

Chapter 5. Voice of a Community Partner: Challenges and Benefits of Novice Students Conducting Onsite Usability Tests

Billy Kangas
POPE FRANCIS CENTER

Chalice Randazzo
UTAH TECH UNIVERSITY

Abstract. Coauthored by a community partner and a UX educator, this chapter prioritizes the community partner's voice to explore challenges and benefits of having a class of novice students run onsite usability testing at a community site. Challenges included issues of time, space, and people (ethics, expertise, and participant availability). Benefits included buy-in from both students and the organization. Based on these experiences, the chapter provides a list of seven lessons for UX teachers and six lessons for community partners who want to undertake such a project.

A few years ago, Amy Kimme Hea and Rachel Shah (2016) observed that voices of community partners are notably missing from community engagement scholarship; and Shah (2020) recently expanded upon that observation. This dearth, they argued, can lead to reductively thinking about community partners “as ‘others’—outsiders to our classrooms, our goals, and our scholarship” (Kimme Hea & Shah, 2016, p. 49). They called for more perspectives from community partners so that we can create and evaluate courses that truly engage communities. More recently, Carrie Grant (2022) noted that few studies “have measured community outcomes and examined the collaborative tactics that effectively lead to impactful partnerships” (p. 152). Her work added community partners' voices through excerpts of interviews she conducted with them. Importantly for this chapter, Grant (2022) emphasized the need to conceptualize communities and community members as engaged partners more than research participants.

This chapter builds upon that work by featuring a dialogue between Billy Kangas, a community partner, and Chalice Randazzo, a university professor. At the time of our partnership, Billy was director of community engagement at the Community Clinic, a nonprofit organization that provides medical and dental services, a food pantry, and other resources to underserved groups in our community. Part of his job was community outreach and visibility, which included partnering with several service-learning courses from different universities. Chalice

was an assistant professor teaching a course in usability testing and user experience (UX) at a regional university in the Midwest. She had run project-based and service-learning courses for nearly a decade and had taught usability for several years, incorporated into larger technical communication courses or as standalone courses in UX and usability. This project, however, added something neither of us had done before: requiring students to run usability tests at a community partner's location.

Our below dialog focuses on the challenges and benefits of having novice students run onsite usability tests at a nonprofit community organization. This particular situation has not been well addressed in either UX or community engagement scholarship. The challenges of onsite testing (also called “in-situ” or “field” testing) have been observed in human computer interaction (HCI) scholarship (a great review is in Kjeldskov & Skov, 2014). Challenges include added time, trouble accessing space, and access to representative test participants (e.g., Holl et al., 2016; Kantner et al., 2003; Schell, 1986), all of which can cost more money (Fiotakis et al., 2009; Kjeldskov & Graham, 2003; Kjeldskov et al., 2004) and patience from stakeholders who are potentially already apathetic toward UX (Lopez Gil et al., 2016; Wale-Kolade & Nielsen, 2016). But this HCI body of scholarship does not consider the community nonprofit context, which differs in significant ways that Emma Rose and colleagues (2017) observed: nonprofits “fill gaps in infrastructure and services” (12), have limited resources, must comply with regulations, have “a fluid and dynamic workforce” (12), and—more than their corporate counterparts—“have existing and intimate relationships with their users” (30). These hallmarks require added commitment and resources from UX researchers, which Douglas Walls (2016) contends “goes against the ethos of more marketplace-driven development cycles where rapid prototyping and Agile development is emphasized” (4). In response to these unique needs, several community engagement UX scholars have embraced goals and methodologies from participatory design and contextual inquiry, which we briefly outline in the next section. Even those studies, however, have a limited set of examples where students ran onsite usability tests at a community nonprofit's site, and we use those as a launching point for our dialog about our collaborative project.

■ UX and Community Nonprofit Partnerships

In scholarship that discusses usability testing in community engagement partnerships, testing usually falls under larger umbrellas such as contextual inquiry, user-centered design, participatory design, HCI, and service learning. Much of this work had UX experts running onsite tests in community nonprofit contexts (Acharya, 2018; Camara et al., 2010; Durá et al., 2019; Hennes et al., 2016; Mara et al., 2013; Mara & Mara, 2015; Rose et al., 2017; Shivers-McNair & San Diego, 2017). In a few cases, students ran tests, which scholars have argued helps students

become better user advocates (Cleary & Flammia, 2012) and helps students and instructors be more accountable to audiences (Shivers-McNair et al., 2018).

