HCI education reflects the continual evolution of HCI, embracing the changing landscapes of technology, infrastructure, and technology use. This forum aims to provide a platform for HCI educators, practitioners, researchers, and students to share their perspectives, reflections, and experiences related to HCI education. **— Sukeshini Grandhi, Editor**

Digital Civics Goes Abroad

Colin M. Gray, Austin L. Toombs, Marlo Owczarzak, and **Christopher Watkins,** Purdue University

In the past decade, HCI scholars have increasingly adopted framings of design activity that do not rely upon the pairing of users to designers. Historical approaches such as participatory design and co-design have become more acceptable and mainstream; some have even suggested that user-centered design as we know it is dead [1] and should be replaced by approaches that instead value the full complexity of stakeholders who are present in each design situation.

One of the most substantial approaches to reconfiguring design practices in HCI has come through the creation of an approach known as *digital civics* [2]. In a digital civics framing, users are supported as citizens, and designers take on the role of facilitator and activist in co-creating systems that support participation and co-design activities among all stakeholders. While this approach, and others like it, have produced substantial design and civic outcomes in Europe and the U.S., many of these efforts have been led by researchers, with little impact on undergraduate design education.

In 2015, a diverse group of faculty at Purdue University in Indiana, including the first two coauthors, partnered to create one of the U.S.'s first comprehensive undergraduate majors in user experience (UX) design [3]. Since the founding of the program, we have designed numerous activities and projects into a series of design studios to encourage the development of empathy and intercultural awareness. As part of this program, we created a series of learning strands that wove throughout the curriculum, including a strand called "global consciousness."

We extended this approach in May 2018 when we organized a study-abroad trip to Open Lab in Newcastle-upon-Tyne, England, to experience and engage in digital civics work on the ground. In this article, we describe students' experiences while on this trip, identifying ways in which the experience promoted identity transitions that more fully account for design as a social good.

TRAINING UX DESIGNERS IN DIGITAL CIVICS

Digital civics approaches have been increasingly popular in supporting HCI research but have been underinvestigated within a pedagogical framing. This shift from research to pedagogy is important to the future of design work, identifying opportunities for students to engage not only in commercial, capitalist-focused design work, but also in work that positively impacts society.

Insights

- → UX students were motivated to apply their skills in a community context.
- → Pairing digital civics with study abroad magnified the need to develop empathy with users *and* their social and cultural context.
- → Engagement in digital civics projects shows promise in shaping students' design identities and awareness of designing for social good.

In this article, we document a study-abroad trip from Purdue University to the U.K., where 13 undergraduate and graduate UX students were divided into teams and participated in design sprints with sponsorship by Open Lab researchers over a 10-day period. While we do not have the space to go into depth on our findings from the sprints, the collected descriptions of student experiences are derived from a rich set of data collected prior to the study abroad, throughout the study-abroad experience, and in interviews conducted several months after the trip. This data takes the form of written reflections, group oral reflections, artifact analysis, and interviews, through which we describe the ways in which students conceptualized their identity as a designer [4] and refocused their identity in relation to a broader role they might play in society.

BUILDING EMPATHY AND RECOGNIZING INTERCULTURAL DIFFERENCE

The goal of the organizers—two faculty who teach UX design at Purdue University—was to engage students in a global experience that increased awareness of intercultural capacity and understanding of difference. Both Colin and Austin had prior experience with digital civics at Open Lab, Colin as a visiting researcher and Austin as a former postdoc at the lab and a current visiting researcher. We explicitly leverage this relationship and focus on digital civics in our undergraduate studios at Purdue, particularly in the second year of study, where students

IMAGE BY LARRY MCGUIRK

read about digital civics [2] and engage in a six-week project with a community partner chosen by each team. Our hope was to link the students' experience with digital civics in a U.S. context to the larger and more developed civic relationships that Open Lab has formed.

A diverse group of students and projects. Thirteen students joined us on the study-abroad project in May 2018, including 11 undergraduate students and two graduate students. The graduate students and one of the undergraduate students had no previous experience with digital civics, while the rest had engaged in a digital civics project in their second year of study and had at least some exposure to co-design and participatory approaches to design activity. The students represented multiple ethnicities and countries of origin, with two students from China, one student from the Philippines, and one student from England. Of the students from the U.S., several represented non-Caucasian ethnicities, including African-American, Indian, and Pacific Islander. Ten of the 13 students identified their gender as female; the remaining students identified as male. The majority of students had not traveled extensively. For several, it was the first trip outside of the U.S.

