Values & Design in HCI Education

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Abstract
The aim of this one-day workshop is to share existing research and practice, and to develop new strategies and tools, for teaching values and design in HCI. Through collaborative group discussions and exercises, participants will critique and create approaches for making personal, social, and technical values a pedagogical focus in both traditional learning environments, such as classrooms and conferences, and alternative learning spaces such as design labs and workplaces. This workshop will bridge current gaps in research and practice as well as lay the groundwork for future efforts in teaching values and design in HCI.

Author Keywords
applied ethics; design methods; education; information ethics; pedagogy; values; values in design; value sensitive design

ACM Classification Keywords
H.5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous; K.4.1 [Computers and Society]: Public Policy Issues — Ethics; K.3.m [Computers and Education]: Miscellaneous

General Terms
Design, Human Factors, Theory, Workshop

Introduction

As information technology gains influence across many dimensions of our society and our everyday lives, it has become clear that technology designers must be concerned not only with the opportunities technology provides and technology's interaction with user practice, but also with the human and social values that technology design may implicitly or explicitly express. The HCI community has discovered that values manifest throughout all aspects of design, implementation, adoption and adaptation of socio-technical systems [14,16]. Values shape the technologies designers create, and impact technology use practices [9]. Much of the values and design literature is concerned with whose values are considered and materialized, and how those values are exposed, negotiated, and concretized into technical features during the process of design, features that in turn affect adoption, use, and eventually the social impact of design products [10].

In addition to discovering that values are always already at play in technology design, we have also discovered that design approaches that explicitly consider values can change the affordances of the resulting technologies [5,13,14]. This discovery leads to a significant educational challenge: how do we train future designers, engineers, and citizens to consider the roles that values currently play in technology, and to re-shape technology to reflect other, consciously chosen values? Increasingly, HCI researchers are developing new approaches for teaching students, developers, and designers about the role of both personal and social values, broadly defined, within design contexts, and disseminating such approaches through traditional academic courses and seminars, professional development workshops at conferences, and collaborations between the academy and industry. To date, however, these many resources, tools, and pedagogical practices have remained both intellectually and practically dispersed. This workshop will document, share, and interrogate these practices, and provide a space for creating new and innovative pedagogical approaches to teaching values and design.

Workshop Topic

This one-day workshop will extend previous values and design related workshops [4,7] by examining current and emerging practices for teaching learners about how to consider and address values and design. The workshop will consider learning environments ranging from traditional classroom settings to conference workshops, industry events, *in situ* design interventions, and other sites both inside and outside of the academy. This diversity entails a need for flexible teaching methods that enable the investigation of how values are supported, hindered, or embedded in technological artifacts; it also entails taking into account the values of stakeholders and value trade-offs in the design processes, as well as end-user values and how values are expressed in resulting technologies.

Through group discussions and exercises before and during the workshop, participants will engage with the following questions:

- What is a value [3,7,10,11]? How do we talk to learners about defining values?
- Whose values are at issue [1]? How do we teach learners to recognize multiple stakeholders and the values they bring?
- What are best practices and lessons learned from various current approaches (including Envisioning

Cards [6], Values-at-Play [2], reflective design [13], critical making [12], and more)? What works? What doesn't? Why?
- What/where are the gaps in existing values and design pedagogy, such as excluded groups, subjects, and concepts?
- How does values and design fit in with or deviate from other trends in HCI education (e.g. sustainability and green design, gamification, and behavior change technologies)?

Workshop Goals

The workshop will encourage participation from researchers studying user-centered design, product design, requirements engineering, digital anthropology, participatory design, the learning sciences, and applied ethics, among other topics. The workshop will also include perspectives from education practitioners and academics, and those experienced with teaching science & technology studies, technology ethics, critical making, and critical technical practice. This interdisciplinary group will accomplish the following goals during the workshop:
- Survey existing pedagogical tools, practices, and methods related to values and design
- Explore how learners are taught to consider what a value is, and what values stakeholders hold (e.g. proscriptive or inductive methods, etc.)
- Create new or extend existing education tools such as syllabi, workshop agendas, curricula or other deliverables related to values and design in HCI education
- Plan for interdisciplinary applications of these methods and practices beyond the workshop by outlining an article for *interactions* magazine about compelling practices for addressing values and design in HCI education

Issues to Be Addressed

Through a series of discussions and activities participants will address the following issues:

Cataloguing the diverse range of pedagogical methods, tools, and practices already being used to teach values and design across learning environments, building on an existing online repository (http://www.nyu.edu/projects/nissenbaum/vid/education.html).

