Kjrsten Holt
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Technical Communication
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Literature Review

How might we integrate ethics issues into undergraduate UX curricula?

Introduction

This review of peer-reviewed literature asks: “How are problems of ethics currently integrated into user-experience design curricula?” Initiated by a search of scholarly databases for the terms “user experience” and “ethics,” the results expand to encompass the history of UX as an academic subject, its ties to rhetoric and technical communication, and aspects of teaching ethics within related fields such as computer science and human-computer interaction. The topic of *accessibility* as an ethical issue is noted as an important area of ethical concern in digital media.

I want to find out how other instructors in the user-experience field are teaching ethics, and also research current ethical practices within industry that can inform this teaching, with the goal of developing an ethics-infused curriculum for an undergraduate course in user experience at a two-year career and technical college.

Survey of the literature

Of the twelve articles chosen for inclusion in this literature review, eight of them are written from the educational/pedagogical perspective, and four articles are industry-focused, providing information and insights on how ethical concerns are managed by user-experience practitioners currently working in the field. Most of the education-focused articles consist of case-studies of classroom activities and are published in academic journals such as *Technical Communication Quarterly* and *Communication Design Quarterly*. Some of the papers come from conference proceedings, such as the *ACM International Conference on the Design of Communication.* Most of the articles are authored by doctoral candidates or PhD holders. Four articles deal with the teaching of computer science topics, such as programming and data science (instead of UX specifically). Since the practice of user-experience design is mainly associated with digital products and services: "The central outcome of the UX process is the design of a digital product or service," (Getto et al., 2016), it makes sense to include these articles in the review.

What are the ethical issues raised?

A variety of specific ethical issues are raised in the literature. *Accessibility* in digital design is one of the better-known considerations. (Accessibility means making sure that the website, system or application is usable by a wide range of potential users, including people with disabilities, and is regulated by law in many countries). The "usual" accessibility conversations are about screen-readers, readability and color contrast and assistive technologies, but Putnam et al. (2016) adds consideration of video captioning and audio description required by the 21st Century Communications and Video Accessibility Act (CVAA).

Another common consideration is *data privacy*, how to protect users from having their personal data used without consent. This was a common concern for computer science instructors. Shapiro et al. (2020) claim that there is a particular gap in teaching data ethics. Instead of the concepts of rights, virtues or consequences seen in Kantian ethics (Layne, 2020), Shapiro et al. advocate an ethics of care, "concerned with concepts of shared responsibility and attentiveness to the interdependent nature of inequality and vulnerability that are embedded in our socio-technical systems."(Califf et al., p. 2) The other programming-oriented articles addressed software safety, software quality, quality of documentation, software correctness, ownership of code, and on-the-job personnel issues as topics for classroom instruction. (Califf et al., 2005).

Fansher, et al. (2018) and Gray, et al. (2019) focus on "*dark patterns,*" which are deceptive design practices and interfaces (often websites) that employ "falsely persuading design practices" to trick users into doing something. Fansher, et. al describe five general types of deception identified through thematic analysis: *forced action*, *interface interference*, *nagging*, *obstruction* and *sneaking*.

The 2019 paper by N. Shalamova takes accessibility and inclusion to a global audience with strong arguments for digital inclusion, localization and translation and the need to avoid marginalization of digitally disadvantaged communities. The article investigates existing literature on UX pedagogy and looks at design practices at Google, Microsoft, Apple, IBM, and Samsung. This work is "extended beyond accessibility codes" and "inclusive of human diversity, neurodiversity, world cultures, varying levels of access to technology or connectivity. Ultimately, the philosophy of global UX is *UX design for social good*." (Shalamova, p. 1).

Industry studies, practitioner voices

In addition to articles focused on teaching, some of the sources interrogate current practices of user-experience practitioners as they wrestle with ethical issues in their work. K. Shilton's 2013 study describes her experience working in the Center for Embedded Networked Sensing (CENS) at UCLA. The lab develops location and behavioral tracking apps for mobile devices. Her research led to the identification of certain practices, dubbed "values levers," that can help engineers agree on the social values to be upheld during the design process and encourage ethical reflection. These points of conversation could be adapted to a classroom setting.

Gray, et al. (2019) undertakes a case study of three UX practitioners in enterprise, agency (in-house) and agency (remote) situations as they negotiate ethical dilemmas. The authors emphasize the pedagogical value of relating actual practices of current UX professionals, rather than invoking hypothetical situations, or relying on the practices used by other technical communication instructors.

A comparatively early (2001) paper by M.J. Salvo "investigates dialogic ethical principles developed in rhetoric theory that inform and support collaborative design" (Salvo, p. 274) and describes three different approaches to participatory design: Pelle Ehn's Participatory Design, Roger Whitehouse's tactile design of signage with/for blind people, and the design of an online writing program. Participatory design means the user's needs are ethically accounted for. By engaging in dialogue with users as equal members of the design team, "Dialogic ethics becomes a counterpoint to the ethic of expediency which so often drives technology design." (Salvo, p. 276). While this approach has not seen mainstream adoption, it is in some ways an ideal solution and could be incorporated in interdisciplinary service-learning projects.