Prior to the trip, students learned about projects under way at Open Lab, and they expressed their interest in multiple projects that were used to inform final team composition. The projects represented a broad cross-section of contexts, outcomes, and maturity of community engagement (Table 1). Some projects were just beginning (e.g., North East Domestic Violence), while others were extensions of completed systems (e.g., What Futures?, Sense My Street), providing opportunities for students to engage in many points along the development timeline.

All the study-abroad students experienced some substantial self-reported change in design identity.

EXPLORING DESIGN IDENTITY TRANSITIONS

All the study-abroad students experienced some substantial self-reported change in design identity, with most changes focused on their greater awareness of the social power of engaging in civically motivated design activity. We will briefly highlight a few themes that we identified from post-trip interviews with eight students, triangulated from other reflections throughout the trip.

Shifting from traditional capitalist user-centered design. All the students noticed the shift from traditional forms of user-centered design, where a client or organization's goals are central, to the goals of improving societal issues with the aid of many stakeholders. As one of our graduate students noted, "None of the projects they were doing were necessarily revolutionary, trying to change the world, but taking a look at what's [happening in] in your community was really nice…being able to focus in on almost micro problems that exist and that will have real impact if they're just improved a tiny bit." This increased focus on local issues

Topic	Focus of Work	Outcomes
What Futures?	Identifying ways of creating access to a repository of data from the International Red Cross and Red Crescent Societies	A series of wireframes indicating pathways for the navigation, filtering, and generative use of data
Sense My Street	Improvement of an existing system that tracks incidences of cyclist accidents on city streets, with the goal of improving public policy	A series of mockups indicating possible areas of improvement to user flows and generation of policy consensus
North East Domestic Violence	Creation of a website that allows people affected by domestic violence to locate resources and assistance	A clickable prototype indicating user flows for rapid or extended use
Loneliness Among Older Adults	Identifying opportunities for supporting socialization among older adults	Creation and execution of a co-design workshop, resulting in insights for future development
Relational Food	Identifying means of improving awareness of food quality and nutrition	Creation and execution of a co-design workshop, resulting in insights for future development

Table 1. Project teams, focus of work, and outcomes.

A student preparing for preliminary user testing as part of the Relational Food team's workshop.

Sketching and storyboarding activities from the What Futures? team.

allowed students to perceive their role as designers differently from how they might in corporate projects, where they would be accountable primarily or only to a client. An undergraduate student took this sentiment even further, explaining, "I just want to help people now. I just really want to help people and communities and I really don't care about money or consumerism." In expanding her view from corporations to broader social concerns, she reflected the sentiment of many of the students in realizing the power of a digital civics approach, noting: "It just impacts people so much more and that just spreads. It makes things better."

Defamiliarization and changing global perspectives. Although we had a diverse group of students, several of whom were well traveled, for many of them it was their first time traveling without parents. This realization of different experiences caused many students to reflect on their limited exposure to other cultures, and the value of viewing themselves as Americans through this broader global lens. One undergraduate male told us, "I definitely don't want to forget that I am very small in a global sense," while another graduate student from England noted that this experience helped them to "realize the disconnects [in combating stereotypes about one's own country] and also [that] you can kind of work together to bring about change as well." For others, the primary source of defamiliarization was the reconfiguring of the designer and user roles; one undergraduate senior explained: "I think the biggest change for me was the philosophy that citizens

are their users…it's like, what is best for the citizen." Another undergraduate student concurred with this shift from a process perspective, explaining it as a change in mindset that must be culturally aware: "We have to understand that culture first, because that's where a lot of the problems could have come from. So…it's more than just asking them what the problem is…it's more like actually understanding how… they do things every day."

