Improving teaching practical anatomy by use of audiovisual and information technology to enhance student learning at Kilimanjaro Christian Medical University College

Proposing team

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Specific aim

Human anatomy has been a core course for most medical and allied health curriculum. The traditional teaching method of cadaver dissection has been retained mostly for medical training in most Medical schools world over including Africa for centuries. In recent years, technology has greatly evolved creating vast possibilities for innovative approaches to improve the current method for enhanced learning outcomes while retaining the relevant anatomical knowledge, skills and attitude required for medical practice. The high demand for medical doctors in Tanzania has led to an increase in student enrolment at KCMUCo as in other Medical colleges. Unfortunately faculty and teaching facilities have not increased with this student number increase thereby challenging the quality of medical students being trained. Due to cultural and religious beliefs, cadavers are also not readily available.

This proposal aims to improve teaching in the anatomy laboratory by using audio visual and information technology to enhance student learning. Practical anatomy sessions will be archived on LCMS for revision purposes.
The impact of the Project

This project will:-

i. Partly tackle the challenges posed by large increment of student intake numbers.

ii. Partly address the shortage of cadavers for practical anatomy by providing an alternative possibility to cadaver dissection in learning.

iii. Develop a database of practical anatomy dissection sessions providing a useful teaching/learning and review resource by students and staff at any time and in any place as long as access is available.

Project outcomes

Installation of an audio-visual system in the anatomy dissection laboratory will improve the quality of training of medical students and therefore patient care as there will be:-

i. Enhanced/improved student/instructor learning interactions during practical class sessions.

ii. A database produced upon archiving of the practical anatomy sessions in the learning content management system (LCMS) that will accessible for re-use and revision purposes by students.

iii. Provision of easily accessible reference information for better understanding of the on-going dissections through LCMS.

iv. An extension of practical anatomy learning beyond the walls of the dissection laboratory through the spillover class.

v. Savings on the anatomy laboratory maintenance cost in terms of number of cadavers needed and embalming chemicals involved.

vi. Reduction to minimum the hassles of polluted fumes therefore making the laboratory environment conducive for students learning and staff working.
Monitoring and evaluation plan

Increase in student intake numbers has led to a change in teaching methodologies to maintain the quality of physicians. The importance and usefulness of the project purchases as well as the timely delivery of the practicums will be monitored by the M&E team through student and staff evaluation surveys. The impact of the purchase of this equipment though initially meant for just basic sciences will be felt by ALL the departments within the KCMU at large. M&E will assess the project impact on:-

i. The primary beneficiaries who are the MD1 &2 students.

ii. The secondary beneficiaries who are teaching staff as well as other health related students.

iii. Tertiary beneficiaries who are the Tanzanian people through improved patient care
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<thead>
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<th>Equipment</th>
<th>Quantity</th>
<th>Cost (US$)</th>
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**Budget justification**

Learning of Anatomy is a pre-requisite for any medical and allied curriculum. This project will improve the quality of delivery of the anatomy practicums through the installation of the audio visual aids and use of information technology.

**Pentium Tilt Zoom Cameras (PTZ) (2):**
These will capture the dissection images, one will be fixed to show the instructor dissection and the other will be mobile to engage the students in team based discussions learning from each other by seeing what other groups are doing.

**Pentium Tilt Zoom Accessories (2):**
These will support attachment of the PTZ cameras on the dissection tables

**Microphones (6)**
These will capture audio information from students at dissection tables

**Head Microphones (2)**
To facilitate instructor and assistant hands free audio discussions

**Screen Samsung UN32EH 500032-Inch 1080p 60Hz LED HDTV (6):**
To display the instructors dissection table to class as well as access information on LCMS during practicums.

**Screen Samsung UN50ES6100 50Inch 120Hz Slim LED HDTV (Black) (1):**
To display instructor dissection from the laboratory to student over flow class during a practical session

**Tilt Wall Mount Bracket for screens (6):**
These will be used for mounting the computers.

**Project Samsung SP-H03 Pico Projectors (2):**
These will be used for projecting the dissections in the laboratory.

**Elite Screens M120UWV2 Manual Projection Screen (120 inch 4:3 AR) (2)**
These will display dissections to larger groups of students out of the laboratory

**Computer Mac Pro G5 plus monitors (2)**
Both machines will be used for editing audio-visual information and documentation of project records both in the office and the laboratory.
**Creative Inspire Multimedia Speaker System (2)**

To deliver sound within the anatomy laboratory and the spillover class.

**Edirol V-8 8-Channel Video Mixer with Effects (2):**

These will be used to mix and edit produced videos for archiving quality practicums.

**Server Overland 8 TB Snap Server DX1 4 Bay NAS Server (2):**

These will avail learning videos over the internet.

**Cables, fixtures, plugs etc**

To support communication and fixing of the various components

Installation of the described audio visual system using information technology in the anatomy laboratory will maximize the use of limited teaching resources and enhance student learning.