Specific educational activities: experiential vs. didactic

In the educationally focused articles, professors used a variety of methods to present ethical content. At one end of the spectrum was the experiential approach of Shapiro et al.'s "Re-Shape" project, in which students programmed an application and also tested it with each other, leading to the creation of detailed maps that traced their every move, in or out of class. The students themselves were the data collectors, and the "victims" of data-collection.
In another example of experiential learning, students in Putnam, et al. (2016) use accessibility tools, assistive technology (such as screen-readers) and simulated disabilities to understand the importance of digital accessibility. Other "real world" activities include designing prototype websites and applications while adhering to accessibility and other ethical guidelines. Another experiential approach is job-shadowing/apprenticeship, as described by Getto et. al (2016). Advocates of the experiential approach would agree that "The UX design process requires an immersive approach beyond a sole focus on research methods and usability evaluation." (Rose et al., 2017, p. 90).

At the other end of the spectrum are programs where students react to case studies, discuss readings, or engage in reflective writing. In Califf et al. (2005), the ethical issues presented in a computer programming course included hypothetical cases such as an employee asked to fake functionality in a software demo to an acquiring company, and an ethical dilemma in which a firm that charges customers for server time will lose revenue if they become more efficient. In Putnam et al. (2016), instructors present guest speakers, field trips and the use of videos/movies for class discussion on accessibility topics.

Barriers to realizing ethics education in practice

Many of the reviewed works discussed barriers to adding ethics studies to user-experience and computer-science curricula. One of the problems centers around time constraints. A single stand-alone course in ethics is seen as not ideal: “In the past decade, there has been a definite interest in how to 'do ethics' in computing curricula. [...] However, the majority of the resources were directed primarily at teaching ethics and social issues in a separate course rather than integrating ethical issues into technical courses.” (Califf, et al., 2005, p. 348). Several authors advocate threading ethics content into several or all courses within a program – “teaching ethics outside of a technical context often leaves students with the impression that the material is irrelevant to them” (Skirpan et al., 2018. p. 941). In addition, several sources mentioned that a lack of a comprehensive textbook and course materials hindered instructors’ ability to teach the subject efficiently.

Apparently, the field struggles with attracting students to ethics-centric curricula: in Putnam, et al. (2016), an MS program in Digital Inclusion at Middlesex University (UK) and an MS in Web Sciences (Barrier-free Web Design) at University of Linz (Austria) have both closed due to lack of enrollment.

Offering opportunities for students to work experientially to make ethical decisions and examine consequences seems to be desirable, but this is time-consuming and labor-intensive for faculty. Teaching ethics is difficult to systematize since all situations are specific and contextual – and case studies will never have totally complete information. (Layne, 2020). “The truth is that if we want students to intuitively consider user experience, we must explicitly and structurally embed it in the native context of design itself.” (Zhou, 2014, p. 26).

Recommendations from the literature

In their conclusion statements, most of the authors call for more research in this area. Shalamova (2019) points to a gap in research and course materials and calls for more attention from academic community: "A shared framework of what constitutes key global UX competencies and topics would benefit both UX theory and pedagogy." (p. 1). Califf, et al. (2005) recommends teaching ethics via case studies that are short and comprehensible, and that have relevance to the student and the course. Rose et al. (2017) and Getto et al. (2016) advocate that students learn from UX practitioners, either through observation and interviews or actual apprenticeship. Direct experience for students as practitioners and users is what Salvo (2001) and Shapiro, et al. (2020) recommend. Several authors shared sample projects and course outlines.

Conclusions

This literature review provides a broad snapshot of how user experience (UX) and ethics are viewed and taught within higher education. There are several project ideas and techniques that I would like to test out in my own classes. Resources like Harry Brignull’s *darkpatterns.org* (Fansher et al., 2018) and the website "Mapping Self in Society" (formerly "Re-Shape") for

educators (Shapiro et al., 2020) are valuable learning resources. In line with the need for a curriculum that supports diversity and inclusion, global UX concerns from Shalamova's (2019) would be great to incorporate into a project. Interdisciplinary teams could be simulated in group projects, and projects that involve user testing could follow the informed consent protocol. Collaborating with other student groups as "clients" would provide practice in participatory design (Salvo, 2001).

Opportunities for future research include reviewing the popular press for current books on ethics in user experience. (This literature review concentrated on peer-reviewed sources.) More research could investigate philosophical ethics as applied to digital media: one example might be from Kantian ethics: "people are never to be treated as means to an end, but as the ends themselves" (Layne, 2020).

After more research (adding popular books and industry website articles), I plan to implement several ethics "interventions" in my class *User Experience – UX Design* and write about the outcomes. In some ways, this will be similar to the papers already reviewed on this topic, but aspects of novelty include the very recent proliferation of free accessibility tools (voice dictation, screen readers, auto-captioning), and the fact that this course is aimed at undergraduate students in a two-year technical program (as opposed to graduate programs as most of these sources describe).

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