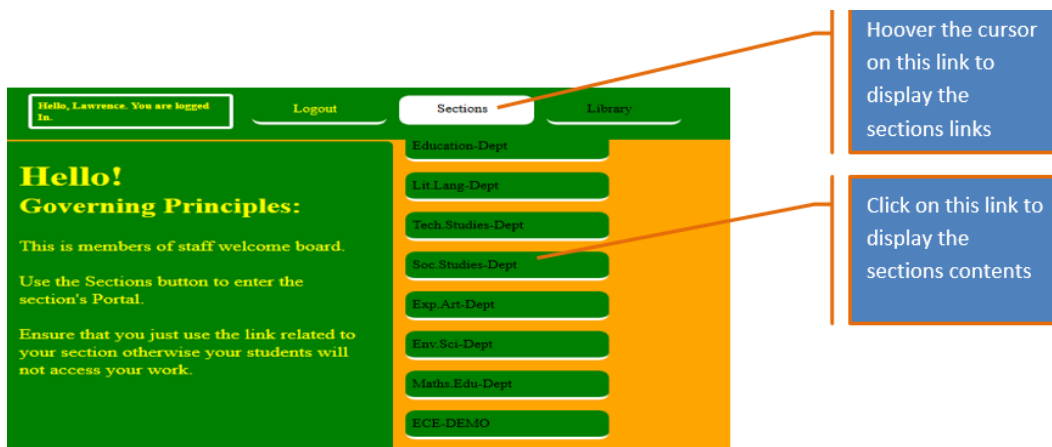


Fig 7

Example of Technology section

The lecturer will upload the lessons and notes from this page

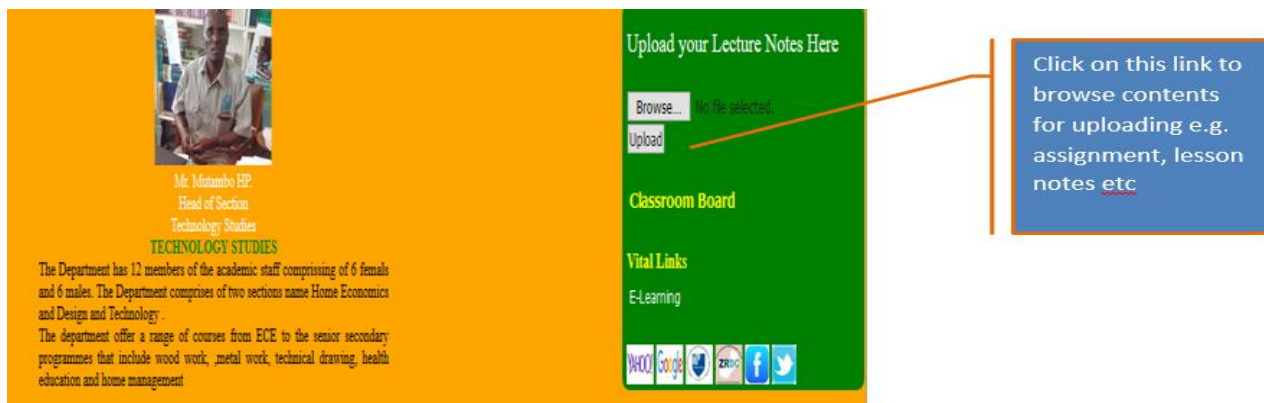
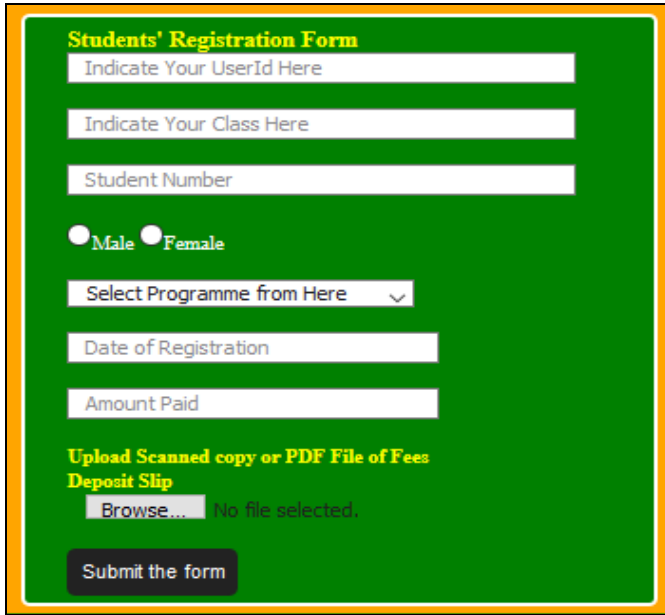


Fig 8

7. **Online registration link:** This link provides a platform for the returning students to register for their academic programmes for the particular term.

