Expanding E-Learning Initiatives in Malawi

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Abstract

As the demand for nurses and midwives increases in Malawi, Kamuzu College of Nursing (KCN) (The University of Malawi School of Nursing) is committed to respond to this need by increasing student in-take. It has also diversified into several research MSc Programmes. KCN has two campuses 400 km apart and also provides leadership at curriculum level to a variety of nursing colleges across the country . However, to achieve this broad mandate, there was a need for multi-dimensional approach. As such, while the college is expanding classroom space, it was imperative that other modes of delivery of the curriculum be explored as well. This paper describes these modes of delivery that depend on a reliable campus and national network for effective delivery,

Given the critical shortage of nurses, KCN has doubled the student intake for registered nurses over the past five years. However, the increase has come with some challenges including the need for additional classrooms, increased work-load for faculty; and increase in operational costs, increased demand for teaching and learning materials. These challenges required consideration of other modes of delivering the curriculum. KCN is now putting in place e-learning infrastructure to solve these problems, where two systems are being implemented.

The Student Management system which handles the administration part of students i.e admission, examination records, assessment process, finance, room allocation, transcripts, students union electronic voting, mobile text messaging exam results feedback etc

The other system is the curriculum management system which handles the academic and learning resources where lecturers upload their modules, electronic resources, quizzes, discuss forums, video simulations by The development of these modules is an interactive process between lecturers , the ICT department and College Administration conduct The response of staff and students to the system is The fuller implementation of MAREN to facilitate wider delivery of these valuable training materials over the academic network will enhance the system.

1.0 Introduction

As institutions little by little are making efforts to get connected there is little focus on what happens when there will be a network connection between academic institutions. With the connectivity initiatives KCN took an advantage in developing resources that solve its critical problems and deploy it across the shared network. Miller, [1] stated that over 30 studies have

found that interactive technologies reduce learning time requirements by an average of 50 percent.

KCN developed a Student Management System and Curriculum Management System shared among two geographically separated campuses using the academic network.

2.0 Background

Kamuzu College of Nursing (KCN) is a constituent college of the University Of Malawi (UNIMA) which has two campuses in Lilongwe and Blantyre, separated by a distance of about 300 kilometres, and major clinical sites in Blantyre, Lilongwe, Zomba and Mzuzu. Traced back from 1965 when it was called a National School of Nursing, and then upgraded to a full constituent college in 1979, the college has been offering a variety of courses in the fields of Nursing and Midwifery.

The National Human Resources for Health (HRH) Census [2] puts the number of Nurses at 4000 representing 13% of the total health workforce. This translates to about 1 nurse per 3000 people in Malawi representing a nurse to patient ration of 1:3000. The student nursing output with support from the Emergency Human Resources plan increased to about 600 nurses annually with 100 being registered nurses. However, the challenges for Malawi remain to train double the number of registered nurses (university trained nurses) currently less than 25% of all nurses in the health system.

To date, KCN is the largest national producer of high quality professionals in nursing and midwifery. Offering a wide choice of programmes at Diploma, Degree and Masters levels, the college is the major trainer of nurses for Government, private and mission hospitals, as well as a training institution for almost all nursing and midwifery instructors in CHAM private colleges, the only alternatives to KCN in as far as training of nurses and midwives is concerned. This leaves KCN with a major responsibility and role to play in ensuring quality nursing and midwifery services in Malawi.

3.0 Why KCN adopted an E-learning platform

- Pressure to increase intake currently at 100 for generic B Sc program, 30 for Post Basic BSc programme, 30 University Certificate in Midwifery, 20 Diploma in Nursing and 16 MSc in Midwifery and Reproductive Health, which are all very to meet the demand of the Malawi health system.

- Inadequate numbers of faculty teaching staff.

- High mobility of faculty members and students between campuses and teaching sites including district hospitals in Malawi

3.1 Strategies put forward to address the challenges Provide an inter-connectivity of the two teaching campuses and two major clinical teaching areas.

- Training of faculty in ICT and development of e-learning tools and content

- Development of KCN curriculum and course content to be delivered using ICT tools and equipment

- Development of an internet and intranet systems to enable KCN curriculum and course content delivery using ICT tools and equipment

- Introducing systems for students to access teaching and learning materials, assignments and examinations using ICT tools and equipment

- Introducing post basic training programs decentralized through the two teaching campuses and two major clinical teaching areas while students continue working in their places of work

3.2 Available Resources

- MTL has already established a backbone Fiber connection that is currently running across Malawi and connects to Mozambique and Tanzania.

