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The EduTech blog contained a number of interesting discussions. The primary author, Trucano, notes that the ongoing debate over laptops or mobile phones as the “tool of choice” for educators that will likely not be resolved with one “winning.” Even though 1-to-1 initiatives appear to be laptop- and netbook-centric, I feel it’s very likely that mobile phones will grow as a platform alongside laptops. Going further, I think it’s important to consider the 1-to-1 platform in abstract terms to accommodate whatever devices may be appropriate---including devices that address the spectrum of needs explored in the assistive technologies discussion.

What is recognized as emerging is the role of mobile phones as data collection devices (3/13/2009). Evidence for the effect mobile phones will have on education “is a little less clear” and “spotty” compared with the data on overall access to cell phones (4/17/2009). Donor attention to mobile phones only began to get “serious attention” around 2005 and in 2009 Trucano says “it is clear we are still in the *very* early stages of developments, and I expect that this will be an area of major research interest and activity in the coming years.” And, indeed, the topic comes up frequently in later blog posts, including references to government backlash to students with mobile phones that act as “devices of distraction” (8/7/2009).

A very interesting post by Trucano was on “Why we need more (not fewer) ICT4D pilot projects in education” (6/12/2009). He is responding to opinions that there are too many pilots and there needs to be a focus on “scale up.” In response, Trucano feels that there are too many scale up efforts that haven’t been preceded by pilot experiments. And, possibly worse, Trucano expresses frustration that the lessons learned from those pilots that have taken place “seem to have little or no impact on government planning.” That latter point could support an argument to freeze development projects until evaluation data is collected and disseminated and understood by those planning the next round of efforts. Even that process, though, is affected by the ongoing discussion around evaluation metrics. Trucano posts on that topic when reporting on the “Consultative workshop on ICT and education indicators” (7/17/2009). He observes, though, that establishing global indicators “will only get us so far” due to the “widely divergent approaches to monitoring” at the local project level.

The post on “Finding (useful) research” was interesting for its coverage of what is now an “explosion of activity” (8/21/2009). As he notes, the problem is now switching to “separating the wheat from the chaff” and discerning which materials are relevant to policy development. In a later post he notes that the World Bank alone “published 100 knowledge products on education” (1/8/2010). Sites such as www.observatoireict.org are appearing to help one search through databases of research.

Given our recent class discussion on participatory projects, the post on involving children as “design partners in the development of the [ICDL] digital library” was interesting (11/20/2009). The children are providing input on how the digital library should be organized (i.e., not by author name) and “crowd sourcing” a dictionary.

Regarding the “10 Global Trends in ICT and Education” post by Robert Hawkins (1/11/2010), I don’t disagree with the list but I do have the concerns about how the ideas are taken up and carried forward. For example, last year I was on a series of phone calls with IBM as they were building a data center in Johannesburg to serve as a cloud computing facility for Sub-Saharan Africa. One of the initial target sites is Makerere University in Uganda. My concerns are

that connectivity is not yet reliable enough to serve Makerere from South Africa. Last Friday I spoke with a UCSF colleague who works with Muhimbili University of Health and Allied Sciences in Tanzania and he said he's not heard anything about the impact of the Seacom cable on available bandwidth, and Dar Es Salaam is one of the landing points! The other concern is that cloud computing can often be a one-size-fits-all solution. In the case of Makerere, per a colleague, they are already running at least three course management systems locally (BlackBoard, Moodle, and TUSK). The IBM solution would bring yet another, Sakai, that would need to be learned by students and faculty members.

The World Bank working paper is an excellent resource. It has provided me a number of very useful references for education efforts in support of human resources for health (elearning, content, cultural considerations, etc.), along with its coverage of clinical delivery and patient education initiatives. Similar to the World Bank blog comments about the broad area of ICT4D, this report notes "a critical mass of professional and community users of ICTs in health has not yet been reached in developing countries" (p. 4). There are a number of pilots underway and the report recommends that "the best way forward is to gradually introduce, test, and refine new technologies in those areas of health care where there is a reasonable expectation that ICTs can be effectively and efficiently used" (p. 5) and provides a list of observed benefits, issues to consider, further research opportunities, and broad conclusions about the use of ICTs in the health sector. I found the discussion of audience for interventions, beneficiaries and intermediaries, a useful lesson in thinking holistically about who will be affected by ICTs in health.

The Surana et al. paper shares practical lessons from projects run by Berkeley. I believe a key point is where they stated "we found it extremely valuable to view our work as optimizing the existing system rather than deploying something from scratch" because it eased understanding and buy-in and minimized unforeseen circumstances (p. 48). Particularly because of the example from Ghana, it reminded me of the line from Machiavelli's "The Prince,"

"it ought to be remembered that there is nothing more difficult to take in hand, more perilous to conduct, or more uncertain in its success, than to take the lead in the introduction of a new order of things. Because the innovator has for enemies all those who have done well under the old conditions, and lukewarm defenders in those who may do well under the new. This coolness arises ... partly from the incredulity of men, who do not readily believe in new things until they have had a long experience of them."

The Ghanaian lab workers benefited (presumably illicitly) from the old system and it's unlikely there were enough people who fully understood the benefits of the new system to act as advocates powerful enough to counter the lab workers. The lesson from the authors is that the natural resistance to change can be tempered by their "optimization" approach.

Week 9: SECTORAL APPLICATIONS: HEALTH AND EDUCATION (Mar 22nd)

The EduTech blog, by Michael Trucano and Robert Hawkins of the World Bank, at: <http://blogs.worldbank.org/edutech/>. I'd encourage you to read AT LEAST the 2010 blog postings; don't miss "Building national ICT/education agencies," "Evoke," "How Can

Assistive Technologies Increase Learning,” “1-to-1 educational computing initiatives,” “10 global trends,” and “Top EduTech Posts for 2009.”

World Bank, “Improving Health, Connecting People: The Role of ICT in the Health Sector in Developing Countries,” infoDev working paper #7 (2006), available at:
<http://www.infodev.org/en/Publication.84.html>.

S. Surana et. al. “Deploying a Rural Wireless Telemedicine System: Experiences in Sustainability,” *Computer* 41:6, pp 48-56.