

Discussing Feminist Thinking as an Exemplar for Ethical Reflection in the Tech Classroom

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ABSTRACT

In this position paper, we set out to examine the role of ethics in HCI teaching as a source of reflection for students to draw on. We describe examples inspired by experiences from our own teaching where better scaffolding of ethical reflection would be beneficial. Using feminist HCI principles, we exemplify the value of providing students with an ethical framework as a tool for reflection. We further outline three challenges we see with regards to including ethical thinking in teaching for tech education.

KEYWORDS

Tech education, ethics, teaching, feminist HCI

ACM Reference Format:

Nathalie Bressa and Ida Larsen-Ledet. 2021. Discussing Feminist Thinking as an Exemplar for Ethical Reflection in the Tech Classroom. In *CHI '21 workshop on Co-designing Resources for Ethics Education in HCI, May 09, 2021, Yokohama, Japan*. ACM, New York, NY, USA, 4 pages. <https://doi.org/10.1145/nnnnnnn.nnnnnnn>

1 STORIES FROM THE CLASSROOM

I am my own target user. We were teaching a course, in which the students had to select a project idea and target user group themselves, under guidance from the teaching assistants. We encouraged the students to select a target user group that did not include themselves or which was broader than their own demographic. Yet, in a class with 15 groups, ten of the groups chose their own demographic, young adults, as the target user group – often even as particular as “young adults studying at our university”.

Simplistic and unfounded assumptions. In a presentation about their design, a group of students argued that since their target users were young, they would be experienced users of online messaging applications and so there would be no need to include accessibility features (confusing age, (in-)experience, and (dis-)ability, and simultaneously neglecting young users in need of accessibility features).

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CHI '21, May 09, 2021, Yokohama, Japan

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ACM ISBN 978-x-xxxx-xxxx-x/YY/MM... \$15.00

<https://doi.org/10.1145/nnnnnnn.nnnnnnn>

Profit over social change. Some students had come across a statistic showing that many new students in their department feel lonely during their first year. They therefore decided to make an app that would help students feel welcome and engage with each other. They decided to design the app with Danish students in their early 20s as the target group, based on a report saying that 94 % of students in the department were Danish and so that would “likely be the most profitable group to target”. They did not discuss the fact that another statistic in the report said that the students who experience loneliness to the largest degree are international students who do not speak Danish.

Technosolutionism. A group proposed an app that would use location tracking to help homeless people discover nearby food stamp services or free healthcare services. A classroom discussion, however, brought their attention to news stories about location tracking being used to harass marginalized groups, prompting the group to radically rethink their idea.

Morally questionable designs. Another group came up with an app that would show how many women were currently present in a bar to enable the app users to determine which bar would be the best place to pick up girls. In another example, for a workshop on ethical dilemmas in machine learning, high school students suggested an app that would estimate women’s breast sizes from photos [3].

2 THEY PROBABLY JUST NEVER THOUGHT ABOUT IT

The scenarios above are fictive, with the exception of the very last one. They are based on real episodes from our own and other HCI researchers’ experiences with or as students. Although none of those projects were intended to be carried out as real design and development efforts, they connect directly with many actual products and stories from industry. Author Sara Wachter-Boettcher [20] provides a cohort of examples, from discriminatory designs such as a photo filter turning users into yellowface caricatures or keycard software preventing a woman pediatrician from entering the women’s locker room in a gym, based on the assumption that a person with the title *Dr.* must be a man; to neglect for users outside a tacitly assumed norm, such as voice assistants responding to expressions of suicidal tendencies with jokes. In some cases, designers and developers ignored thorough market research, and in other cases they had seemingly not even cared to do it. After recounting numerous such examples, Wachter-Boettcher argues that the designers most likely did not intend to, in the presented cases,

enforce existing biases. Rather, she states, they likely “just never thought about it” [20, p. 38]. While we must also address and work to prevent decidedly unethical practices in the tech industry and research, what we want to suggest here is that a better understanding of ethics can also be the foundation of more thoughtful technology — that is, technology that does harm because its creators did not take the time to think or did not engage in the necessary level of reflection.