- KCN Blantyre campus benefited on an initiative made by research and education institutions in which MAREN took a lead by installing Fiber connection between College of Medicine, KCN Blantyre campus, Malaria Alert Centre, MLW, QECH and other institutions around that area which enables them to have fast internet connectivity. Since this is a shared contribution, it also enabled them to share resources such as; networking, antivirus, research, journals and many more within their huge network.
  This initiative came as a result of the common problems that these institutions were facing on Internet connectivity. Each of these organizations has previously subscribed to different Internet service providers which has been very slow, expensive, and not very reliable

- The college currently has a campus network installed in 2005, which it hopes to integrate with the proposed network. Equally, the college has technical staff in ICT and administration that will be assigned to the project.

- Faculty members are very committed to delivering their courses online as there is duplication of effort under the current setup. They pledged all their full support to the project.

4.0 Curriculum Management System

In December 2009 after analyzing the problems faced and assets available, lecturers sat down and came up with ideas of the proposed curriculum management system (CMS).

4.1 Requirements and Ideas for the CMS at KCN

- Deliver content to students in a context that is relevant to their curriculum

- Editable by staff who are responsible for their teaching materials

- Provide additional information that is relevant to staff / students
  - News / Noticeboard

- Discussions
- Course Based layout with time table embedded per unit/topic
- An approach that directly represents the curriculum structure
- Each level of the curriculum can be represented in the CMS with its own page
- Each page can contain written content, links to web-resources, and downloadable files
- Permissions can be set to only give access to pages to students who are enrolled on the particular course

The ICT team came together and customized a Moodle framework to arrive at the ideal curriculum management system that covers all aspects the lecturers highlighted., where lectures can upload their modules, electronic resources, quizzes, discuss forums, video simulations etc . the resources are linked systematically according to the module structure.

4.1.1 Curriculum Management system setup

The system is web based, divided into 3 pages to navigate

Home page

- Introduction Text
- Personalized list of Modules
- Generic Links
- News Feed

Module Page

- Editable Text area for providing Overview Information
- Links to Supporting Material (Learning Outcomes, etc)
- Links to Units
- Links to Downloadable Module Packs

Unit Page

- Course Overview Information
- Display an overview of the unit Show a list of the activities to be covered
- Show the learning objectives of the unit
- Show any related resources for the unit
- List of upcoming teaching events in the unit

As the CMS platform was completed, there was the need for the lecturers to create resources and also discover way of how easily can the students access the e-resources. We therefore partnered with University of Edinburgh who had successfully implemented their CMS. They helped our faculty in redesigning their content in an electronic resource, also provided tools for creating e-resources, quizzes, flash and videos to be uploaded in CMS. University of Edinburgh brought 80 brand new computers and Servers to provide adequate access for the students to the CMS.

We started conducting continuous professional development workshops after every 3 months in teaching the lecturers in the following

- how to use tool for creating e-resources such as engage processes, quizzes, surveys and flash animations
- how to create videos, create storyboards, edit videos, voice over
- how to link the resources to CMS in the appropriate module topic

4.2 Project work Plan

ACTIVITY	YEAR 1	YEAR 2	YEAR 3	YEAR 4
Getting requirements from Lecturers				
Customization of Moodle and deployment across 2 campuses				
Resource creation User training and Creating of e-resources				
Linking Resources into CMS				
Student orientation				
Evaluation of Impact				

4.3 How KCN CMS has improved collaboration

Since we deployed the CMS on MAREN network linking the two campuses, lecturers at KCN also share content with College of Medicine, which is on the same network. KCN lecturers have been able to link resources in College of Medicine repositories, which is relevant to nursing and vice versa. Some of the electronic resources have been core authored by lecturers between the two colleges through collaboration.

Apart from local collaboration, there is also external collaboration:

University of Edinburgh has played a big role in bringing together lecturers from Edinburgh and KCN to collaborate in creating electronic content for the nursing programmes. With the coming of the UbuntuNet network and the AfricaConnect project, the opportunities for linkages such as these, both with European Universities and other Universities in our region open up.