The context under which students run tests for community projects varies, with examples of actual onsite testing rarely discussed. Jeffrey Grabill's (2003) students ran lab tests, since onsite tests were not necessary for his project. Similarly, Kathryn Swacha and Kirk St. Amant (2021) had students test a website, but onsite testing was not required. J. Blake Scott (2008) provides advice based on partnering his courses with the Orlando Eligible Metropolitan Area HIV Services Planning Council, although it is unclear whether his students ran tests onsite or in a lab. Kathryn Swacha's (2018) students ran onsite tests on cookbooks with seniors from a local care center, and she uses that experience to explore embodied literacy as a key skill for technical communication. From HCI, Jonathan Lazar (2001, 2011) has published several works based on years of conducting service learning UX projects with community partners, using both onsite and lab testing with undergraduates.

Although the specific context varies, these UX scholars typically adopt goals and values from community engagement: reciprocity, empowerment, sustainability, and capacity building. Reciprocity of the project means that it must benefit the community as much as the researcher (Agboka & Matveeva, 2018; Grant, 2022; Walton et al., 2019). Empowerment of end users requires having community partners participate in defining the needs and objectives of a project (e.g., Acharya, 2018; Agboka, 2013; Grabill, 2000; Salvo, 2001; Shivers-McNair et al., 2019; Spinuzzi, 2005a; Sun, 2006; Walls, 2016). Importantly, reciprocity and empowerment require coalitional approaches; Cana Uluak Itchuaqiyaaq (2021) reminds us to be advocates with oppressed groups—not speaking for them but building coalitions with them in order to do advocacy work. A third goal is sustainability, including sustainable relationships with community partners but more importantly as the sustainability of a community resource after a project finishes (Grabill, 2003). Grabill (2003) argues that a crucial component for sustainability is capacity building, where community participants become both willing and able to continue the project after the partnership ends: "Community networks, through both their development and their use, must leverage activities that increase a community's capacity for being productive—to write and create—with information technologies" (p. 144).

These goals require UX researchers to adapt methodologies based on the culture and needs of their community partner, especially with organizations that serve underrepresented populations (Hennes et al., 2016; Mara et al., 2013; Mara & Mara, 2015; Rose et al., 2017; Salvo, 2004; Walls, 2016). Adaptation is rooted in empathy: in tying UX to social justice, Sumana Harihareswara (2015) urges developers to use *disciplined empathy* to uncover bottlenecks that can lead to exclusion. Ann Shivers-McNair and colleagues (2018) directly link empathy with usability testing: "we ultimately approached usability testing as an empathetic, flexible, ongoing engagement with our audiences and users" (p. 39). Walls (2016) explains how this process affects UX methodologies and designers:

UX design professionals working with under resourced user populations must make moves to engage in robust ethnographic research [13], understand differences in culturally located explanatory metaphors [14], understand and adjust elements of participatory design [15], and persona development [16]. (p. 2)

Rose and colleagues (2016) detailed an example of methodological flexibility in their work with a community organization that helped people enroll in the Affordable Care Act (ACA). They modified the frequency of usability tests so they would not disrupt the organization's work, and they adapted their methods when space, staff, and linguistic limitations prevented ACA staff from participating in the usability tests.

The ethics of not interrupting a community partner's work, which Rose and colleagues (2016) followed in their ACA project, is in tension with the imperative to engage community participants. Participatory design requires researchers to find partners who are willing to help define project goals and understand community needs (Grabill, 2000, 2003; Hennes et al., 2016; Johnson, 1998; Shivers-McNair et al., 2019; Shivers-McNair & San Diego, 2017), and finding community end-users to participate in the design process is crucial (Mara & Mara, 2015; Salvo, 2001; Spinuzzi, 2005; Walls, 2016). Several scholars observe that social justice UX projects require more time to develop relationships, identify reciprocal projects, and conduct respectful contextual inquiry (e.g., Agboka, 2013; Chong, 2018; Rose & Walton, 2015; Salvo, 2004; Shivers-McNair & San Diego, 2017). This extra time can be seen in Grabill's (2003) phases of a community engaged UX project:

- Relationship building and (old-fashioned) community networking,
- Needs assessments through focus groups and interviews and information technology profiles (done in part with a technical writing class),
- Early versions of the web site (with technical writing class), and
- Usability testing and redesign (with technical writing class). (p. 136)

Extra time requires additional resources, paradoxically conflicting with the resource limitations of community nonprofit work. Many scholars, therefore, have published their experiences in navigating this paradox, although only a handful of those specify usability testing. And even fewer have discussed students running onsite usability tests in nonprofit contexts.