Recounting how color film could not adequately capture dark skin tones until furniture manufacturers expressed the need to photographically portray mahogany, Roth [17] suggests that cases like that stem from a lack of a critical consciousness of how we think about race; again, finding the cause in lack of reflection. Roth’s discussion, furthermore, emphasizes the impact that technology has on society, reaching far beyond individual experiences with particular products, and she advocates for a shift in which the *quality* of a product has diversity and adaptability as its defining features.

Roth is not alone in finding that this is not currently the case [15, 16, 20]. Putnam et al. [15] found that among 199 HCI professionals, most reported considering accessibility to some extent, but 10 out of the 12 developers in the survey reported themselves to have low or no consideration for accessibility in the technology they create. Rosales and Fernández-Ardèvol [16] identify several examples of ageism on digital platforms, speculating that homophily in development teams leads to a disregard for other groups of people than “young, educated men with above-average salaries and a keen interest in technologies” [16, p. 1081]. Again pointing to the need for more thorough reflection, UX researcher Gayna Williams [21] argues that the key to designing for more diverse populations is to raise awareness of the consequences of missing perspectives and to get design and development teams to employ methods that amplify the voices of user groups that are not (well-) represented in the team.

Lack of awareness or concern seems to be a major culprit in the examples described here, whether conscious or not. In some cases, such as our first story, we additionally see a lack of engagement with the challenge of designing for other people than oneself. While some would argue that the classroom examples are not representative of what students may choose to do once they find themselves creating technology that will be deployed in the real world, we cannot help but worry: Who will pay the price of inexperience out in the real world if that inexperience has not been challenged in the classroom?

Some of the arguments presented in this section suggest that while problematic designs may, in part, be rooted in a lack of motivation among designers and developers, such motivation may be found through awareness and reflection. One question then becomes: What tools can we provide students with, to help them become reflective practitioners?

3 EMPLOYING FEMINIST ETHICS TO DEVELOP HABITS OF REFLECTION

We propose that ethical frameworks may provide students with scaffolding for reflection and reasoning. We view this in broader terms than morals or legal compliance [13, 22]: Underlying different schools of ethics are different conceptions of value(s) and

and different framings of relationships between people and their surroundings, as we will get into below. We believe that by getting to know ethical frameworks, students will be able to develop better means for reflection. Additionally, having students explore different schools of ethics could provide a lesson in itself, by showing students how different the world can look through different ethical lenses. Below, we discuss how feminist ethics could be one such lens and what value it holds for HCI education (see also Parvin & Pollock for a related discussion [13]).

We are not claiming to be innovative in suggesting that students should know of ethical or philosophical frameworks to support their thinking — this is common in many university educations; but regrettably not sufficiently in technology-oriented fields. And when ethics are addressed, we have experienced it being plastered onto courses in a single lecture or through a couple of simplistic exercises, making it into an afterthought rather than a way of thinking that permeates discussion and decision-making. Through the discussion below, we aim among other things to show the value of integrating ethical frameworks with HCI education (also noted by, e.g., Fiesler et al. [4]).

In her paper on Feminist HCI, Bardzell [1] argues for drawing on feminist principles for interaction design as part of a Feminist HCI research agenda. She proposes a number of qualities that compose feminist interaction design including pluralism, participation, advocacy, ecology, embodiment, and self-disclosure. As Bardzell points out, these qualities are not uniquely associated with feminist theory and are also present in other existing areas in HCI, such as experience design. Following these considerations, Bardzell and Bardzell [2] outline a feminist HCI methodology drawing upon feminist principles to shed light on epistemological and methodological concerns for HCI research. We draw on these research perspectives on including feminist perspectives into HCI practice as a framework for students to facilitate ethical thinking and reflection on technology. In the following, we will apply the lens of feminist HCI qualities to the issues we have previously identified in our teaching to showcase how they can help students identify ethical issues in their designs.

One of our identified issues were difficulties for students to see beyond their own experiences and assumptions when designing technology in class. We think that a *pluralist* lens would be helpful for them to include other perspectives when thinking about possible target users and to resist the notion that their own experiences are universal. Furthermore, providing a critical perspective on commonly taught HCI principles like “universal usability” [1] can be a way to reframe often unfounded assumptions about target users and to avoid defaulting to seeing oneself as the primary point of reference.