In addition, OER (Open Education Resources), coordinated by Neil Butcher and Associates (South Africa) has assisted in working with Faculty in transforming learning materials into
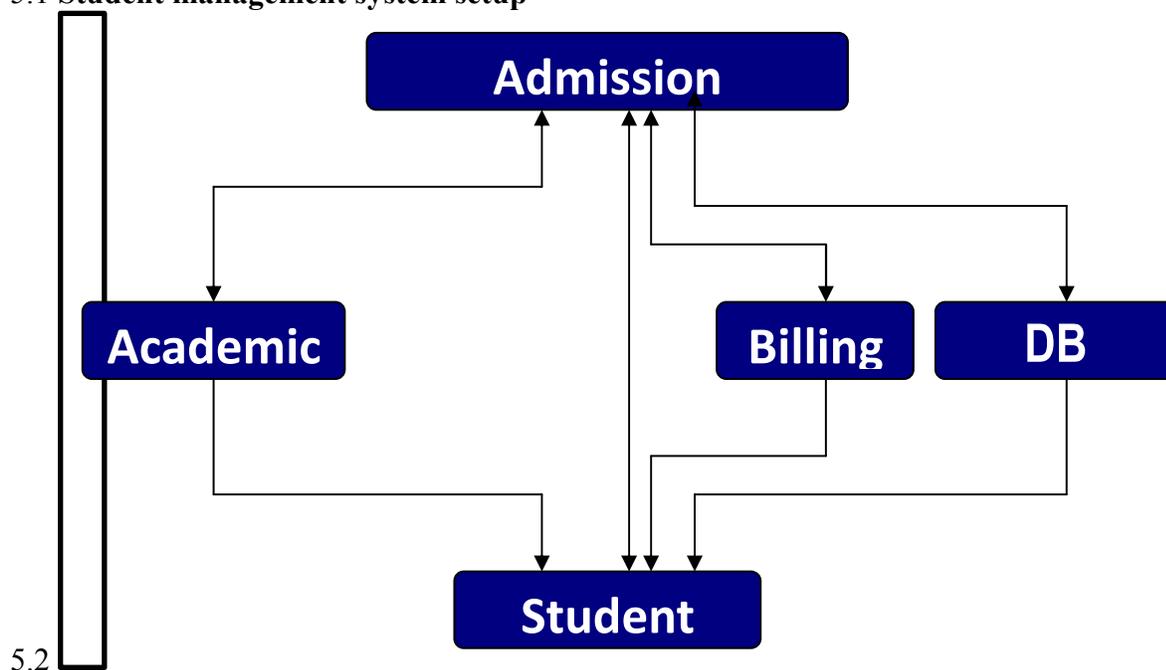
dynamic   visual   e-learning   resources.

Other international partners are also excited at the possibilities offered by the KCN CMS.

5.0 Student Management System

Apart from lecturers delivering content to students administration also had a requirement to manage the students from the administration part.

Student management system was created in house to assist in registration of students, financial recording, examination grades records, transcript generation, student accommodation management, and keeping student records.

5.1 Student management system setup

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                    ┌──────────────┐
                    │  Admission   │
                    └──────────────┘
        ┌──────────────┐   ┌─────────┐  ┌─────────┐
        │   Academic   │   │ Billing │  │   DB    │
        └──────────────┘   └─────────┘  └─────────┘
                    ┌──────────────┐
                    │   Student    │
                    └──────────────┘
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5.2

5.1.1 Admission

- Captures student demographic data (names, RegNo, Gender, address).
- Captures student photos
- Captures student's programme registration
- Print nominal roll report with registered students highlighted
- Search engine to retrieve by full name, single name, name key , full registration number, and registration number key
- Read and reply student messages

5.1.2 Academic

- Capture exam results (assignments, tests, examination, projects and practical marks)

- Prints class size, class roster (list of students registered to a course)
- Print Course based examination results
- Print student progressive reports (statements of examination results)
- Print student transcripts
- Excel files Imports
- Lecturer course allocation
- Publishing and un-publishing examination results
- Records student exam remarks

5.1.3 Billing

Integrates with ACCPAC accounting software and retrieves the following

- Captures student payments
- Captures student refund records
- Prints individual student payments reports
- Prints cohort payments reports

6.0 Conclusion

As MAREN is making an initiative in interconnecting the research and education institutions it is hoped that Institutions will start developing more and more e-resource initiatives so that when the network is completed, it shall be fully used and help increase access of local content within institutions. The curriculum management system at KCN shall benefit many research and education institutions in the sense that there is already massive electronic content online developed by lecturers at KCN just waiting to be accessed.

7.0 References

[1] R.L. Miller, Learning Benefits of Interactive Technologies, Multimedia and Videodisc Monitor, February 1990, p. 14.

[2] Division of Health Systems and Services Development Regional Office for Africa, National Health Workforce Observatories.