If the student does not register he or she is not given access to the online resources.

The following details are submitted on this page.



Students' Registration Form

Indicate Your UserId Here

Indicate Your Class Here

Student Number

Male Female

Select Programme from Here

Date of Registration

Amount Paid

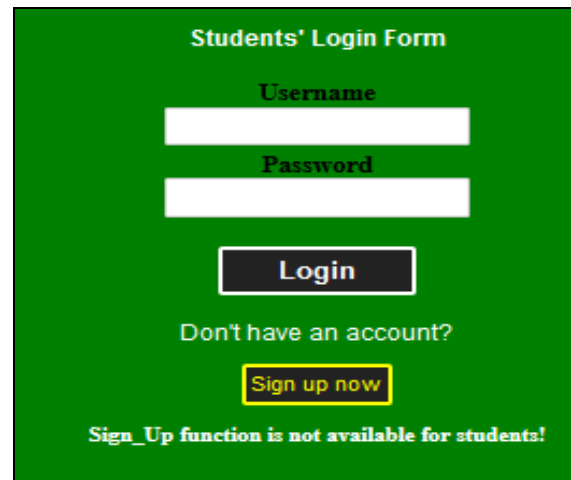
Upload Scanned copy or PDF File of Fees Deposit Slip

Browse... No file selected.

Submit the form

Fig 9

8. **Students' login link:** This link is to be used by registered students and returning students to login into the learning portals.



Students' Login Form

Username

Password

Login

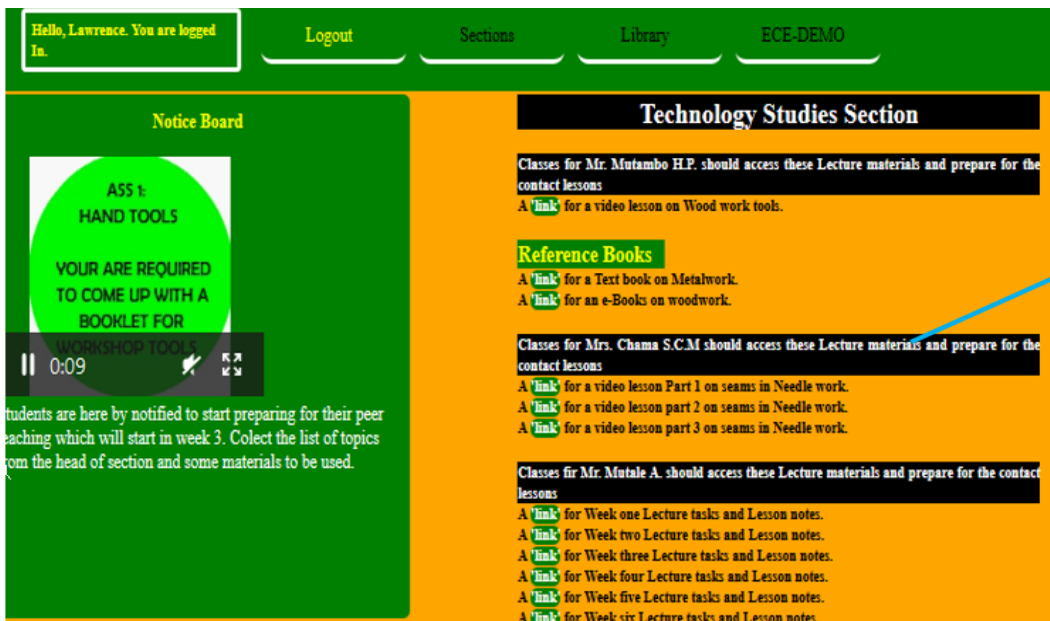
Don't have an account?

Sign up now

Sign_Up function is not available for students!

