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Blended Learning in Zambia Project

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Dr. Sandra Barteit, Gregory Malunga

Health in Zambia



low-income country
extreme poverty
strong population growth

difficult access to health infrastructure
in rural areas

only 67%
of health profession positions filled

Medical Licenciates (BSc Clinical Sciences)

Strengthening healthcare in rural areas



OVERVIEW

4 years of
studies

postgraduate (clinical officer)
2 years of studies

practice-oriented
2 years clinical rotation

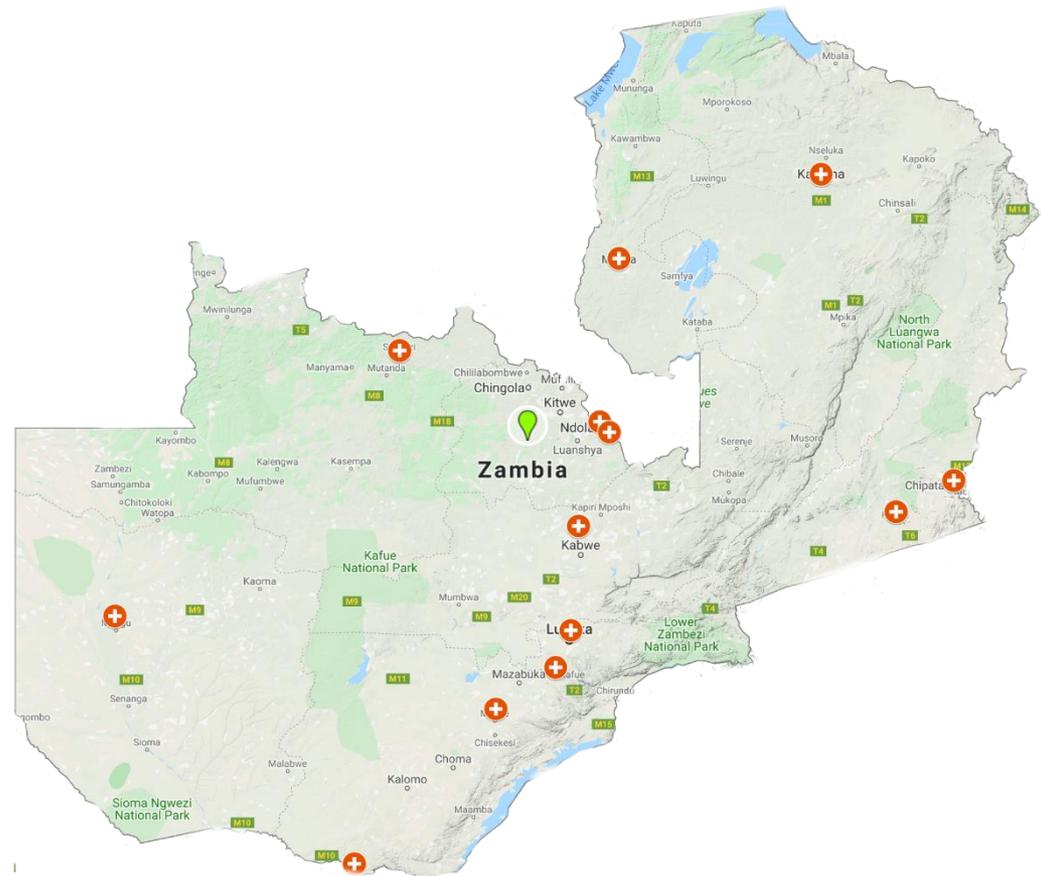
Focus: medical basic services
in rural areas

Shortcomings of medical studies

Practical-oriented phase

insufficient
quality and quantity
teaching/training materials
and resources

insufficient
training support



Map: Teaching hospitals of *Medical Licentiates (BSc Clinical Sciences)*

Blended Learning to strengthen medical education and healthcare

learning

surface, deep

learning contents

standardized, high quality

access

equal, central

offline availability

contents on tablets

scalability

to any number of users



Barteit et al. Computers Edu 2020, Barteit et al. Trop Med Int Health 2017

Capacity building - Lecturers



iSpring Software Training

Home / Courses / E-Learning Training / iSpring / General / LMMU-iSpring 9

EXIT ACTIVITY

LMMU-iSpring 9

Preview mode

The screenshot shows the iSpring software training interface. On the left is a dark grey 'OUTLINE' sidebar with a search bar and a list of seven items: '1. iSpring 9 Basic Training', '2. Introduction', '3. Adding Audio', '4. Adding Video', '5. Adding a Quiz', '6. Publish', and '7. Upload to Moodle'. The 'Introduction' item is highlighted in pink. The main area is a video player showing a man in a white shirt sitting at a desk with a laptop and a yellow mug. The video player has a progress bar at the bottom showing '2 / 8' and '00:22 / 00:45', along with 'PREV' and 'NEXT' buttons.

E-learning at LMMU - Contents

Virtual patients (interactive)

Static contents:

- Treatment guidelines
- presentations and scripts
- medical books
- Exam-preparatory materials

You find:

A 45 year old ill looking woman apparently not in severe pain or distress, she is alert, looks of normal to lower body weight, she has very pale conjunctiva and palms, is afebrile on touch, has no lymphadenopathy.

Her chest is clear, pulse rate 92/min, slightly feeble, heart sounds normal, no murmurs, abdomen soft, non tender, no organomegaly, all joints are free apart from the right ankle joint, pulses are present on both feet, the sensation is intact up to the distal lower leg, reduced on both feet, the right foot is swollen, there is an open approx. 2x3 cm ulcer which is covered with greyish tissue on the dorsum pedis. The plantar area is likewise swollen and shows another penetrating approx. thumbnail wide ulcer. No sphygmomanometer is available for BP measurement.



