Using Digital Technology As An Educational Tool For Professional Development In Papua New Guinea: A Case Study “Reaching The Unreached”

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1. BACKGROUND

PROBLEM STATEMENT

- Despite, documented evidence that “smart phones” are being used in the delivery of health care and internet access throughout PNG.
- ... there are still many challenges that professionals face in rural remote setting in PNG, access to contextual relevant information, geographical disconnectedness, isolation, lack of educational material that can be used in all sectors of the communities, connection at a reasonable speed for problem solving to many basic needs some of which are life-saving. (Kitau et al, 2019 Unpublished)
2. RESEARCH QUESTION & GOAL

RESEARCH QUESTION

• How can we effectively and efficiently use Digital Technology to reach the unreached and achieve our professional development goal and the vision of the PNG National Health Plan 2011-2020 and PNG Vision 2050?

• How can we disseminate our research findings from conferences to other colleagues?

GOAL

• To use Digital technology to reach the unreached and achieve the Vision of NHP and Vision 2050.

• Specific Objectives:
  1. To train 23 trainers at the DPH at SMHS at UPNG.
  2. To mentor and support trainers to train Health Managers, teachers to use DT to other health workers at health facilities.
3. Digital Technology can Support Teachers and Managers to Achieve the Vision of the PNG National Health Plan 2011-2020 (NDoH 2011)
4. Digital Technology Can Help Teachers and Managers to Train and Support Health Professionals In Health Facilities in PNG (UPNG, SMHS, 2018)
5. Digital Technology can help Teachers and Managers to reach the unreached—the health facilities in both rural majority and urban disadvantaged. (NDoH 2011)

<table>
<thead>
<tr>
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<th>HP</th>
<th>DH</th>
<th>UC</th>
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<th>CHP</th>
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<td>31</td>
<td>53</td>
<td>96</td>
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<td>3</td>
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<td>46</td>
<td>176</td>
<td>16</td>
<td>265</td>
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<td>851</td>
<td>474 (55.7%) (45.3%)</td>
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<tr>
<td>Momase</td>
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<td>3</td>
<td>21</td>
<td>57</td>
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<td>182</td>
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<td>2</td>
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<td>45</td>
<td>78</td>
<td>8</td>
<td>152</td>
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<td>612</td>
<td>404 (66.0%) (34%)</td>
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<tr>
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<td>14</td>
<td>85</td>
<td>201</td>
<td>446</td>
<td>28</td>
<td>794</td>
<td>44.33</td>
<td>3120</td>
<td>1889 (60.5%) (39.5%)</td>
</tr>
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6. Challenges In Implementation

• Many challenges that professionals face in PNG.
• Access to contextual relevant information.
• Geographical disconnectedness and isolation for many health workers.
• Educational material that can be used in all sectors of the communities with a particular lack of context relevant.
• Connection at a reasonable speed.
• Problem solving to many basic needs.
• Some of which are life-saving.
• Only available via face to face communication or phone calls.
• Documented evidence that “smart phones” are being used in the delivery of health care throughout PNG.
7. Opportunities- Digital Solution

• We are proposing a digital solution for professional development.
• Called RACHEL PLUS.
• Currently used in 40 nations around the world.
• Similar challenges of people not being able to access resources.
• The resource is easy not difficult to manage, runs on a rechargeable battery, is accessible via its own “hotspot”, comes preloaded with a large amount of relevant resources, provides the ability to load context specific material in either text, audio or video format.
• With the use of this digital resource relevant, up to date material will be made available to people to have at the fingertips and continual professional development will be made possible.
8. HOW CAN TEACHERS AND MANAGERS DISSEMINATE WHAT THEY HAVE LEARNT? CONTINUING PROFESSIONAL DEVELOPMENT THROUGH ZOOM VIDEO CONFERENCE (JCU-UPNG-NDOH-WHO-PHAs- DHC-CHP-AP-VILLAGES)?
8.1. My Simple Story: VIDEO CONFERENCE (ZOOM) WITH JCU - AT SMHS UPNG.

1.1 SMHS Board Room (02/03/18)

1.2 Medical Library Audio Visual Room 29/03/18
8.2. Division of Public Health & CHRD (UPNG Collaboration)

2.1 Celebration - Mrs. Etu Buka Graduation from JCU CED (17/03/18)

Early Career Researchers Group 13/04/18
8.3. DISTRICT ROLL-OUT - KWIKILA HC, KTI, RIGO DISTRICT, CENTRAL PROVINCE

6.1 Piloting Tool at Kwikila HC, Rigo District Central Province (Tuesday 5th March, 2019)

6.2 Introducing ‘Rachel Plus’ eLibrary to Kwikila CHW Training Institute (Tuesday 5th March, 2019)
9. WHAT IS RACHEL PLUS?

