
Are We Teaching the HCI That We Want To Teach Rather Than What They Need To Learn?

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Abstract

In this position paper we discuss the motivations for our research in HCI education and practice. Our findings support the case for a living curriculum, sensitive and responsive to the contrasting cultures and cognitive styles of educators, professionals and students. Our data reflects a predominance of analytic over intuitive styles in HCI educators, which has implications for curriculum development and delivery.

Author Keywords

HCI education; Culture; Cognitive Style; Curriculum

ACM Classification Keywords

K.3.2 Computer and Information Science Education

Introduction

Human-computer interaction has become a subject taught across universities around the world, outside of the cultures where it originated. However, the implications of its assimilation into the syllabus of courses offered by universities around the world remain under-researched. Our research at the Sociotechnical Centre for Internationalisation and User Experience at the University of West London (UWL) has studied the performance of HCI students in universities in UK,

India, Namibia, Mexico and China engaged in a similar design and evaluation set of tasks and has found that the predominant cognitive styles and cultural attitudes of students located in different types of institutions and countries shape their learning of HCI concepts and tools [1]. In particular, an emergent pattern between adaptive cognitive styles and high uncertainty avoidance was identified in the assessment of the richness of students' heuristics exercise completion.

In terms of the curriculum, our research has indicated a global variance in the content and emphasis given to various aspects of the curriculum and some interesting tension has been noted between HCI as a design subject and as an engineering subject [1]. Interestingly, this program of research was triggered by some of our observations in teaching HCI for over ten years in the School of Computing and Technology in UWL at undergraduate and postgraduate level.

HCI teaching experience observations

There are a number of challenges we have faced in teaching HCI at both levels. The first challenge is about teaching design and psychology concepts to undergraduate students registered in Computing courses. Illustrating design decisions as contingent on characteristics of users and their context has proven difficult for students used to the certainties of formal models and programming languages.

A similar challenge is presented to postgraduate students with a computing or engineering degree and no or little work experience. However, those with work experience have proven more tolerant and comfortable with the potentially equivocal nature of HCI design problems.

In terms of our interaction with HCI teachers and practitioners, we have found that curriculum and learning outcomes are interpreted differently depending on the interests and areas of expertise of the assessor.

In addition, the lag time between writing a textbook and publication has a greater impact in fields such as HCI and other computing subjects as the pace of the technology moves so fast. This results in case studies that are outdated, and new affordances of technology and implications not being reflected in the curriculum. Thus, a strong focus on textbooks does not facilitate the idea of a living curriculum.

The living curriculum

The term a 'living curriculum' suggests a curriculum that is multidisciplinary and organic, one that responds to its environment by reflecting current practice; it grows by adopting new topics and techniques and retiring those that are no longer relevant, and is continually evolving. This analogy can be further extended by suggesting that the curriculum has a symbiotic relationship with practice, with the expertise of practitioners in the field contributing to the education of the next generation of practitioners, and the product of academic research informing the practice in the field.

Our ongoing research in HCI education and practice tries to understand the interpretive flexibility of curriculum in this rapidly changing sociotechnical environment [2].

Contribution to the living curriculum

Recent research has centred on the practices and underpinning philosophies of both education and practice in order to identify a global curriculum [3].

However, the tools and techniques used in the field do not take into account the different cognitive styles of either the students or practicing professionals.

Our research extends this by investigating the extent to which the cognitive style of the professional, whether practitioner or educator, determines the approach to practice in the field, or ascribes particular significance to tools or techniques when delivering the curriculum. Alongside this, it examines the cognitive profile of HCI students and compares it with the key requirements of the HCI curriculum. A better understanding of these two areas will serve to support the educational experience of the students and to strengthen the HCI curriculum.

Initial findings from our online survey indicate the profile of the HCI professional as closer to that of scientists and engineers in respect of both their visual object and visual spatial ability, but their verbal ability as higher, perhaps reflecting the communication skills, which are required both as a practitioner and an educator.

Interestingly, the profile of the HCI educator had fewer intuitivists and more analysts amongst its rank. However, the fact that HCI is often taught as an option within a computing course may suggest that HCI lecturers are computer scientists who have become interested in the subject rather than HCI specialists who have joined the faculty specifically to teach subjects of this nature. It was also found that the profile of the practitioner is similar to that of practitioners who also teach, and distinct from that of the educator, perhaps suggesting that practitioners

who also teach move into teaching after having practiced in the field.

The cognitive profile of the HCI students surveyed was closer to practitioners than to educators. This contrast may have implications for the delivery of the curriculum. Our research is ongoing, but it may be that educators favour analytical techniques, and may not value the intuitive to the same extent as the practitioner. This may have implications with both the delivery and assessment of particular topics, such as task analysis or interviews and focus groups, and it may be that the educator needs to consider this when planning the curriculum.

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