Another issue we have seen in our teaching is a tendency to base decisions on the status quo without considering whether it is actually desirable. The quality of *advocacy* highlights the importance of questioning the status quo and can thus be a vehicle for challenging assumptions such as the best solution being the most profitable one. Simultaneously, advocacy involves engaging with the risk of uncritically imposing one’s own values; in sum, it scaffolds a polyvocal design dialogue that can support students in a more empathic engagement with their own designs, potentially also helping them realize when a design is morally questionable.

Finally, the often common technosolutionist standpoint, that any problem can be solved through a technological solution, can be countered by teaching students about the value and importance of *participatory* methods when designing technology. Instead of assuming that one's own perspective is universal, participation is key to understanding other people's standpoints and needs when designing technology.

Using a feminist perspective on HCI is not the only possible lens to address ethical concerns in HCI teaching. Other perspectives such as postcolonial computing [8], anarchist HCI [9], and critical race theory in HCI [12] are other possible valuable lenses to reflect on ethical concerns when creating technology as part of teaching. An ethical theory to work with, is also ethics of care [7] to provide students with a more general framework of concretely thinking about moral decisions.

4 CHALLENGES

In addition to appreciating the value that perspectives like the ones mentioned above can provide, and developing ways of including them in education, we must address the practical concern of making room for ethics and doing so beyond HCI education, and we must reflect critically on how we frame the need for ethical thinking when bringing it up with students. We conclude by briefly outlining these challenges below, as an outset for further discussion.

1. Making room for ethics in teaching. In many programs, HCI is only one of several subjects taught (such as in computer science or service design programs). With only a couple of courses devoted to the subject, HCI educators are faced with including ethics in an already stuffed curriculum. As a consequence, we find that ethics (and other subjects not considered "core") currently tends to be "tacked onto" the curriculum in a dedicated lecture or through a few explicitly ethics-focused exercises, rather than being integrated into the general teachings. By not actively including ethics in the general course work, we deprive students of a chance to practice ethical thinking in relation to their craft. We therefore encourage the development of ethics curricula that lend themselves to continuous integration into teaching on other topics, as done by, e.g., Saltz et al. [18] and Grosz et al. [6]. Some programs devote room for a full ethics course, but such stand-alone courses risk forcing the link between ethics and practice that contextualizing ethical thinking in other courses can provide more naturally [18].

2. Encouraging ethical thinking in tech more broadly. Many cases, such as the programmatically embedded sexist assumptions in Wachter-Boettcher's keycard example [20], show that ethical reflection has relevance beyond what is usually taught in the field of HCI. Rooted in our stance that teaching ethics can foster not only more morally sound designs but, just as importantly, higher awareness of the potential effects of new technology, we join the call [4, 5, 19] for other areas of tech to adopt ethical thinking into their teaching. If ethics teaching is confined to HCI courses, this risks promoting a perception that ethics is only of concern for HCI practitioners and not their colleagues in other areas of tech. We should strive for ethics to become a topic explored in tech education beyond the HCI classroom, through dialogue between HCI educators and educators in other areas of technology.

We also acknowledge that it may be a challenge to get some students of technical subjects to engage with ethical thinking in their education (related to the challenge of getting them interested in HCI [10]). Fiesler et al. [4] suggest that reminding students about the power and responsibility that come with their craft could combat the mindset that it is not their job to deal with ethics. Based on a similar reasoning, Skirpan et al. [19] argue that integrating ethics education throughout the development of computing skills is necessary if we wish to nurture ethics as a core concern in computing sciences, highlighting the tight connection between *making room for ethics in teaching* and *encouraging ethical thinking in tech more broadly*. In our experience from teaching HCI to computer science students, the resistance against "soft" topics, such as ethics, is for many of them connected with a discomfort or frustration with ambiguity and nuances that can (and often should) not be settled. However, we posit that working with ethical thinking could, in fact, give students tools and habits to deal with nuance (although step-by-step procedures have been proposed [14], we hesitate to recommend such prescriptive approaches that may give the unfortunate illusion that real-world nuance can be addressed with a formula). Part of the challenge is, thus, to develop good points of entry to this chicken-and-egg situation: addressing resistance to ethics teaching by teaching ethics.