Identifying a civically focused future career trajectory. Several students came to the realization during the trip that they wanted to be more engaged in non-commercial forms of design, finding comfort in a more civically focused career trajectory. While some students expressed an interest in doing community-focused work in addition to their primary career, others identified a more central role for digital civics in their future career. One graduate student said, "I do want to work in that more society-based environment, working, moving forward.... It kind of felt like a dagger to my heart when I applied for more… commercial-driven roles, because it's really not where I want to be." This also echoes an experience from an undergraduate student: "The biggest impact…was the change in mindset in terms of where I want to go in design and how that impacts people. Which has actually impacted my career choice as of right now because I'm in a big corporate [environment], but I'm really trying to veer off and kind of do things for the community more.... It changed my mindset in terms of how I'm actually impacting people—so why am I doing this and for whom and for what and why?" Another student, who is now planning to pursue graduate study in social work, similarly explained the impact of this experience: "I want to see myself in the future [having] opportunities like this to bring more impact on people and their well-being."

LESSONS AND CHALLENGES

While the overall experience of the trip was successful, several challenges should be highlighted for future digital civics efforts: 1) Identifying active Open Lab projects that could support student work involved a significant amount of coordination. 2) Once these opportunities had been identified, we found that some researchers underestimated students' abilities, resulting in an inconsistent amount of work across the teams working on multiple problem spaces. We circumvented this issue by encouraging students to engage in multiple projects that were of interest to them. 3) Many of the projects involved specialized knowledge about users or community issues that was difficult for the students to attain within the short sprint timeframes.

IMPLICATIONS FOR HCI AND UX PEDAGOGY

We conclude with implications for HCI and UX pedagogy, including opportunities to strengthen identity formation and awareness of civic approaches to design. First, we have realized the value of engaging students in multiple experiences relating to digital civics and participatory approaches to design. While many of the participants had previously engaged in some moderate level of engagement in digital civics work, including the creation of a co-design workshop, this single-course-focused experience did not appear sufficient to allow a realization of the value and potential impact of this type of design work. We propose that students should gain consistent exposure to non-UCD approaches to design, including both theoretical and practical support to strengthen their identity formation as activists and change makers. Second, we have seen first-hand the rapid shift in identity development that is made possible through a study-abroad experience. While many of the methods that the students used in their digital civics project were ones they had already learned in UX courses, the defamiliarization inherent in the new work context forced them to relearn and contextualize these methods within a new identity framing. While not every student is able to have an international design experience such as the study abroad we undertook, identifying opportunities to defamiliarize students and place them in alternate contexts of work appears to have substantial value in building a civically aware design identity.

ACKNOWLEDGMENTS

We would like to thank those who helped us coordinate the projects that our students worked on, including Kyle Montague, Daniel Howard, Aare Puussaar, Thomas Maskell, Rosanna Bellini, Alex Bowyer, Jennifer Liddle, Louis Goffe, Peter Wright, and Patrick Olivier.

ENDNOTES

1. Forlizzi, J. Moving beyond user-centered design. *Interactions 25*, 5 (Sept.–Oct. 2018), 22–23; https://doi.org/10.1145/3239558
2. Olivier, P. and Wright, P. Digital civics: Taking a local turn. *Interactions 22*, 4 (Jul.–Aug. 2015), 61–63. http://doi.org/10.1145/2776885
3. Vorvoreanu, M., Gray, C.M., Parsons, P., and Rasche, N. Advancing UX education: A model for integrated studio pedagogy. *Proc. of the 2017 CHI Conference on Human Factors in Computing Systems.* ACM Press, New York, 2017, 1441–1446; https://doi.org/10.1145/3025453.3025726
4. Gray, C.M. Locating the emerging design identity of students through visual and textual reflection. *Proc. of the Design Research Society.* Umeå, Sweden, 2014, 405.

Colin M. Gray is an assistant professor of computer graphics technology at Purdue University and program lead for an undergraduate major in UX design. He directs the UX Pedagogy & Practice (UXP2) Lab, which is focused on the critical intersections of design practice, education, and society.
→ gray42@purdue.edu

Austin L. Toombs is an assistant professor of computer graphics technology at Purdue University and a core faculty member in UX design. His research interests center on the impact that digital technologies have on how communities are formed and maintained.
→ toombsa@purdue.edu

Marlo Owczarzak is a master's student in computer graphics technology at Purdue University, focusing on UX design.
→ mowczar@purdue.edu

Christopher Watkins is a master's student in computer graphics technology at Purdue University, focusing on UX design.
→ watkin48@purdue.edu

DOI: 10.1145/3301661 COPYRIGHT HELD BY AUTHORS. PUBLICATION RIGHTS LICENSED TO ACM. $15.00