

# HCI4D: How Do We Design for the Global South?

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## ABSTRACT

Many projects exist regarding the use and design of technologies for a variety of domains in the developing world. However, less research has focused explicitly on using HCI in the Global South or doing Human Computer Interaction for Development (HCI4D) and on the methodological challenges associated with this type of research. In this paper, we argue that user centered design and evaluation techniques do not easily translate from the Global North to the Global South and that they may have to be adapted to new cultural contexts and settings in the developing world.

## Author Keywords

HCI, developing world, methods

## ACM Classification Keywords

H5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous.

## INTRODUCTION

Human Computer Interaction for Development or (HCI4D) requires us to design technologies for the Global South. Yet, since these techniques are primarily developed for a first world context, despite the potential methodological risks, we argue that traditional techniques need adaptation to function effectively as design and evaluation methods in the Global South. In this paper, we discuss several HCI evaluation methods and highlight issues arising when using these methods in the developing world, primarily through examples from our own research.

## USER CENTERED DESIGN IN THE GLOBAL SOUTH

Many examples of ICT4D projects exist [7] but there are few explicit projects on user centered design or HCI in the developing world, see [1, 5, 6] for exceptions. For those projects that do use HCI, less has been said about the methodological challenges faced by researchers in the

Global South. We argue that we may have to question the implicit assumptions inherent in our HCI methods (we focus here on evaluation techniques) developed by and for the first world, if we wish to apply them successfully in the developing world.

Several issues arise when using HCI in the Global South. Many contemporary HCI methods assume a certain degree of familiarity with technology and the ability to articulate needs using certain terminology, concepts and language. If one is unfamiliar with technology and the associated techno-lingo, it may not be easy for to one to express technology needs. Since HCI methods are a social product of the first world, they also influence the way we think about technology design and evaluation. For example, we might evaluate the success of a design in the first world in terms of its usability. In the developing world, where so little infrastructure is available, sometimes even a poorly designed interface may be considered useful if the alternative is not to use technology at all.

Additionally, many HCI methods depend on the presence of HCI experts but in most developing world contexts, few people are trained in HCI due to the lack of higher education capacity and resources. Next, we present examples from our research on HCI evaluation methods which we found difficult to employ in the developing world based on our experience in rural South Africa [3].

## POTENTIAL ISSUES WITH EXISTING HCI METHODS

In this section, we are not arguing that these are the only methods appropriate for HCI evaluation or that there are no other alternatives for HCI methods in the developing world. We use these examples merely to illustrate the types of illicit assumptions that are present in HCI methods today, largely because they were designed in the first world for the first world.

A *cognitive walkthrough* [4] is conducted by HCI experts to evaluate an interface to see if a user will be able to complete particular tasks. In the developing world, it may not be easy to find many local HCI experts at hand to evaluate systems in the field. For example, in our research project in rural South Africa, the only people with HCI knowledge that we encountered, aside from our research team, were over 100 miles away from the village that we worked in. Further, because not many universities in South Africa teach HCI, those trained in HCI are likely to be from and residing in the more developed parts of the country

with a perspective on technology that is far removed from that of a rural resident. We chose not to use these methods. Had we done otherwise, we would have had to conduct cognitive walkthroughs in the laboratory environment with experts. Further complicating the issue, these experts may have been unable to accurately predict how and if a rural user would perform a specific task because they would be attempting to second-guess users who are not familiar with technology, are technology illiterate and who may have never encountered a computer before.

For qualitative *user interviews*, in our own research [2], we have also found that due to differing levels of education, written and spoken language, and differing experience with technology, certain groups of people in the Global South may not be as well equipped with tools and language to constructively comment on flawed interface design. For example, in our research project, in interviews, users claimed that our prototype was being used often and that they found it to be beneficial on a daily basis. However, our log files indicating system use contradicted these claims since they showed that both our users did not use the system frequently. This makes use of interviews problematic unless they are used in conjunction with other methods for data triangulation.

Many advocate *participatory approaches* such as participatory design for developing world contexts since they involve users directly in the design and evaluation processes. For example, in a participatory design workshop, users and designers can collaboratively design paper prototypes for interfaces. In focus groups, users can discuss issues around a particular domain and suggest technology solutions. In our experience, our users were so unfamiliar with computing technology that they were unable to easily articulate their needs in technical terms. Thus, we held a focus group that did not concentrate on collaborative interface design but rather elicited feedback on design ideas we presented as a paper prototype. In the workshop, we described our prototype to our users using technological concepts familiar to them. For example, we introduced the concept of sending voice messages between two sites, a clinic and a hospital, as similar to leaving a voice mail for a person on their cell phone. Linking the unfamiliar to the familiar proved to be very helpful for explaining technological ideas.

This is by no means an exhaustive examination of HCI evaluation methods and we have not touched on HCI design methods. What we have sought to do here is to point out the implicit assumptions in some of our HCI techniques and to show they may not be appropriate for all settings, particularly the developing world.

#### **DISCUSSION: DESIGN FOR THE GLOBAL SOUTH**

During the workshop, we would like to continue the discussion on how to design for the Global South. We ask:

How can we educate and work within the CHI community to create visibility and draw attention to the methodological challenges of working in the Global South? We would also like to question the implicit assumptions in our current methods which are a social product of the developed world. Other questions we have are: What are some of the challenges that others have encountered with user centered design in the developing world? Do we need new methods for the developing world or can our old methods be adapted to new contexts? Finally, in the developing world, where basic needs are often not being met, what role does technology have to play and do we need to incorporate a broader range of factors into design to create useful technological solutions in this context?

#### **CONCLUSION**

In sum, we have argued that HCI methods developed by and for the first world have implicit assumptions which make them difficult to employ in the developing world, for example, about users' level of exposure to technology, about the ways that users can express themselves using contemporary knowledge about technology, and about the availability of HCI experts. In the workshop, we would like to continue the discussion on bringing the challenges of using HCI techniques in the Global South to the attention of broader CHI community.

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