

# Human-Computer Interaction

Week 9 Lecture 9B

HCI in the developing world (HCI4D)

COMP 3900 & COMP 6390

Semester 2, 2016

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# Reflections on experience of HCI4D

This part of the lecture looks at some of what researchers in HCI4D say about what they do.

Last year Prof Henry Gardner, one of the HCI researchers at ANU, talked to the class. One of his points was that an important theme running through HCI research involved contributing to social good. You will see this theme running through the examples that we look at in this lecture.

# Stories from the field

## An emerging area of research activity

Yaw Anokwa et al. (2009) Stories from the Field: Reflections on HCI4D Experiences, Information Technologies and International Development vol 5, issue 4, pages 101-115

Nine PhD students, whose projects involved field work in developing regions, met at a workshop at CHI2008 and continued weekly discussions about their research over the next 5 months.

Yaw Anokwa, Thomas Smyth, Divya Ramachandran, Jahanzeb Sherwani, Yael Schwartzman, Rowena Luk, Melissa Ho, Neema Moraveji, Brian DeRenzi

# Stories from the field

They decided to gather stories about their experiences as HCI4D researchers and to analyse these stories using a grounded-theory approach.

- Coding the stories resulting in 19 “ideas”
- Questionnaire for each author (Likert Scale) about each of the “ideas” [5 statements per idea]
- Repeat coding and combining the Likert data to give five themes.

Studying users

Choosing users

Managing expectations

Developing Content

Deploying technology

# Stories from the field

## Deploying technology

“Because the goal of HCI4D research is development, HCI4D research must continue past evaluating the purely technical contributions. Planning for adoption, ownership, and long-term use of the proposed solution plays a critical role in ensuring that the technology addresses the development goals for which it is designed.”

# User Centred Design in the Developing World

Maunder et al. (2007) Designing interactive systems for the developing world-reflections on user centred design, in Proc. International Conference on Information and Communication Technologies and Development, 2007, pages 321-328

- Technology to be used in a project may not be widely available so the users are not always able to envisage the proposed solutions or choose between various design options
- Low-fidelity prototyping is of limited value; higher-fidelity prototypes are needed early in the design to help potential users give useful feedback to the designers.

# User Centred Design in the Developing World

Maunder et al list four core “values” of UCD:

- Understanding and specifying the context of use
- Specifying the user and organisational requirements
- Producing design solutions
- Evaluating the design against the requirements

(ISO Standard ISO13407)

They comment that:

“... within our experience at least, discovering the requirements is such a complex task that it is hard to know if the project is finished, let alone be in a position to evaluate it.”

# User Centred Design in the Developing World

Maunder et al. suggest an approach that helps the users learn the skills that they will need to understand the technology that is being proposed.

The **development of the project** (placing ICT technology into developing countries) goes in parallel with **educating targeted users** in those countries to understand and use the technology.



# Human-Computer Interaction for Development: The Past, Present, and Future

Ho, M et al. (2009) Human-Computer Interaction for  
Development: The Past, Present, and Future, Information  
Technologies and International Development 5(4), p1-18

Melissa Ho (now Melissa Densmore) and co-authors say:

“The term HCI4D ... focuses on understanding how people  
and computers interact in developing regions, and  
on designing systems and products specifically for  
these contexts.”

# Human-Computer Interaction for Development: The Past, Present, and Future

“This article is a review of the past, present, and future of HCI4D.  
In it, our aims are to do the following:

- Articulate some of the histories that inform this particular community of researchers.
- Provide an overview of existing work in HCI4D spanning numerous venues and research traditions.
- Discuss several of what we believe to be the most pertinent issues in the discipline.
- Suggest a set of grand challenges for the field over the next 5 to 10 years.”

# Human-Computer Interaction for Development: The Past, Present, and Future

Three broad issues that were identified:

- Participation (of the communities at the focus of the work) in the actual project
- The relationship between HCI4D research and delivery of outcomes to the target community. [Action Research]

- Evaluation

“Quantitative “time and errors” evaluations are especially dubious when the ultimate goal of development is so far removed from the goal of greater workplace efficiency out of which those approaches were born”.

# More resources

- CHI conference series sponsored by the ACM Special Interest Group on Computer-Human Interaction ([chi2016.acm.org](http://chi2016.acm.org) for this year's conference details)
- ICTD Information and Communication Technologies and Development ([ictd2016.info](http://ictd2016.info))
- IKTC Indigenous Knowledge and Technology Conference
- AfriCHI [www.africhi.net](http://www.africhi.net)