A Contextualized Curriculum for HCI

Sally Fincher

School of Computing

University of Kent

Canterbury, CT2 7NF, UK

S.A.Fincher@kent.ac.uk

Paul Cairns

Department of Computer Science

University of York

York, YO10 5GH, UK

pcairns@cs.york.ac.uk

Alan F. Blackwell

Computer Laboratory

University of Cambridge

Cambridge CB3 0FD, UK

Alan.Blackwell@cl.cam.ac.uk

Abstract

The ACM and IEEE are currently revising their joint Computer Curriculum. The purpose of this workshop is to discuss and formulate a context for the HCI component of the undergraduate curriculum in terms of the current teaching practices of HCI educators. The goals of the workshop are to provide rich methods for capturing pedagogical content knowledge that would support HCI educators using the revised curriculum in their teaching.

Keywords

Curriculum, pedagogical content knowledge, content representation

ACM Classification Keywords

K.3.2 Computer and Information Science Education

General Terms

Human Factors

Introduction

As HCI researchers and practitioners, we are careful to pay close attention to user communities, their wants and needs. We engage in user studies, ethnographic investigation, participant observation, and contextual and participatory design exercises. However, as educators, that repertoire of investigation is largely unavailable to us. . Thus our tendency is to create (and

re-create) courses and materials relying on how we were taught, or how other subjects around us are taught, without reference to the particular challenges of teaching HCI. There is little recognition of what might be considered to be "standard practice" in the field, or appreciation of what might be innovative or unusual approaches that best fit HCI pedagogy as opposed to other topics in computer science.

In this workshop we will work to populate a schematic curriculum document with rich examples of practice, interpreted and adapted to specific contexts. We will collate representations that exemplify how a certain piece of the curriculum has actually been instantiated in practice: from the widest possible range of situations from R1 institutions to community colleges, from I-schools and Business Schools, from departments of Education and Cognitive Science and from Departments of Computer Science in and outside Colleges of Engineering. The resultant corpus of material will be made freely available, and form the nucleus of an extended collection.

Topic and Goals

The ACM/IEEE are currently revising their Computer Curriculum document, for 2013. As one part of this, the HCI component of the curriculum is also being revised under the leadership of Prof. Sally Fincher. Curricula of this sort have multiple roles but in particular are intended as benchmarks for a subject taught at many different institutions and also as guides for those devising their own modules in the area. However, as such, they act rather as prescriptions of content rather than documents that actively support teaching practice. But a curriculum without context is rather like the score for a violin piece without knowing what a violin is. A curriculum is not just about what is described on the page but how it is expressed in the classroomDespite the rich, varied and complex experiences of many educators across the globe, it is not transparent how educators develop Pedagogical Content Knowledge (PCK). Although educators work within individual institutions, and specific institutional contexts, PCK is primarily a disciplinary construct. Knowing the good ways to present a given concept, the common errors students encounter, the cunning assessments that elicit knowledge and the "killer examples" that illuminate it are all part of an expert teachers' repertoire. These cannot be developed independently of the material to be taught. Thus, PCK emerges from the combination of a deep understanding of the subject matter and its expression in an individual classroom. In many ways, it is this which provides a more useful benchmark and guide than the descriptions offered by a traditional curriculum.

The workshop therefore has two main goals.

The first regards the *visibility and comparability* of practice. Teaching is, by and large, a private activity. Although static resources – curricular documents, textbooks etc. – are widely available, there is limited access to "how to do it". As users, we do not see what others do, there are no gurus to ask, our repertoire is limited to (and by) our circumstance. This workshop will collate a series of rich representations of HCI teaching.

The second goal is to understand how we may *best represent* inevitably situated and contextual practices so that they are amenable to adoption and adaptation by others. What features are important? How are they

exposed? What material should be abstracted and what detailed? What representational forms are helpful? What aspects hinder?

The outputs of the workshop will begin the process of developing a contextualized curriculum for HCI which embeds domain content in the pedagogical practices of those who teach it. This workshop will draw on the current working version of the HCI Knowledge Area to inform and structure the materials generated from this workshop.

Taking Part
Drawing on the goal of providing a pedagogical context to HCI domain knowledge, the activities of the workshop are centred on teaching practices and content representations of those practices.

Workshop participants submit a "piece of practice" that they find most interesting, exciting or effective within their context. Where possible, this is associated with one of the topics in the CC2013 curriculum working document. There is no prescription on the type of practice selected. Participants may choose whether to talk about a particular lecture or assessment or even some aspect of the process of devising content. Additionally, representation of the chosen practice is actively encouraged to be diverse and creative. Traditional academic narratives are perfectly acceptable but alternative media and formats from blogs to case studies and digital stories are encouraged. The only limitation is that the submission exemplifies how a topic has actually been instantiated in practice.

Together with the "piece of practice", participants provide responses to an associated series of questions

(adapted from [4]): What I tried successfully; Changes that I made; Readings I found interesting; Tips and strategies I found useful; What I found challenging; What did not work for me; What would have helped me. In this way, participants come to the workshop with a diversity of material, but a common exploration of their separate instantiations.

Within the workshop, these pieces of practice are jointly explored; beginning with discussions of what other people need to know in order to make sense of each participant's captured practice.

Each practice is then re-drafted in a Content Representation (CoRe) form. CoRe is a way of explicating the pedagogic content knowledge tacitly embodied in designed practice. Our CoRe design is based on that devised by Jack Loughran [5], and will expose a different articulation of (and a different index into) the "pieces of practice" we are considering from that prepared before the workshop.

As the basis for discussing the efficacy of such CoRe, participants re-present their pieces of practice. The workshop will evaluate the different indexing mechanisms used in the CoRe and how these could be arranged around curriculum topics. In addition, we will pay particular attention to what else may be useful, appropriate or relevant in capturing the context of the curriculum.

Post Workshop
After the workshop, the organisers plan to maintain the collection and, it is to be hoped, to continue to gather material. The aim is not to be an archive of context-free artefacts, but rather a contextualised resource that

allows connections within a community. In this way curricula may remain more fluid, drawing on online resources, both human and material. The workshop outcomes will also enhance and inform continuing work on the revision of the HCI Knowledge Area within the ACM/IEEE Computing Curriculum 2013.

Citations
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