

Devices Deliver Learning in Africa - Jigsaw Activity

Instructions:

Firstly, the teacher will read out the first page of the article titled "Devices Deliver Learning in Africa" and discuss the topic and main idea with you.

Then, divide into 4 small groups and your teacher will give you one section of the remaining article. In your group, you have 5-15 minutes to read then discuss the main ideas you have found and how they relate to the first page your teacher has just read.

After discussion in your group, you will rotate so that one person from each of the other groups is with you. In your new group, discuss the section of the article you have and the ideas in it.

How does it relate to the information that other students have? What do you think about this idea and why?

<https://www.dropbox.com/home/Direct%20Entry/Teacher%20Resources/Block%20A/Week%204/Social%20Justice>

Source:

[Davis, MR 2010, 'Devices Deliver Learning in Africa', *Education Week*, vol. 29, no. 26, pp. 32-33.](#)

Adapted for the Direct Entry Course at Central Queensland University by Scott Maxwell

Devices Deliver Learning in Africa

Michelle R. Davis

Educators are finding innovative ways to bring education to students in remote areas using cell phones, laptops, and MP3 players

School-age children across Africa often don't have access to a formal education. They may live in remote rural areas or in violence-plagued regions too dangerous for teachers to visit. Others can't spend a full day in the classroom: They have to work or are heading households left without adults because of the ravages of AIDS.

But educators are finding increasingly innovative ways to bring education to such students in various countries in Africa, using mobile technologies to deliver curricula in ways that go beyond what many school districts are doing with portable devices in the United States.

Cell phones, laptop computers, MP3 players, and even solar-powered radios are all being used creatively both to bring education to students and help teachers improve their own skills.

Areas of Africa are "ripe for the use of mobile technology, even more so than in the U.S. because technology—particularly mobile-phone technology—leapfrogs a frayed and ineffective land-line system," says Matt Keller, the director of global advocacy for the non-profit One Laptop Per Child initiative based in Cambridge, Mass.

"It can also leapfrog a frayed and ineffective education system," he says. "Technology will take this generation of kids to a level that is unprecedented there, in terms of thinking critically and analytically."

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Group 1 - Cell phone Use Growing

The use of cell phones has been particularly prevalent in many African countries throughout the general population. According to a 2009 report issued by the United Nations-affiliated International Telecommunications Union, based in Geneva, 28 percent of Africans now have a mobile-phone subscription, and those phones are playing vital roles in everything from Web-based mobile banking to health education. Africa, which had a 2 percent subscriber rate in 2000, is the continent with the fastest growth in cell phone use, the ITU reports. So in some countries, it wasn't a big leap to take that technology, owned by even some of the poorest citizens, and direct its power toward education.

In Mali, sub-Saharan Africa's sixth-largest country, with a population of more than 12 million, 10,000 schools are spread over what is often desolate land, says Rebecca Rhodes, the deputy director for student learning for the country's Road to Reading program, implemented by the Boston-based Education Development Center, a global non-profit organization. The program is part of a five-year \$30 million reform plan funded the U.S. Agency for International Development.

Rhodes says cell phone use in Mali is widespread, but it's nearly impossible to visit the often-isolated schools. As part of the Road to Reading program, lesson plans are posted on a blog site, and teachers use their own cell phones to access the Internet for online curricula to use in their classrooms. The EDC also asks the teachers to provide feedback on the lessons by responding to a text-message survey.

There have been roadblocks, however, Rhodes says. Though many people in Mali are comfortable using cell phones, many others are unaware the phones can access the Internet. In fact, Rhodes says, most people in Mali don't know the Internet exists. Training on its use and how to download lesson plans has been critical, she says.

Currently, the Mali cell phone program reaches 500 schools, but soon it will go nationwide. The EDC is also seeking to improve data collection and analyze the information. In addition, the group is looking beyond lesson plans toward the possibility of posting sample tests for teachers to download or to provide standard criteria for teacher evaluations.

"We have certain aspects of education here that are driving us to think creatively," Rhodes says.

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Group 2 - Downloading Educational Games

A variety of other projects involving cell phones are fanning out across the continent.

In March, the Washington-based World Bank Institute launched a new type of problem-solving video game called Evoke, which is designed to empower young people in Africa to come up with creative solutions to social problems.

Students can play the game by accessing the Web, typically through a cell phone or laptop. Students in South Africa can also sign up to receive weekly text bursts updating them on the latest storyline or mission. Those playing the game may collect videos or photos with their cell phones and can submit them using mobile e-mail, according to the game's blog.

Players are faced with such problems as environmental degradation, lack of food and water, and poverty and violence and are challenged to find ways to solve them. The game ends May 12, and top players who complete 10 game challenges will earn certification as Evoke social innovators, plus a chance at earning online mentorships, seed funding for new ventures, travel scholarships, and a trip to Washington.

