Reinhold Steinbeck is Director of the Stanford University International Outreach Program (IOP) which supported the development of Dunia Moja, a pilot project that enables students to learn from leading experts in the environmental sciences and debate issues through the use of mobile technology and the Internet. The project is a collaboration among faculty and students at Stanford and three universities and colleges in Africa – the University of the Western Cape in South Africa, Mweka College of African Wildlife Management in Tanzania, and Makerere University in Uganda.

What is your professional background?
I've always had a strong interest in looking at technology and pedagogical approaches to enrich the learning process for students. For the past 15 years, I've worked at Stanford University developing international programs – including five years spent developing curricular materials for US high schools on global issues and ten years working with programs at the intersection of science, technology, and practice related to learning and teaching. Specifically, I've been looking at pedagogical approaches that, when combined with technology and informed by the learning sciences, can create rich learning environments.

What does Dunia Moja mean?
Since the dominant language in Tanzania is Swahili, we picked a Swahili term meaning “One World.” It also captures the goal of the project, which is to develop a networked community of students, instructors, and researchers – as well as corporate partners and local communities – all collaborating around environmental issues. Since these issues aren’t limited to any one particular region, the name fits.

How did the project get started?
It’s been an experiment. Initially, we wanted to build upon the distance-learning program that Stanford had put in place with ten Russian universities in 2000. Based on our experience in using media rich CD-ROMs and local seminar groups, we wanted to expand this distance learning approach to other regions in Africa and Latin America. At the same time, we realized that having Stanford produce content on CD-ROMS with limited interaction among students was still a traditional teaching paradigm. We wanted to be more innovative – to create more learner centered, innovative processes.

The project was structured so that students could learn first-hand from faculty and each other about environmental issues concerning Africa and the world. To emphasize the local voice more, we began exploring the use of mobile technology. Ericsson provided 35 smart phones that are capable of accessing the Internet and sending email, text, and multi-media messages. We also got support from local telcom providers in Tanzania, Uganda, and South Africa. The goal was to create an open, networked community. We utilized content that had been produced at Stanford and mixed it with content from the University of the Western Cape in South Africa and Makerere University in Uganda. Content was made available through the Web, through CD-ROMS, and was put on mobile devices as podcasts.

Each location was encouraged to pick one case study to focus on and use the technology to do research. In Tanzania, for example, we wanted to focus on the tension between environmental conservation and community development. Particularly for Stanford students, we thought it would be a wonderful opportunity to hear more from African students directly about these issues. And we hoped that all students would want to learn more about related policy dimensions. Our goal was to bring together the various communities and perspectives.

Can you give an example of how the students used mobile devices?
One area we experimented with was mobile blogs. Students conducting fieldwork at the foot of Mount Kilimanjaro, for example, could take video clips or photos with a smartphone, add a text caption, and send it to a moblog. Images of melting snow and changing water flows were then made accessible to all the students participating in the course. This worked on and off, given bandwidth and connectivity issues; yet I’m not aware of a project in the higher education arena that’s done this.

What have been some of your greatest learnings?
After a year and a half, we’ve learned a lot of lessons. We experienced technical challenges at nearly every level. The CD-ROMs didn’t always work with local systems. Bandwidth was a big issue with students frequently experiencing difficulty in accessing the course content management system and collaboration platform. Across Africa, mobile technologies are growing exponentially. We thought students and researchers going into parks would have access to networks. As we got into the field, we ran into technical problems and the network providers didn’t have time to look into those issues. Still, we got a glimpse at what this kind of networked community could look like and how it could add value to university professors and engage...
students in fascinating conversations.

Another challenge was simply introducing new technologies and shifting the paradigm of teaching and learning away from traditional lecture approaches to student-engaged learning. There’s plenty of research demonstrating that learning can be richer when you engage students in real-world activities. The educational culture in many countries is centered on traditional approaches. It’s harder to introduce strategies that require more student or teacher action.

**What are your plans for the future?**

Funding for the pilot has come to an end. The community is now in a good position to move forward with the vision of utilizing mobile technologies to engage participants in a collaborative dialogue – bridging grassroots and global issues and using mobile technology to educate people locally.

We recently hosted a workshop in Tanzania to build a stronger community among the key stakeholders involved in the project. The meeting offered a potent reminder of how important face-to-face contact is when it comes to technology projects. Our online conversations were different from those we had in the parks and classrooms. During the retreat, participants started to design a proposal for what the next phase of the project would look like and we will see if foundations might be interested. In the next phase, we plan to address some of the challenges we encountered and further explore lessons learned. I’d like to come up with some solid case studies.

There’s no limit to the number of universities around the world that would want to be part of this type of networked community. We talked about possibly connecting Dunia Moja to the Amazon basin. At some point, Dunia Moja could become a one world project or program combining innovative technology with teaching and learning.

For further information, visit: [http://duniamoja.stanford.edu](http://duniamoja.stanford.edu)

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