Our below dialog adds to these conversations by focusing on the challenges and benefits we encountered when students ran onsite usability tests at our community nonprofit's site. More significantly, we foreground the community partner's perspectives, answering Kimme Hea and Shah's (2016) call for including community partners' voices. In what follows, we discuss the project's context and timeline before moving into its challenges and benefits. The results are lessons for both instructors and community partners who want to embark on a collaboration where novice students run onsite usability tests.

■ Project and Context

The project was a partnership between Chalice's service-learning UX course and the Community Clinic. As we detail in this section, the UX course devotes a full semester to almost the entire life cycle of a project: identifying UX issues, creating a responsive deliverable, selecting UX methods for testing, and refining the deliverable. The course runs once per year with a new project almost each time it is offered; for example, one project was software documentation for a database system, while another was tutorials for first-year writing students. For the semester with the Community Clinic, the course had three graduate students and seven upper-division undergraduates.

Chalice met Billy, the Clinic representative, through the university's service-learning office, and they spent the next eight months identifying potential projects that would fit the needs of the Clinic and the course. Chalice shared her syllabus and old course projects with Billy as examples of what the course could do. Billy showed Chalice around the Clinic so that she could understand all the services that the Clinic provided, meet some Clinic staff, and see the physical context of the space. Billy also shared old documentation with Chalice as examples of what other classes had created for the Clinic.

By the time the UX course began in January, we had loosely identified several potential projects: kitchen instructions, medical and dental orientation materials, food pantry orientation materials, and database documentation. The audiences for each project differed: some documentation would be geared toward volunteers who were new to the Clinic, and other projects would be directed at volunteers or staff who had been with the Clinic for some time. With these preliminary plans in place, Chalice spent the first class session of the semester preparing her students to interview Billy; she purposely gave the students few details about the projects because she wanted them to understand the Clinic and the projects from Billy's point of view. Billy attended the second class session for a "client interview" where he provided students with the Clinic's mission, vision, stakeholders, services, and needs. This is also when Chalice started discussing ethical considerations with the class, which we detail more deeply later in this chapter.

Based on the initial client interview, the UX class spent the next few weeks narrowing project ideas and connecting them to timelines, workloads, and audiences. This included a site visit where Billy showed the entire class around the Clinic so that students could see the space, meet some of the staff, and take notes about the physical context of where documents would be used. This process resulted in two projects for the class:

- Half the class (five students) chose to create documentation for the Clinic's database system. The Clinic was transitioning between an old and new database system, and these processes were tied to important Clinic functions such as maintaining donor relationships. The Clinic had previous

documentation for some of these processes, but that previous documentation was predominately from the former database system. The new documentation would help standardize the way donors and volunteers were entered into the system. It would also help staff who were unfamiliar with the database processes or needed refreshers about the database.

- The other half (five students) chose to create orientation materials for running the Clinic's food pantry and farm stand. Each space had different processes, and multiple volunteers held different roles in each space: e.g., someone would check in customers while another person would help customers shop. The Clinic had existing documentation for each space, but there was debate about how accurate that documentation was. These orientation materials would be directed at new volunteers unfamiliar with the Clinic or food pantry.

Per the course requirements, both projects yielded two modalities of documentation: written documents that the Clinic could print and video tutorials that the Clinic could post to a YouTube site or internal server. While both of these projects had their challenges, this chapter focuses on the orientation materials because those had to be tested at the Clinic.

Site visits revealed several logistical factors that are pertinent to this chapter. First, the food pantry spaces had different hours than the rest of the Clinic, and those hours did not overlap with the UX class time. Second, other Clinic activities happened near the food pantry, and some of those overlapped with the first 15 minutes of class. Third, while the food pantry was connected to the main Clinic building, the farm stand was in a separate building next door. These locations affected access to the spaces, which was the fourth logistical factor. The reception area to the Clinic served as one entry to the food pantry, but there was a second entry to the food pantry that remained locked when the pantry was not open; the farm stand also had a large bay door that remained closed during our project, but it also had a side door that was locked during closed hours. And finally, some of the spaces were small enough that they created a tight fit with all the students in them; and there was limited parking space for the Clinic, meaning that a class of 11 people (Chalice included) made an impact on parking access for Clinic clientele. All of these factors affected the onsite testing situation.

Onsite usability testing happened in sixth week of class, and this chapter focuses on the challenges and benefits surrounding that test. However, some of the steps leading up to the onsite test will provide context:

1. **Obtaining the previous written documentation:** The Clinic provided previously written orientation materials to test. Students printed and reviewed them for design elements, but they had no way of knowing whether the content was accurate.
2. **Delineating tasks and documents:** The food pantry and farm stand typically had multiple volunteers working at a time, each with different tasks.