Fig 10

When the student logs in he/ she will have privileges to access the sections pages and have access to learning materials



Hello, Lawrence. You are logged in. Logout Sections Library ECE-DEMO

Notice Board

ASS 1: HAND TOOLS

YOUR ARE REQUIRED TO COME UP WITH A BOOKLET FOR WORKSHOP TOOLS

Students are here by notified to start preparing for their peer teaching which will start in week 3. Collect the list of topics from the head of section and some materials to be used.

Technology Studies Section

Classes for Mr. Mutambo H.P. should access these Lecture materials and prepare for the contact lessons

A [link](#) for a video lesson on Wood work tool.

Reference Books

A [link](#) for a Text book on Metalwork.

A [link](#) for an e-Books on woodwork.

Classes for Mrs. Chama S.C.M should access these Lecture materials and prepare for the contact lessons

A [link](#) for a video lesson Part 1 on seams in Needle work.

A [link](#) for a video lesson part 2 on seams in Needle work.

A [link](#) for a video lesson part 3 on seams in Needle work.

Classes fir Mr. Mutale A. should access these Lecture materials and prepare for the contact lessons

A [link](#) for Week one Lecture tasks and Lesson notes.

A [link](#) for Week two Lecture tasks and Lesson notes.

A [link](#) for Week three Lecture tasks and Lesson notes.

A [link](#) for Week four Lecture tasks and Lesson notes.

A [link](#) for Week five Lecture tasks and Lesson notes.

A [link](#) for Week six Lecture tasks and Lesson notes.

Click on any link here to access the lessons, reading materials, videos lessons etc

Fig 11

9. **System administrator Login Link:** This link is to be used by the system administrator to login and manage the students and lectures credential. The system Admin is to check on who has applied for which programme and check payments, accept and or reject the applicant's application.



Username

Password

Login

Fig 12

When the system administrator logs in is take to the following page



Fig 13

On this page the administrator will have privileges to check details of:

1. Individual applicant



Fig 14

2. View applicants who are pending approvals
3. View returning students who have registered

Applicants' Records							
First Name	Last Name	NRC or Passport	Program Id	Paid Application Fee	File Name	Zippped File	Action to Take
Lawrence Simuchenje	Yamba	200390/42/1	Sc.Trs.Dip.Com/Std	250	ladmin.jpg	Download	Accept/Reject

Fig 15

4. View the students' parents/guardian details

Student Information Management System					
Full Names	Gender	Dob	Age	Parent/Guardian and Residential Details	
Mupelwa Simuchenje Yamba	M	2018-07-22	6	Lawrence Yamba hjdthjfdhfdj	
Kuzipa Namuchenje Yamba	F	2018-07-21	1	Lawrence Yamba	
Lawrence Simuchenje	M	2018-07-11	1	lawrence	

Fig 16

5. Set passwords for the system administrators
6. Set passwords for successfully applied or registered students

The system is designed in such a way that the student will not set the password on his own at this stage of system development for reason being that this stage will be implement as the system is tried and tested to be functional and answering to the needs of the college needs. It is for the time being as a way to control and monitor who should be allowed access and who should not be allowed access.

3.3.1 Strength of the system:

As it has been highlighted in the background statement, the world is now operating on the information stage and the provision and making available the resources to the user is key Component for organisational efficiency and effectiveness. The demand for online platforms by various institutions nowadays is high and especially that these platforms are here to stay as noted by Adzobu (2014) [1] who states that online l Earning platforms have come to stay; it is anticipated that they will co-evolve with traditional learning platforms in the future. Increasingly, e-learning platforms are taking centre stage in learning and research in institutions of higher learning in developing countries.

3.3.2 Weakness of the system

The system is developed and not yet implemented. It is anticipated that overwhelming challenges will be handled as the users give feedback when the system is implements. Further, security features and features for students setting their own login passwords are not fully developed. Currently the users are assisted to set password in order for them to gain access to the resources.

4. Conclusion

It is envisaged that this system will be here to provide the

much needed solution on the online e-learning systems in learning institutions. It is hoped that Kasama College of education will find it easy to implement and use this platform as it is intended in their endeavours to providing education assisted by the online learning platform.

5. The Way Forward

- There is need for home education online system developers to collaborate and enhance each other's knowledge and skills to provide home grown solutions for the ever growing demand of ICT systems.
- There is need for the nation to setup institutions through ZICTA for developers to show case their talents and building collaborative linkages.
- There is need to scale up ICT education in institutions of learning so that more and more of citizens can be familiar with ICT platforms and would be ready to adopt and use these online learning platforms.

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