



Juliet Tembe, a UBC Education PhD graduate, introduces computers to teachers in rural Uganda.

Ugandan students advance digital literacy

By SEAN SULLIVAN

In 2008, Sam Andema made a difficult decision: Saying goodbye to his wife and two young children, he left his native Uganda for a master's program at UBC that he hopes will allow him to help revolutionize digital literacy in East Africa.

He's now part of an ambitious project in the Faculty of Education that's helping spread technological training in East Africa while developing new strategies for Canadian educators.

"Uganda is on the move to development," said Andema. "The country has articulated its

vision and mission to become a knowledge-based society, and one of the tools to achieve that is modern technology."

Professors Bonny Norton and Maureen Kendrick of the UBC Department of Language and Literacy Education have undertaken research in Uganda over the past six years.

One of the goals of their program is to train highly qualified people in East African countries, leading to a new generation with the skills to access, understand, evaluate and create information using digital technology.

"We don't just parachute into places, take a few pictures, do

a few interviews and leave," Norton said. "We've established a very strong network because people see we want sustainability." This network includes a virtual network, with UBC PhD student Lauryn Oates as webmaster, available online at www.renafrica.org.

"In conversations with teacher educators, we ask: What challenges do they face? How can we help them overcome their challenges? That becomes a foundation for our work," Kendrick said.

The research program pairs theoretical work in learning,

"People are learning the skills of searching and browsing, developing those initial talents so as technology becomes more accessible, the transition to that knowledge-based economy is easier," she said.

Another project, conducted last month by UBC Education PhD graduate Juliet Tembe, will train rural teachers – some of whom have never seen a computer – in the basics of using a computer and analyzing information from online resources. Like Andema, Tembe is a Ugandan who studied at UBC.

The projects are part of helping Uganda in its goal to become a regional leader in digital literacy.

development and education with hands-on work in rural communities. From the researchers, one message is clear: understanding technology is key to literacy in the 21st century.

"Definitions of literacy are rapidly changing globally," Kendrick said. "What it means to be literate now has everything to do with digital technology. Whether you're in rural Uganda or whether you're in Vancouver, there's a global conversation that people want to be a part of."

The eGranary Digital Library is one important example. Hard drives stocked with tens of thousands of books, journals and reference websites such as Wikipedia connect to a local area network and provide a self-contained "Internet in a box" in areas without web access. It's an effort to "democratize learning," said Norton.

The projects are all part of helping Uganda in its goal to become a regional leader in digital literacy, Andema said.

"The trickle-down effect allows the students to leave school with the ability to access information, to process information and to articulate their own ideas and knowledge," he said.

The partnerships also allow B.C. educators to link with classrooms in East Africa and learn from post-graduate students like Andema.

As the number of refugee students from places like Rwanda, Somalia, and Afghanistan grows, Canadian teachers want to learn methods that are familiar to the students, said Prof. Margaret Early, who recently joined the research team.

"It's not a one-way street," she said. "Teachers here are really desperate to adapt their teaching

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improve water quality but potentially generate economic and humanitarian benefits.

Mohseni and four other UBC researchers – Pierre Bérubé, David Wilkinson, Elod Gyenge and Rehan Sadiq – will investigate the feasibility of new and existing technologies to be used in rural areas.

Ultraviolet light photocatalysis – the use of UV light to eliminate contaminants – for example, has been explored as an effective option for water treatment but remains too costly for large communities. Smaller-scale versions that incorporate new technologies, however, could deliver desired results for small, rural communities. Mohseni and colleagues will be looking at ways to utilize sunlight, LEDs and special coatings for photoreactors to overcome some of the biggest obstacles in advancing this technology.

"We plan to bring the technologies past not only the initial proof of concept, but also the on-site validation stage," says Mohseni. "That is, we will evaluate the technologies on-site using real water and operating conditions. This would make the technologies ready for adoption and implementation by industry and small communities."

In addition to technological challenges, small and rural communities also face unique social, economical and governance barriers, Mohseni adds. "With RES'EAU,

we're bringing together a multidisciplinary team of experts who have already earned a reputation throughout the water research community for putting small rural communities first."

"We simply cannot afford to allow the existing challenges to exclude millions of our citizens from access to a vital requirement for their survival and advancement," says Mohseni. "All Canadians have the right to easily access clean water, regardless of where they live." **R**

strategies. We can't take Western notions and expect them to just work. We have to collaborate with teachers to develop new pedagogies."

The East African program is still facing many challenges: a country's poverty, frequent power outages and limited Internet access can pose problems for the most basic training. As well, cultural and social traditions mean teachers, mostly women, have limited time to pursue outside training.

"Many don't have time to concentrate on professional projects because they have to make ends meet," Andema said. "They have to survive."

With plans to spend the upcoming summer at home with family, Andema sees his graduate studies at UBC as his chance to help lead the development of digital literacy in his home country.

"When the opportunity came, I couldn't just let it pass by," he said. "It was the opportunity I had been yearning for." **R**

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