Capacity Building through Education, Research and Collaboration: AFRICA BUILD, an eHealth Case Study

Maximo Ramirez Robles¹, Brecht Ingelbeen², Richmond Aryeetey³, Adama Ouattara⁴, Jitendra Khanna⁵, Rafael Ruiz de Castañeda⁶, Moataz Ahmed AbdelGhaffar⁷, Ana Jiménez Castellanos¹, Carlos Kiyan², Victor Maojo¹, Lutgarde Lynen², Maria Zolfo²

¹Biomedical Informatics Group, Facultad de Informática, Departamento de Inteligencia Artificial, Universidad Politécnica de Madrid, Campus de Montegancedo, Madrid, 28660, Spain
²Institute of Tropical Medicine, Nationalestraat 155, Antwerp, 2000, Belgium
³University of Ghana School of Public Health, Box LG 13 Legon, Accra, Ghana
⁴Faculté de Médecine et d'OdontoStomatologie (FMPOS), Université de Bamako, Bamako, Mali
⁵WHO Department of Reproductive Health and Research, World Health Organization, Avenue Appia 20, CH-1211 Geneva 27, Switzerland
⁶Department of Radiology and Medical Informatics, University of Geneva, Geneva, Switzerland
⁷Information Technology Institute-MCIT, Egypt

mramirez@infomed.dia.fi.upm.es

AFRICA BUILD (AB) is a Coordination Action project under the 7th European Framework Programme having the aim of improving the capacities for health research and education in Africa through Information and Communication Technologies (ICT). This project, started in 2012, has promoted health research, education and evidence-based practice in Africa through the creation of centers of excellence, by using ICT, “know-how”, eLearning and knowledge sharing, through Web-enabled virtual communities.

Partners in the project are:
1. Universidad Politecnica de Madrid;
2. Ministry of Communications and Information Technology (CIT), Egypt;
3. Faculté de Médecine de Pharmacie et d’Odonto Stomatologie (FMPOS) de Bamako, Mali;
4. University of Geneva; 5. Institute of Tropical Medicine (ITM), Antwerp (Belgium); 
6. World Health Organization, Department of Reproductive Health and Research; 
7. Faculty of Medicine and Biomedical Sciences (FMSB) University of Yaoundé; 
8. University of Ghana, School of Public Health

Under the Work package 3, the AB project has been developing an innovative Web portal: this user-friendly, integrated, customizable, multi-lingual interface provides all the technical support needed for the educational activities of the consortium. Thanks to the potential of the Social and Semantic Web (Web 2.0 and Web 3.0 respectively) techniques, this portal supports networking and access to a wide variety of open-source informatics tools for health. It grants as well the generation of new virtual communities of health researchers, biomedical informatics developers and users, facilitating the exchanges of methods, tools, knowledge and expertise with EC groups and international matter-experts. With the final aim of embedding distance learning and remote ICT expertise tools in the AB portal, several facilities were included in this portal, such as: a) a social kernel, powered by Elgg — which is a social networking engine, delivering the building blocks that enable businesses, schools, universities and associations to create their own fully-featured social networks — to foster the virtual discovery and collaboration of African researchers; b) a method to plug-in Moodle instances to make their courses immediately accessible and reuse them in a social context; c) a research interface, called the eLaboratory — which is a Widget-based environment — that integrates different research resources as PubMed Central, BioMed Central, AJOL, WHO news, a Research Projects GIS and an African Educational catalog, among others; d) a Mobility Brokerage Service to find training opportunities, jobs or mobility stays. Moreover the distance learning courses and the additional tutorials developed for educational support to the African partners were embedded in this AB Web portal, using a very user-friendly software already tested in Africa and designed by the RAFT network (DUDAL software) to work in “infrastructure-deficient environments”, in particular when faced with low-bandwidth and unstable internet connectivity. AFRICA BUILD has created networks and virtual communities in health research and biomedical informatics, where professionals could exchange all kind of material and knowledge.

The skills building workshop will show all potentialities and experiences gained through this portal, from the ICT profile to the benefitting educational role to health researchers and other health care professionals
and biomedical informatics developers, deployed in resource-limited and/or North countries, with the following schedule:

1. A general overview of AB project.

2. Technical discussion:
   - Introduction technical aspects and architecture of ABP;
   - Specific experiences illustrated with technical cases and practical aspects;
   - DUDAL webcasting: technical issues;
   - Interactive discussion.

3. Closing - looking at the next steps for development of the ABP, and lessons learnt from the uptake of the ABP and courses by health researchers.