Kenyatta University and Syracuse University*: Africa-U.S. Higher Education Initiative Partnership

Building Capacity Through Quality Teacher Preparation

Resource packet developed from

Workshop on Integrating Technology
Tuesday, January 10, 2012
9:00 am – 1:00 pm
National ICT Innovation and Integration Centre

Resource Packet 12-01-KUSU

Kenyatta University Vision and Mission

Kenyatta University's *vision* is "to be a dynamic, an inclusive and a competitive centre of excellence in teaching, learning, research and service to humanity." The University's *mission* is "to provide quality education and training, promote scholarship, service, innovation and creativity and inculcate moral values for sustainable individual and societal development."

Kenyatta University-Syracuse University Partnership

The Kenyatta University-Syracuse University Partnership is funded by the United States Agency for International Development (USAID), which through a grant to Higher Education for Development (HED), funded 11 innovative new partnerships in 2011 between 22 universities in Africa and the United States to address issues in the areas of (1) agriculture, environment and natural resources, (2) health, (3) science and technology, (4) engineering, (5) education and teacher training/preparation, and (6) business, management and economics in Africa. These resulted from the Africa-U.S. Higher Education Initiative, a collaborative effort started in 2007 by a number of higher education associations and other organizations and led by the Association of Public and Land-grant Universities (A·P·L·U) to advocate for increased engagement in African higher education capacity development.

The Schools of Education of Kenyatta University (KU) and Syracuse University (SU) have had an institutional linkage since the year 2000 and have collaborated in research projects, mentoring doctoral students, and hosting international conferences. Additionally, a number of students who graduated from Kenyatta University have earned graduate degrees (M.S. or Ph.D.) at Syracuse University in teacher education.

The overall objective of the Kenyatta University and Syracuse University partnership is to build capacity at the secondary school level through quality teacher preparation across the span of teacher education—from preservice teacher preparation, to novice teacher induction, to practicing teacher continual growth— through enhancing the capacity of Kenyatta University in its faculty, educational programs, research, and engagement with stakeholders that will result in improved secondary education in Kenya. Along with this objective, we have a long-term goal of developing and establishing a model for teacher preparation and education that we will share with other universities in Kenya and other East African countries.

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Websites:
- http://soeweb.syr.edu/centers_institutes/Kenya_partnership_projects/default.aspx

- http://cuseinkenya.syr.edu/

Background for the Workshop

As part of the KU-SU partnership activities, we conducted a survey of all of the Department of Educational Communication and Technology faculty members to gain baseline data on a variety of teaching and learning issues; included among these issues were class size, supporting all learners, and integrating technology into teaching. Twenty-one faculty members completed the survey. Around 80% of the respondents stated that they see the use of technology as essential in teaching their units, and more than 83% of the respondents would like assistance in integrating technology into their teaching and in preparing teachers to integrate technology.

Additionally, another one of our project activities was to collect data from Kenyatta University graduate teachers, both novice (0-3 years of teaching experience) and experienced (more than 3 years of teaching experience). We collected data from a national sample of 100 teachers, 50 novice and 50 experienced. Sizeable percentages—74% of novice teachers and 94% of experienced teachers—answered "No" to the question "Did the KU TE program prepare you adequately to use ICT in your teaching?" Due to the response of faculty members and graduate teachers through the questionnaire data related to this issue, we chose to address integrating technology for our third workshop sponsored through the Kenyatta University-Syracuse University partnership.

Participants

Ms. Hellen Amunga, Prof. Henry Ayot, Dr. Adelheid Bwire, Prof. Agnes Gathumbi, Ms. Mary Gikonyo, Dr. Ndichu Gitau, Mr. Patrick Jumba, Mr. Vincent Kawoya, Dr. David Khatete, Dr. Mueni Kiio, Dr. John Kimenia, Mr. Robert Kimotho, Prof. Joanna Masingila, Dr. John Maundu, Dr. Marguerite Miheso-O'Connor, Ms. Florence Miima, Mr. Harrison Mulwa, Ms. Beatrice Murila, Dr. Mary Nasibi, Dr. Sophie Ndethiu, Ms. Doris Njoka, Dr. Moses Ochanji, Dr. Samson Ondigi, Dr. Karen Oyiengo, Dr. Jeff Rozelle, Ms. Inviolata Sore, Dr. Nicholas Twoli, Ms. Agnes Wanjau

Report of Workshop Activities

We worked together with the team from the National ICT Innovation and Integration Centre (NI^{3}C) to plan the workshop. The team from NI^{3}C led the workshop, which consisted of (a) a tour of the facility and a brief on the NI^{3}C mandate, (b) introductions and opening remarks concerning the objective of the workshop, (c) demonstration of equipment and resources, (d) a discussion of available ICT resources for teaching and learning and hands-on experience, and (e) a discussion of potential ways of preparing teachers to integrate ICT in teaching and learning. The workshop ended with a discussion of the way forward.