3. Motivating concern for ethics — a question of profit? We must consider how we frame the need to engage in ethical thinking. It is tempting to look for up-front arguments for why students should engage with the material presented to them, in particular when fearing or faced with disinterest. We often encounter what we have come to call the "profit argument", used by, e.g., Williams and others [11, 21] who argue that the tech industry should pay more attention to diversity because it will result in more successful products. While this argument may (or may not) be a route to convincing otherwise disinterested students to pay attention, we should question what other implications it has. If students are told to reflect critically on their work because it will produce a profit, what does that tell them about situations where making an ethically sound choice is not profitable or where unethical choices may even be the most profitable?

It is unrealistic to argue against attention to profit in industry. What we are arguing is that using profit as an argument for engaging in ethical reflection puts the notion of ethics on shaky ground. We point this out to highlight the necessity of designing ethics curricula that help educators deal with the question of motivation.

ACKNOWLEDGMENTS

We want to thank our colleagues at Aarhus University for their valuable input, examples from their own teaching, and different perspectives that helped us shape this essay.

REFERENCES

- [1] Shaowen Bardzell. 2010. *Feminist HCI: Taking Stock and Outlining an Agenda for Design*. Association for Computing Machinery, New York, NY, USA, 1301–1310. <https://doi.org/10.1145/1753326.1753521>
- [2] Shaowen Bardzell and Jeffrey Bardzell. 2011. Towards a Feminist HCI Methodology: Social Science, Feminism, and HCI. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems* (Vancouver, BC, Canada) (CHI '11). Association for Computing Machinery, New York, NY, USA, 675–684. <https://doi.org/10.1145/1978942.1979041>