The Academy for Educational Development has developed software currently being used in Africa that can use cell phones to survey educators, says Kurt D. Moses, the vice president and director of the systems-services center at the Washington-based AED, a non-profit organization working on health, education, and social issues around the world. The system is used to survey school headmasters, with multiple-choice questions and text-message responses, for example, Moses says.

"In education, there's a history in many of the developing countries of getting national information once a year," he says. The traditional battle has been to get that information in a timely way so it's not obsolete."

But the system has been beneficial in other ways, too, Moses says. For example, ministries of education in Africa often hire young women as teachers. But when the women discover they've been posted to a rural school, some never show up at the schoolhouse. And because it's an isolated outpost, it may take months or years for the government to realize students are still without a teacher, Moses says.

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Group 3 - Turning On Radios and iPods

A number of factors have coalesced in Africa making it ready for the use of mobile technology for education, says Robert Spielvogel, the chief technology officer at the EDC. With huge numbers of children lacking any kind of formal education, many ministries of education are focusing on the problem.

"There's a built-in enormous need, and economically there's almost no way in a timely fashion that enough schools can be built or teachers found," Spielvogel says. "There's an openness here because there's a sense of crisis that you don't see in the U.S."

In addition, he says, there's a lack of such infrastructure as telephone land lines or Internet wiring. It's much cheaper to access mobile technology through a cell phone tower than to install fiber optic or wire connectivity to villages, he says. And in the past five to eight years, Spielvogel says, many countries have opened their business marketplaces to telecommunications companies from around the world.

"You have the benefit in many countries of a healthy competition, where there isn't just one vendor who can strangle the market," he says.

Companies also are noting financial potential in the education market, Spielvogel says. He cites AfriConnect, a wireless-broadband, high-speed Internet, and cell phone provider, which has a high-quality education portal and is aiming to push into underserved areas of that market in Africa.

"If you can develop educational applications on top of the consumer applications being driven into the market for their own reasons, it's more likely to take root," he says.

A variety of technologies are putting down roots in education, says Lisa M. Easterbrook, an associate project director with the edc who works in Zambia on mobile-technology projects in education.

In parts of Zambia where there may be no teacher, 40 to 50 students may gather in a "community school" under the guidance of a volunteer who will facilitate lessons taught through radio programming. Using solar-powered and crank radios, lessons are broadcast on a regular schedule. For areas where radio reception is poor, the EDC loads the radio broadcasts onto an iPod with a solar panel and battery pack and provides speakers for broadcasting the lesson.

Research has shown that children listening to the broadcasts are performing as well as or better than their counterparts in government-run schools, Easterbrook says. The EDC estimates that in 2009, about 400,000 Zambian students in community schools accessed the audio broadcasts, which reached another 300,000 students in government schools.

"Radio has always been a really effective tool for any kind of development in education here,... simply because of the vastness of its reach," Easterbrook says.

In addition, a small pilot project in Zambia used cell phones to improve teacher training. Groups of teacher trainees received cell phones and sent text messages to college lecturers asking questions about assignments or social issues.

The edc also distributed iPods loaded with training videos to help teachers improve their teaching skills. For example, a survey showed teachers struggling with 6th grade concepts, so the videos highlight how to teach topics like congruency in math or the concept of a magnet, Easterbrook says.

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Group 4 - Laptop Learning Expands

The use of laptops in education also is a growing practice in Africa, particularly through the One Laptop Per Child program. The 4-year-old initiative has helped put 1.5 million more laptops in developing countries around the world, including Rwanda, where there were 120,000 laptops distributed, and Cameroon, where the group expects to have 10,000 laptops in the hands of students by May, Keller says. The laptops are supposed to be used primarily for education.

The laptops are "incredibly durable and designed for kids in the poorest part of the world, living off the grid," Keller says. They're easy to fix, and the organization typically trains one or two students to troubleshoot issues that arise.

The laptops, called the XO, are about the size of a textbook and lighter than a lunchbox. They connect wirelessly to the Internet using an exposed antenna that can pick up remote wireless signals. Some educational applications are preloaded onto the computer, Keller says, and others can be downloaded.

Some countries have taken the program and made it their own, he says. For example, the education ministry in Ethiopia loaded the country's textbooks onto each one.

"Kids may not have seen a book before, and now...they [each] have a small library in his or her hand," Keller says. "It ends isolation for a part of the world that has never been online."

"Technology will take this generation of kids to a level that is unprecedented [in Africa], in terms of thinking critically and analytically."

— Matt Keller Director of Global Advocacy One Laptop Per Child

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