The slogan of the NI3C is "inspire, create and transform education". The vision of the centre is to be "a leading center in promoting sharing of best practices and success stories in the use of modern tools in teaching and learning." The centre's mission is "to collect, test and share ICT innovations and harness emerging technologies for integration in all aspects of education (teaching, learning and management)."

The policy and Ministry of Education strategies are to: (a) establish an education, innovation and technology centre that will maintain a database for emerging ICT technologies, inventory for costs, suppliers and appropriate use, and (b) establish model institutions that will be used to demonstrate integration of ICT to teaching and learning. From a sessional paper the mandate has come to create partnerships that will facilitate greater dissemination of ICT services to rural areas.

The general objectives of the centre are to be a national centre of excellence to identify and drive ICT innovations and their integration in all aspects of education. Pedagogic objectives are that

aspects of ICT integration will be demonstrated and tested before use by teachers, students, education managers and others. The centre will offer opportunities for new technologies to be tested and demonstrated before dissemination.

The centre will work closely with all willing stakeholders and partners; KESI, CEMASTEA, KIE, KISE, TSC, VVOB, Microsoft, Intel, Cisco, Safaricom, USAID, Barclays, KDN, Telkom are among the partners thus far.

The centre's specific objectives are to (a) develop and/or demonstrate the application of ICT technologies, including new ones, and new pedagogic/didactic aspects of ICT in learning, teaching and management, (b) develop and showcase different solutions and scenarios in the deployment of ICT integration at the school level, (c) act as the testing ground for "ICT innovations and integration" activities, ideas and experiments for use by teachers and learners, and (d) provide advice and support to schools and field offices in their efforts to develop and implement ICT-driven programme activities and integration processes.

The centre has (a) a large 40-seater computer laboratory, (b) two smaller 10 to 16-seater computer laboratories, (c) a Help and Support Centre section (d) a recreation-cafeteria area for learners, teachers and visitors, (e) an open office room for showcasing and demonstrating various emerging modern technologies for teaching and training, (f) a small resource centre room, and (g) a small meeting room/boardroom.

Various roles of NI^{3}C are in (a) collecting, document and sharing ICT in education best practices/success stories, (b) testing and recommending educational solutions/digital materials, (c) undertaking/facilitating ICT integration in education training, (d) facilitating continuous improvements of education portal technical features in liaison with moderators (http://www.elimuportal.net), (e) being the national helpdesk for educational institutions, including Front Office Services, on ICT issues, (f) participating in ICT integration meetings, activities and assignments, (g) incubating ICT education projects/innovations, (h) testing new pedagogical concepts and methodologies in relation to ICT (i.e., how to use ICT in the classroom), (i) interacting widely with stakeholders on ICT technical and educational issues to produce continuous innovations for the education sector, in liaison with other units, (j) researching, designing, developing and promoting emerging technologies on ICT integration in education, (k) building capacity at higher levels of ICT integration (knowledge deepening and creation), and (l) advising senior management on new innovations and technologies.

Stakeholders for the NI^{3}C are educational institutions, Ministries, SAGAs, teachers, students, parents, corporate institutions, NGOs, community-based organizations and faith-based organizations. The sustainability of the NI^{3}C will come through membership contributions—both individual and corporate, subsidized service levies, and grants through government, corporate and development partners. Types of cooperation with stakeholders include financial, technical expertise, advisory, materials and development, personnel support (certain limited activities, part-time, full-time), sponsoring of certain activities, capacity building (organizing training sessions, workshops, seminars), and any other relevant contributions.

Two ICT champion teachers shared lesson ideas with our group. A business teacher showed us a PowerPoint on the SMART Board of different type of office settings that she uses in her business studies classes to allow students to see various office settings. A biology teacher showed us a video of a larvae changing to a pupa. He also demonstrated some things on the SMART Board using the SMART Board software. Some of these things included showing how to use the SMART Board pen and examples of the illustrations available in the software, such as breathing and resuscitation, and using a compass and ruler.

