Leveraging learning technologies for improved workplace performance in Tanzanian health sector.

Linda Hegarty (Institute of Technology, Sligo)
Ellen Mkondya-Senkoro (Benjamin William Mkapa Foundation, Dar es Salaam)
Brian Mulligan (Institute of Technology, Sligo)
PURPOSE

This presentation will aim to summarize the findings from the exploratory work carried out to date, and their implications for developing and managing an e-Platform for health workers in Tanzania for improved workplace performance and quality of care.
Leveraging learning technologies for improved workplace performance in Tanzanian health sector.

- Introduction to health worker challenges in Tanzania
- Mobile technologies in Tanzania
- Purpose and description of research
- Findings of the research
- Key messages
United Republic of Tanzania

**Area:** 947,300 sq km

**Population (Including Zanzibar) (2016):** 55,156,000

**Life expectancy at birth (2010-2015) (females/males, years):** 65.6/62.6

*Source: United Nations Statistics Division*
Tanzania suffers from a severe shortage of health workers, currently meeting only 48% of its requirements.

32,036 (55%) health workers serve 75% of total population in rural areas

Source:
Electrification rate of Tanzania in 2015: 41%

- Source: Power System Master Plan 2016 (Update); United Republic of Tanzania Ministry of Energy and Minerals
**CPD: key to supporting health workers**

- **Breakdown of costs for training workshop**
  - Meals: 40.1 %
  - Accommodation: 20.2 %
  - Tuition fees: 10.2 %
  - Other costs incl. instruction and training facilities and field allowance: 29.5 %

Source
Tani K. et al., (2016) ‘Unit cost analysis of training and deploying paid community health workers in three rural districts of Tanzania’
https://goo.gl/tMIPBA

- **Health facility unstaffed/understaffed for days**
- **Relevance of course: health worker needs versus donor priorities**
### 2.3 Subscriptions to Mobile and Fixed Network

<table>
<thead>
<tr>
<th>NETWORK</th>
<th>OCTOBER</th>
<th>NOVEMBER</th>
<th>DECEMBER</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mobile Network</strong></td>
<td>40,344,933</td>
<td>40,432,044</td>
<td><strong>40,044,186</strong></td>
</tr>
<tr>
<td>TTCL</td>
<td>125,878</td>
<td>125,878</td>
<td>127,112</td>
</tr>
<tr>
<td>ZANTEL</td>
<td>2,396</td>
<td>2,446</td>
<td>2,485</td>
</tr>
<tr>
<td><strong>Fixed Network</strong></td>
<td>128,274</td>
<td>128,324</td>
<td><strong>129,597</strong></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>40,473,207</td>
<td>40,560,368</td>
<td>40,173,783</td>
</tr>
</tbody>
</table>

Quarterly Communications Statistics Report
October - December 2016
Source: Tanzania Communications Regulatory Authority
### Trends in Internet

#### 5.2 INTERNET SERVICES

**5.2a Estimated number of users by technology type**

<table>
<thead>
<tr>
<th>Type of Service</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixed Wireless</td>
<td>968,098</td>
<td>772,491</td>
<td>1,050,940</td>
<td>1,013,082</td>
<td>662,882</td>
<td>1,218,693</td>
</tr>
<tr>
<td>Mobile Wireless</td>
<td>3,665,880</td>
<td>6,031,323</td>
<td>7,493,823</td>
<td>11,320,031</td>
<td>16,280,043</td>
<td>18,014,368</td>
</tr>
<tr>
<td>Fixed Wired</td>
<td>877,450</td>
<td>712,098</td>
<td>781,503</td>
<td>854,198</td>
<td>319,698</td>
<td>629,474</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>5,311,218</strong></td>
<td><strong>7,520,878</strong></td>
<td><strong>9,312,272</strong></td>
<td><strong>11,217,311</strong></td>
<td><strong>17,263,523</strong></td>
<td><strong>19,862,525</strong></td>
</tr>
<tr>
<td><strong>Penetration</strong></td>
<td>12%</td>
<td>17%</td>
<td>21%</td>
<td>29%</td>
<td>34%</td>
<td>40%</td>
</tr>
</tbody>
</table>