E-logbook to strengthen quality of medical practicum

The screenshot shows a web-based E-logbook interface. On the left is a navigation sidebar with a dark header containing a logo and the text '36-18-34-33 New Logbook Paediatrics'. The sidebar menu includes 'Cover', 'Logbook PAEDIATRICS', 'Cases', 'Patient - ABC', 'ABC - C. Neurology', 'ABC - E. Nephrology', 'Procedure - Lumbar puncture' (highlighted in green), 'Procedure - Cannulation', 'Generic skills - Communication', 'Tutorials & Theory classes', 'Summary', and 'Complete'. The main content area has a green header with 'CASES / PATIENT - ABC / Procedure - Lumbar puncture'. Below this, a question asks 'What was your role during the procedure?' with three radio button options: 'Observing', 'Assisting' (selected), and 'Performing under supervision'. A note states 'selected videos could be counted as observations'. The next section, 'In what did you assist?', features a list of tasks with checkboxes: 'Decide on the indication for the procedure', 'Explain the procedure to the patient', 'Prepare utensils/ tray', 'Do the hygienic procedures', 'Perform the procedure itself', 'Document the procedure', and 'Interpret the results'. The first three tasks are checked.

36-18-34-33 New Logbook Paediatrics

Cover

Logbook PAEDIATRICS

— Cases

— Patient - ABC

ABC - C. Neurology

ABC - E. Nephrology

Procedure - Lumbar puncture

Procedure - Cannulation

Generic skills - Communication

+ Tutorials & Theory classes

Summary

Complete

CASES / PATIENT - ABC / Procedure - Lumbar puncture

What was your role during the procedure?

selected videos could be counted as observations

Observing

Assisting

Performing under supervision

In what did you assist?

Decide on the indication for the procedure

Explain the procedure to the patient

Prepare utensils/ tray

Do the hygienic procedures

Perform the procedure itself

Document the procedure

Interpret the results

Capacity building - Students



Research and Evaluation



Research and Evaluation



Computers & Education

Volume 145, February 2020, 103726



Evaluation of e-learning for medical education in low- and middle-income countries: A systematic review

Sandra Barteit^a  , Dorota Guzek^a, Albrecht Jahn^a, Till Bärnighausen^{a, b, c}, Margarida Mendes Jorge^a, Florian Neuhann^a



Published on 09.10.19 in Vol 21, No 10 (2019): October

This paper is in the following e-collection/theme issue:

[Mobile Health \(mhealth\)](#) [mHealth in the Developing World/LMICs, Underserved Communities, and for Global Health](#)

Article Cited By (0) Tweetations (1) Metrics

Original Paper

Technology Acceptance and Information System Success of a Mobile Electronic Platform for Nonphysician Clinical Students in Zambia: Prospective, Nonrandomized Intervention Study

Sandra Barteit¹, MA  ; Florian Neuhann¹, MD  ; Till Bärnighausen^{1,2,3}, MSc, MD, ScD, PhD  ; Annel Bowa⁴, MSc  ;

Sigrid Wolter⁵, Dr rer nat  ; Hinson Siabwanta⁴, MSc  ; Albrecht Jahn¹, MSc, MD, PhD 

Heidelberg University Hospital | May 2021 | Dr. Sandra Barteit, Gregory Malunga

Article Cited By (3) Tweetations (3) Metrics

Original Paper

Perspectives of Nonphysician Clinical Students and Medical Lecturers on Tablet-Based Health Care Practice Support for Medical Education in Zambia, Africa: Qualitative Study

Sandra Barteit¹, MA  ; Florian Neuhann¹, MD  ; Till Bärnighausen^{1,2,3}, MSc, MD, ScD, PhD  ; Annel Bowa⁴, MSc  ;

Sigrid Lüders⁵, MD  ; Gregory Malunga⁴, MSc  ; Geoffrey Chileshe⁴, BSc  ; Clemence Marimo⁶, MD  ;

Albrecht Jahn¹, MSc, MD, PhD 

¹Heidelberg Institute of Global Health, Heidelberg, Germany

²Harvard TH Chan School of Public Health, Department of Global Health and Population, Boston, MA, United States

³Africa Health Research Institute (AHRI), KwaZulu-Natal, South Africa

⁴Chainama College of Health Sciences, Lusaka, Zambia

⁵SolidarMed, Lusaka, Zambia

⁶School of Medicine, University of Zambia, Lusaka, Zambia



Current foci of Blended Learning in Zambia project

- roll-out of **e-logbook** and evaluation
- medical **podcasts** (in cooperation with SolidarMed)
- **pediatric emergency training** (on-site training + dedicated online course)
- **new e-learning contents** (virtual patients) in alignment with curriculum:
 - COPD
 - appendicitis
 - paediatric nutritional care

Glimpse at outcomes so far ...

- over 4500 registered students
- 5 peer-reviewed publications
- over 300 tablets
- e-learning infrastructure in Zambia implemented
- 2 PhDs, 1 BSc, 2 MScs
- e-logbook for IM, OBS+GYN, Surgery, Paeds



A screenshot of the LMMU Blended / Elearning Platform interface. The header features the LMMU logo and the text "Levy Mwanawasa Medical University". Below the header, the main title "LMMU BLENDED / ELEARNING PLATFORM" is displayed in red. A navigation menu includes "Home", "Site administration", "Users", "Accounts", and "Browse list of users". The main content area shows "4574 Users" and a pagination control with a dropdown menu labeled "New filter" and a list of page numbers from 1 to 153, with "1" selected.