Mr. Ogwel, from CEMESTEA, demonstrated a video from Khan Academy and the use of Camtasia Recorder as a way of recording notes over media that can then be played in class. Voice recording can be put in the recording as well as written notes.

Mr. Temba from ICT for Education (ICT4E) from the Ministry of Education spoke of the importance of Kenyatta University and other universities in preparing teachers who are able to integrate technology into teaching and learning. He also explained how the ICT champion program came about. The ICT champions have been tasked with two jobs—(1) to check and authorize the purchase of ICT equipment and make sure it is the right kind of equipment, and (2) teach their peers how to integrate technology into teaching in a way that allows teachers to ask questions without fear and to be learners without anxiety. The ICT champions work with teachers after school hours, on weekends and during school holidays, since the champions are full-time teachers.

Several suggestions came out during the discussion. One was for the Ministry of Education to think about how mobile phones can be used in classrooms to promote student learning. Another suggestion was for the Ministry of Education to collaborate with universities, starting with Kenyatta University.

Way Forward
The following ideas were generated during the discussion of the way forward:
• Preparing of preservice and inservice teachers to integrate technology should continue.
• There should be a sub-committee that is tasked with creating a plan for future training of Department of Educational Communication and Technology faculty members. The sub-committee will be comprised of: Dr. Samson Ondigi, Dr. David Khatete (KU contact person), Dr. Marguerite Miheso-O'Connor, Dr. Adelheid Bwire, Prof. Joanna Masingila, Dr. John Maundu, Mr. A. Gitonga, Mr. Kazito Makoba, Mr. John Oyuga (convener). In Mr. Oyuga's absence, Mr. Kazito Makoba will be the contact.

Group Photo of Workshop Participants at NI^{3}C

Free, Online Resources for Secondary School Teaching and Learning

- *Mathematics and Science Simulations*: https://phet.colorado.edu/
  "Fun, interactive, research-based simulations of physical phenomena from the PhET project at the University of Colorado." You register for free and then you have access to the simulations. You can play them online or download them to a computer.

- *Design Mate*: http://www.designmate.com
  Image and video resources for biology, chemistry and physics

- *Tour the Solar System*: http://www.pbs.org/wgbh/nova/space/tour-solar-system.html
  Interactive model of the solar system

- *Khan Academy*: http://www.khanacademy.org/
  "With a library of over 2,600 videos covering everything from arithmetic to physics, finance, and history, and 204 practice exercises, we're on a mission to help you learn what you want, when you want, at your own pace." The videos are hosted on YouTube, are free and can be downloaded.

- *YouTube for Teachers*: http://www.youtube.com/Teachers?gl=US&user=Teachers
  Information and assistance in accessing and using videos from YouTube in teaching

- *Federal Resources for Teaching Excellence*: http://free.ed.gov/
  This site has hundreds, and maybe thousands, of links to websites in a wide variety of subject areas: Art and Music, Health and Physical Education, History and Social Studies, Language Arts, Mathematics and Science.

- *Kiswahili Teaching Resources*
  http://www.kiswahilitoronto.ca/resources.html
  http://www.glcom.com/cyberswahili/swahili.htm
  http://www.transparent.com/learn-swahili/

- *Foreign Language Teaching Resources*
  http://webgerman.com/languages/
  http://www.transparent.com/language-resources/languages.html
  http://www.cloudnet.com/~edrbsass/edwor.htm

- *Grade Management Software*
  http://www.thinkwave.com/
  http://www.classroomwindows.com/
  http://gradebookportal.com/web_based_gradebook_software.html

- *Hot Potatoes*: http://hotpot.uvic.ca/
  "The *Hot Potatoes* suite includes six applications, enabling you to create interactive multiple-choice, short-answer, jumbled-sentence, crossword, matching/ordering and gap-fill exercises for the World Wide Web. Hot Potatoes is freeware, and you may use it for any purpose or project you like."

- *Teachers TV*: http://www.education.gov.uk/schools/toolsandinitiatives/teacherstv
  A site with videos of, by and for teachers

- *SmartBrief on EdTech*: https://www.smartbrief.com/edtech/index.jsp

"Sign up for a daily e-mail news briefing specifically designed for education stakeholders with an interest in the education technology world."

- ***IRIS Center for Training Enhancements***: http://www.iriscenter.com
A source of free, online resources to use in preparing teachers to support all learners