#### Fig. 5.2a Trend of Internet Penetration

![Graph showing the trend of internet penetration from 2011 to 2016](image_url)

**Source:**
Tanzania Communications Regulatory Authority, 2016
- Benjamin Mkapa Foundation (BMF)
- Medical Association of Tanzania (MAT)
- Tanzania National Nurses Association (TANNA)
- Muhimbilli University of Health and Allied Sciences (MUHAS)
- Tanzania Training Centre for International Health (TTCIH)
e-learning Platform for health workers in Tanzania

✓ Accessible through PCs, tablets, and smartphones
✓ Provide courses for health workers

Where to start?
Build a platform or build a community?
Research

1. Mapping stakeholders & engaging in discussions
   (Synergies in health blog @ https://goo.gl/zl4hcX)

2. MSc in blended and online learning, including a dissertation
   ‘Exploring barriers and opportunities for using MOOCs for
   CPD in developing country contexts’
   (Digital dissertation @ https://goo.gl/v8fdmA)

3. EU-funded project (LoCoMotion) developing low-cost
   methodologies for MOOC development.
   (moocs4all.eu)
Key findings

1. An **e-learning** Platform for health workers is **needed**

2. **Link to other initiatives**

3. Courses/MOOCs: **relevant, localized**

4. **Digital** literacy and **learning literacy skills** building required

5. Mandatory CPD: Courses must contribute to **CPD compliance**

6. The e-Platform must become **locally-owned**
...Findings

<table>
<thead>
<tr>
<th>Perception of digital versions of CPD</th>
<th>Improving acquisition of new knowledge and skills (Question 1)</th>
<th>Promote positive attitudes in the workplace (Question 2)</th>
<th>Build coping strategies for changes in professional settings (Question 3)</th>
<th>Improve workplace performance (Question 4)</th>
<th>Overall Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>#</td>
<td>&lt; 4</td>
<td>4+</td>
<td>#</td>
<td>&lt; 4</td>
</tr>
<tr>
<td>Fully online MOOC – validated by universities or other educational body</td>
<td>44</td>
<td>5%</td>
<td>95%</td>
<td>42</td>
<td>14%</td>
</tr>
<tr>
<td>Fully online MOOC validated by professional council or professional association</td>
<td>44</td>
<td>9%</td>
<td>91%</td>
<td>42</td>
<td>14%</td>
</tr>
<tr>
<td>Fully online non-award bearing MOOC – based on interest and relevance to professional needs</td>
<td>44</td>
<td>11%</td>
<td>89%</td>
<td>49</td>
<td>14%</td>
</tr>
<tr>
<td>Webinars (live online classes) for training delivered through a MOOC</td>
<td>44</td>
<td>14%</td>
<td>86%</td>
<td>42</td>
<td>24%</td>
</tr>
<tr>
<td>Topic-specific MOOC discussion forums for specific professionals</td>
<td>11%</td>
<td>89%</td>
<td>42</td>
<td>21%</td>
<td>79%</td>
</tr>
</tbody>
</table>

Source: Hegarty, L. (2017). MSc Dissertation ‘Barriers and opportunities for using MOOCs for continuous professional development (CPD) in developing country contexts’
e-learning Platform for health workers in Tanzania

- Designed for mobile first with offline options
- Provide MOOCs for CPD credits
- Build a community of self-directed learners
- Facilitate national and international mentoring and coaching
Key messages

1. **Digital transformation** has already started in developing countries!

**Sustainable development Goals (SDGs)**
**Target 9c**
"significantly increase access to information and communications technology and strive to provide universal and affordable access to the internet in least developing countries by 2020". (United Nations, 2015).

2. Mobile learning the only option: more **inclusive** + lower **costs** + greater **scalability**

3. **Technology** is key – but CPD is still about **people**.

4. Changing systems is a **slow process**!
Thank you!
Asante Sana

Linda Hegarty lindah Hegarty@gmail.com