

The Academia-Practice Divide in HCI

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The topic of this workshop, important though it is, has received very little attention until now. The question of whether academia is adequately connected with practice urgently needs an answer, if only because because the argument for funding HCI research and teaching hinges on showing a connection.

I would argue that HCI research has, over the years, become increasingly distant from the practice it would most like to influence, namely the development of interactive products. This is not, I think, a voluntary distancing but one brought about by several factors beyond researchers' control. In particular, the pace of technological advance has forced HCI researchers into catch-up mode; also, the pursuit of an academic career has often discouraged researchers from taking jobs in full-time product development; and pressure to publish has encouraged them to stay within relatively low-risk research domains.

Consequently the results of HCI research, interesting though they are to other researchers, can be frustratingly unhelpful to practitioners. My own early experiences of seeking help in the HCI literature, back in the 1980s, were almost always disappointing: whatever question I was facing as a designer, I hardly ever found the answer in HCI publications. Other designers I've met since then have said much the same. And when I have shared these experiences with other HCI researchers, I've been surprised how many of them consider their target readership to be the research community, rather than practitioners.

None of these factors should prevent HCI academics from teaching their students useful practical skills. Obviously, however, the factors just mentioned can make this task more difficult. Where, for example, should academics go to find real-world illustrative examples of product design? How can they prepare their students adequately for the challenges of working with technologists, e.g., for the difficulties of getting a place at the technologists' table, of being listened to and respected, and of generally gaining buy-in to the importance of usability? Buy-in is vital to success as a usability practitioner, yet constantly hard to achieve: in today's largely consumer-based markets, where sales volumes are the dominant factor and customers' awareness of usability issues is low if not non-existent. What ammunition can teachers offer budding usability practitioners to help them convince their designer colleagues that increased usability can result in increased sales?

Historically, researchers and developers of technology have found a basis for working together, and for satisfying their customers, through the establishment – usually by researchers – of mutually agreed design criteria. In the 18th century, for example, research into farming methods led to agreement on *yield per acre* as the criterion for designing mechanical equipment (Tull 1731); and aeronautical researchers of the early 20th century established such parameters as *lift* and *drag* as key criteria, which aircraft manufacturers and their customers then adopted (Anderson 2004). In the world of interactive systems, however, we find no such agreement on design criteria between researchers, developers and purchasers. Researchers tend to focus on inventing and testing novel technologies, while developers seek to achieve product differentiation that will increase sales, and customers are meanwhile choosing products on the basis of cost or appearance.

It is my belief that the disconnect between HCI academia and practice will remain in place as long as researchers, developers and customers disagree on what's important. I would like to see this workshop's agenda include a discussion of how researchers can help break this

deadlock. A way forward, I suggest, is to identify *design criteria* that developers and users will accept as measures of design success. If progress can be made in this direction, we may then see greater agreement between usability practitioners, technologists and marketeers, and it may become easier to teach students how to play an active role in product design.

As I have pointed out, it is typically the researcher's task to discover criteria that can be established as a basis for design. HCI researchers have not, as a whole, been enthusiastic about taking on this task (Newman 1997). One reason for this has, I believe, been the lack of tools for identifying performance criteria. I will finish by describing briefly some recent progress towards developing such tools (Newman and Blandford, in preparation).

The method in question relies on *diary studies* as used by Sellen and Harper and others (Sellen and Harper 1997; O'Hara, Smith et al. 1998). Participants in the study are asked to keep a diary for one or more days, writing brief notes on each of the activities they carry out. At the end of each day an interview is conducted, in which the participant is asked to elaborate on their descriptions of the activities. In this variant of the 1997 method, the interview transcripts are then scanned for *criteria* describing the activities' outcomes, e.g., time spent ("If I take notes it takes me *longer* to read") or accessibility ("One book *was there*, one wasn't on the shelf"). When a particular class of participant is targeted, such as humanities PhD students, this method of study can reveal information of two kinds:

1. The *types of activity* most frequently performed;
2. The *performance criteria* most frequently applied to each activity type.

In the study of PhD students, the most common activity type was *reading*, and the criterion most frequently applied to reading was the *usefulness* of the material read; other criteria, such as the amount read, were mentioned much less often. The second most common activity type was *accessing* materials, either online or on library shelves: here the most frequently mentioned criterion was *time spent* in gaining access to it.

Methods such as this can help researchers, teachers and students to focus on what matters to users of interactive systems. This by no means solves the problem of preparing students for careers in HCI practice. On the other hand, as long as academia and practitioners maintain different views of what matters, it will be hard to gain a purchase on the problem – particularly if their views differ from the views of customers.

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