- [3] Karl-Emil Kjær Bilstrup, Magnus H. Kaspersen, and Marianne Graves Petersen. 2020. *Staging Reflections on Ethical Dilemmas in Machine Learning: A Card-Based Design Workshop for High School Students*. Association for Computing Machinery, New York, NY, USA, 1211–1222. <https://doi.org/10.1145/3357236.3395558>
- [4] Casey Fiesler, Natalie Garrett, and Nathan Beard. 2020. What Do We Teach When We Teach Tech Ethics? A Syllabi Analysis. In *Proceedings of the 51st ACM Technical Symposium on Computer Science Education* (Portland, OR, USA) (SIGCSE '20). Association for Computing Machinery, New York, NY, USA, 289–295. <https://doi.org/10.1145/3328778.3366825>
- [5] Colin M. Gray and Elizabeth Boling. 2016. Inscribing ethics and values in designs for learning: a problematic. *Educational Technology Research and Development* 64 (Aug. 2016), 969–1001. <https://doi.org/10.1007/s11423-016-9478-x>
- [6] Barbara J. Grosz, David Gray Grant, Kate Vredenburg, Jeff Behrends, Lily Hu, Alison Simmons, and Jim Waldo. 2019. Embedded EthiCS: Integrating Ethics across CS Education. *Commun. ACM* 62, 8 (July 2019), 54–61. <https://doi.org/10.1145/3330794>
- [7] Virginia Held. 2006. *The ethics of care: Personal, political, and global*. Oxford University Press on Demand.
- [8] Lilly Irani, Janet Vertesi, Paul Dourish, Kavita Philip, and Rebecca E. Grinter. 2010. *Postcolonial Computing: A Lens on Design and Development*. Association for Computing Machinery, New York, NY, USA, 1311–1320. <https://doi.org/10.1145/1753326.1753522>
- [9] Os Keyes, Josephine Hoy, and Margaret Drouhard. 2019. Human-Computer Insurrection: Notes on an Anarchist HCI. In *Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems* (Glasgow, Scotland Uk) (CHI '19). Association for Computing Machinery, New York, NY, USA, 1–13. <https://doi.org/10.1145/3290605.3300569>
- [10] Ida Larsen-Ledet, Nathalie Bressa, and Jo Vermeulen. 2019. Reflections on Teaching a Mandatory HCI Course to Computer Science Undergraduates. In *Proceedings of the 2019 EduCHI Symposium on HCI Teaching and Learning*.
- [11] Jane Margolis and Allan Fisher. 2002. *Unlocking the Clubhouse: Women in Computing*. The MIT Press.
- [12] Ihudiya Finda Ogbonnaya-Ogburu, Angela D.R. Smith, Alexandra To, and Kentaro Toyama. 2020. Critical Race Theory for HCI. In *Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems* (Honolulu, HI, USA) (CHI '20). Association for Computing Machinery, New York, NY, USA, 1–16. <https://doi.org/10.1145/3313831.3376392>
- [13] Nassim Parvin and Anne Pollock. 2020. Unintended by Design: On the Political Uses of “Unintended Consequences”. *Engaging Science, Technology, and Society* 6 (Aug. 2020), 320–327. <https://doi.org/10.17351/ests2020.497>
- [14] D. Peters, K. Vold, D. Robinson, and R. A. Calvo. 2020. Responsible AI – Two Frameworks for Ethical Design Practice. *IEEE Transactions on Technology and Society* 1, 1 (2020), 34–47. <https://doi.org/10.1109/TTS.2020.2974991>
- [15] Cynthia Putnam, Kathryn Wozniak, Mary Jo Zefeldt, Jinghui Cheng, Morgan Caputo, and Carl Duffield. 2012. How Do Professionals Who Create Computing Technologies Consider Accessibility?. In *Proceedings of the 14th International ACM SIGACCESS Conference on Computers and Accessibility* (Boulder, Colorado, USA) (ASSETS '12). Association for Computing Machinery, New York, NY, USA, 87–94. <https://doi.org/10.1145/2384916.2384932>
- [16] Andrea Rosales and Mireia Fernández-Ardèvol. 2020. Ageism in the era of digital platforms. *Convergence* 26, 5-6 (2020), 1074–1087. <https://doi.org/10.1177/1354856520930905> arXiv:<https://doi.org/10.1177/1354856520930905> PMID: 33239961.
- [17] Lorna Roth. 2009. Looking at Shirley, the Ultimate Norm: Colour Balance, Image Technologies, and Cognitive Equity. *Canadian Journal of Communication* 34, 1 (March 2009). <https://doi.org/10.22230/cjc.2009v34n1a2196>
- [18] Jeffrey Saltz, Michael Skirpan, Casey Fiesler, Micha Gorelick, Tom Yeh, Robert Heckman, Neil Dewar, and Nathan Beard. 2019. Integrating Ethics within Machine Learning Courses. *ACM Trans. Comput. Educ.* 19, 4, Article 32 (Aug. 2019), 26 pages. <https://doi.org/10.1145/3341164>
- [19] Michael Skirpan, Nathan Beard, Srinjita Bhaduri, Casey Fiesler, and Tom Yeh. 2018. Ethics Education in Context: A Case Study of Novel Ethics Activities for the CS Classroom. In *Proceedings of the 49th ACM Technical Symposium on Computer Science Education* (Baltimore, Maryland, USA) (SIGCSE '18). Association for Computing Machinery, New York, NY, USA, 940–945. <https://doi.org/10.1145/3159450.3159573>
- [20] Sara Wachter-Boettcher. 2017. *Technically wrong : Sexist Apps, Biased Algorithms, and Other Threats of Toxic Tech*. W.W. Norton & Company, Inc, New York.
- [21] Gayna Williams. 2014. Are You Sure Your Software is Gender-Neutral? *Interactions* 21, 1 (Jan. 2014), 36–39. <https://doi.org/10.1145/2524808>
- [22] Richmond Y. Wong, Karen Boyd, Jake Metcalf, and Katie Shilton. 2020. *Beyond Checklist Approaches to Ethics in Design*. Association for Computing Machinery, New York, NY, USA, 511–517. <https://doi.org/10.1145/3406865.3418590>