Examining the use of material technologies and practices (including the use of hands-on design projects or challenges, prototyping, design competitions, storyboarding and other interaction design techniques) within theoretical work in and out of the classroom.

Drawing useful contrasts between these materials as a baseline for determining what works and what does not for teaching values and design.

Evaluating the efficacy of existing methods and tools.

Identifying the virtues and challenges of non-classroom teaching, such as field trips, immersive internships and apprenticeships, and class-based assignments with a substantial co-curricular component.

Sharing strategies for planning and executing lessons; **co-developing** new curricula and pedagogical resources; and **prototyping** these methods with other participants.

Considering how pedagogy itself is infused with values and **detailing** ways to have conversations about *what* and *whose* values are part of the design process.

Building frameworks for an online repository for the revision, sharing, and dissemination of tools and resources for teaching values and design across age levels and in multiple contexts.

References

[1] T. Alsheikh, J.A. Rode, & S.E. Lindley. (Whose) value-sensitive design: a study of long- distance relationships in an Arabic cultural context. CSCW '11, ACM, 75–84, 2011.

[2] J. Belman, M. Flanagan, H. Nissenbaum, & J. Diamond. Grow-A-Game: A tool for values conscious design and analysis of digital games. *DiGRA 2011 Conference: Think Design Play*, 14–17, 2011.

[3] A. Borning & M. Muller. Next steps for value sensitive design. CHI '12, 1125–1134, 2012.

[4] C. Detweiler, A. Pommeranz, A. & L. Stark. Methods to account for values in human-centered computing. CHI EA '12, 2735-2738, 2012.

[5] K.R. Fleischmann & W. Wallace. Ensuring transparency in computational modeling. *Communications of the ACM 52*, 3, 131–134, 2009.

[6] B. Friedman & D. Hendry. The envisioning cards: a toolkit for catalyzing humanistic and technical imaginations. CHI '12, 1145–1148, 2012.

[7] B. Friedman, & H. Nissenbaum. Minimizing bias in computer systems. CHI EA '95, 444, 1995.

[8] B. Friedman & H. Nissenbaum. Bias in computer systems. In B. Friedman, ed., *Human values and the design of computer technology*. Cambridge University Press, Cambridge and New York, 21–40, 1997.

[9] C.P. Knobel & G.C. Bowker. Values in design. *Communications of the ACM*, *54*(7), pages 26–28, 2011.

[10] C.A. Le Dantec, E.S. Poole, & S.P. Wyche. Values as lived experience: evolving value sensitive design in support of value discovery. CHI '09, 1141–1150, 2009.

[11] N. Manders-Huits & M. Zimmer. Values and pragmatic action: the challenges of introducing ethical intelligence in technical and design communities. *International Review of Information Ethics*, *10*, 37–44, 2009.

[12] M. Ratto. Critical making: Conceptual and material studies in technology and social life. *The Information Society*, *27*(4), 252–260, 2011.

[13] P. Sengers, K. Boehner, S. David, & J. "Jofish" Kaye. Reflective design. CC '05, 49–58, 2005.

[14] Shilton, K. (2012). Values levers: building ethics into design. *Science, Technology & Human Values*.

[15] K. Shilton, J.A. Koepfler, & K.R. Fleischmann. Charting sociotechnical dimensions of values for design research. *The Information Society 29* (5), 2013.

[16] K. Shilton, J.A. Koepfler, & K.R. Fleischmann. How to see values in social computing: Methods for studying values dimensions. CSCW '14, 2014.