- REMOTE ACCESS COMMUNITY HOTSPOT FOR EDUCATION AND LEARNING
9.1 Background

- World Possible is a non-profit organization based in California with a mission to connect offline learners to the world's knowledge.
- The lack of growth of Internet connectivity.
- Smartphones as game-changing enabler have transformed the way people can access the internet.
- How this changed the landscape and the way you view offline access.
- How these devices are impacting the future of educational resources.
- Our world pretty ripe with great ideas, but failed executions.
- Working through chapters on the ground in a number of countries, as well as in the US prison system.
- This model works.
- Exposing people to what is possible with technology, and letting them run with it.
- This technology gives a unique reach into the offline world.
- Create customized content in partnership with local entities, tailored for that country.
9.2 RACHEL Plus E- Library Content

- **Hesperian Health Guides**
  Easy to understand, practical, accurate, and heavily illustrated guides on health topics that for remote areas where access to medical personnel and facilities is limited.

- **MedlinePlus Medical Encyclopedia**
  More than 4,000 cross-referenced medical articles from the U.S. National Library of Medicine and the National Institutes of Health. Includes comprehensive illustrations and photographs.

- **Infonet-Biovision**
  Well organized and illustrated information on a wide range of agricultural, environmental, and health topics.

- **Practical Action**
  Well organized and illustrated information on a wide range of agricultural, environmental, and health topics.

- **GCF LearnFree.org**
  Hundreds of high-quality illustrated articles and videos focusing on technology, job training, reading, and math skills, produced by the Goodwill Community Foundation.

- **Wikipedia for Schools**
  This curated selection of articles from Wikipedia can be used offline by school children around the world. 6000 articles, 26 million words and 50,000 images make Wikipedia for Schools bigger than Harry Potter, the Lord of the Rings and the Chronicles of Narnia put together!

- **Great Books of the World**
  A searchable, categorized selection of over 400 of the most beloved and respected books from around the world, collected from Project Gutenberg.

- **African Storybook Project**
  These stories are in the 11 official languages of South Africa. These enjoyable stories will assist young children as they learn to read. Because the stories are in a language familiar to the children, as well as a language they are learning, the children will have fun practicing while they learn to love reading.

- **File Share**
  You can share files with other users by uploading them here.

- **Windows Applications**
  Parts of RACHEL require an up-to-date web browser. The Firefox link below will install a compatible web browser on Windows devices. You can download these applications to a Windows-based PC by right clicking on the application name below:

- **KA Lite Essentials**
  KA-Lite Essentials includes thousands of videos and exercises on math, science, and more - an incredible learning resource brought to you by the Khan Academy and The Foundation for Learning Equality.

- **Interactive World Map**
  Browse the world from the global to the local with this interactive and searchable world map from OpenStreetMaps and the XSCE project.

- **Wikivoyage**
  Worldwide travel guide with a wealth of information on destinations around the world. Make geography come alive! This module is provided by Kiwix.

- **Wiktionary**
  Wiktionary is a collaborative project to produce a free-content multilingual dictionary. It aims to describe all words of all languages using definitions and descriptions in English.

- **CK-12 Textbooks**
  High quality textbooks on STEM (Science, Technology, Engineering and Math) from ck12.org.

- **Music Theory**
  Comprehensive music theory lessons and exercises to begin your journey into the realm of music.
10. Using Digital Technology in Seminar and Workshops at the SMHS (Offline and online.

Seminar for staff of the SMHS UPNG Old Lecture Theatre (Wednesday)

HINARI RESEARCH4LIFE TRAINING FOR STAFF AT THE SMHS LIBRARY AT THE SMHS, UPNG (11-13 JUNE 2019)
10.1 Using RACHEL Plus and HINARI Research4Life

HINARI RESEARCH4LIFE TRAINING WITH RACHEL PLUS FOR NDOH STAFF (Thursday 20/06/19) WHO CONFERENCE ROOM

MBBS 4TH YEAR STUDENTS USING RACHEL PLUS IN TUTORIAL ROOM 2, DPH, SMHS, UPNG (Monday 16th June 2019)
10.2 Using RACHEL PLUS – INTERACTIVE LEARNING

GDPH Students Using Rachel Plus- Interactive Learning

GDPH Students Using Rachel Plus
Summary

• RACHEL Plus works and the case study is part of the professional development program for teachers and students at the SMHS, UPNG. It has not been evaluated yet.

• We plan to take it to 2 districts in Central Province this month to trail it at the Kwikila Training Institute and Veifa’a CHW School.

• Need some funds to implement this project.

Recommendation:

• Extend the project to other Colleges and Schools in PNG.

• Collaborate with other training institutions and community groups.
12. REFERENCES

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- "The Season of Giving Back". The Huffington Post.
- "Using Agile Approaches to Improve Teaching, Learning and Education in Developing Nations". InfoQ.
- "RACHEL-PI uses Raspberry Pi to bring internet to remote areas #piday # raspberrypi @Raspberry_Pi". Adafruit Industries - Makers, hackers, artists, designers and engineers!.
- "Can robotics change the future of a nation?". BBC News.
- "Giving the gift of technology". CNN. 16 January 2012.
- External links
- Official website
- Categories: Educational technology non-profitsNon-profit organizations based in Los Angeles
- Wikimedia Blog
- COMMUNITYWIKIPEDIAFOUNDATIONTECHNOLOGY
TENIKIU BADA HEREＡ!

- ANY QUESTIONS???
- FOR MORE INFORMATION:
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- Visit the website at www.worldpossible.org to read more about RACHEL, ask questions and share ideas in our community forums, and purchase RACHEL from our online-store.