They were often separated: e.g., the person signing in customers worked in a different part of the pantry than the person helping customers shop. The previous documentation ran the tasks together in a single document. The UX class separated them in order to create documents that volunteers could take with them to different areas. The class settled on five tasks, each of which would need to be tested at a different station during onsite testing.

3. **Participant recruitment:** At the same time the class received documentation and identified tasks, we recruited representative participants. Billy was able to recruit some experienced Clinic volunteers and staff, while the students and Chalice found people who had never been at the Clinic. In total, we were able to recruit five participants for onsite testing.
4. **Securing space:** Chalice emailed the Clinic staff to check the testing schedule with them. As we explain later, the staff's response led us to constrain onsite testing to one day, which meant all onsite tests had to take place during the duration of one class session. This, combined with the number of tasks and participants, meant that participants would need to rotate between tasks. The class decided on three rotations, meaning that 1) each station would see three participants and 2) each participant would need to move three times.
5. **Practice testing:** Students practiced think-aloud protocols and post-test interviews, the two methods chosen for this project. Obviously, one purpose of these practice sessions was to train students how to moderate and observe. But it also had logistical purposes. Because the food pantry and farm stand were in separate buildings, the practice usability tests used two rooms at the university. We established how many pens, writing pads, and printed copies of the orientation materials we would need; who would greet test participants; who would track time on tasks; and who would escort test participants from one testing station to another.

All these steps affected the onsite testing. We will not detail testing results or how they applied to the final orientation materials, but some details about testing day are pertinent to the later discussion between Billy and Chalice. Onsite testing lasted 75 minutes and consisted of think-aloud protocols and short post-test interviews. The UX class split into five task stations that tested orientation materials for that task. Three of these stations were in the Clinic's food pantry, and the other two were in the farm stand next door, which Billy had to unlock when the UX class arrived. Chalice supervised the three food pantry stations, and Billy supervised the two farm stand stations. Each station had a student moderator, student observer, and participant, meaning that the UX class had a total of 16 people (including Chalice) onsite at the Clinic. The five participants rotated between three tasks; to coordinate their movements, all participants were given instructions on which stations they would visit, and students received instructions on where to escort their participant next.

The rest of this chapter is a conversation between us (Billy and Chalice) about the challenges and benefits surrounding this onsite test. In the next section, we discuss the challenges we faced from different sides of the partnership. We then move into the benefits of this process, some of which stemmed from logistical constraints.

■ Challenges: Time, Space, People, Expertise, and Attitude

Reciprocal, participatory community engagement partnerships necessitate involving end-users throughout the design process, being flexible with methodological approaches, and spending time observing users' activities even before a product is designed for those users. These goals require time, space, and people resources, all of which have been framed as challenges for in-situ researchers (e.g., Holl et al., 2016; Kantner et al., 2003; Kjeldskov et al., 2004). In community engagement partnerships, these challenges are also a burden on community partners, but community partners' direct voices have been largely absent from our scholarship (Kimme Hea & Shah, 2016). So, this section jumps between the community partner (Billy) and the UX instructor (Chalice) to understand challenges of time, space, and people from each partner's perspective. Based on our experience in this project, this section adds some additional challenges: expertise and attitude.

■ Time, Space, and People

Lazar (2011) noted that HCI projects run by undergraduate students have unique time challenges, and we also found those in our project. First, there is the timing of the class sessions themselves, which can fall into awkward times for community partners or participants. Second, there is the time constraint of the semester or quarter system in which the project takes place. These constraints, Billy points out, meant that the Clinic team had to invest additional time, space, and people resources. Chalice, too, felt that time constraints interacted with the challenges of finding space and people resources.

■ Billy

One of the most significant challenges of the work was the limited availability of the students. Although it was relatively simple to work with students on an individual level if the need arose, by in large most of the work for the project required most of the class participants to be available. This meant that time to collaborate often needed to fit the scheduled class time.

This limitation created some challenges. The times when the class was on site were precious. Documentation and testing needed to be done in multiple locations simultaneously, and without interfering with the operations of any of the programs.

In order to accomplish this, a lot of the work was spent preparing for these limited windows. We had to ensure there were the right volunteers available to help answer questions and test the documents the students were drafting. We had to coordinate with program managers to ensure the needed spaces could be made available, and we needed to ensure everyone was well informed about the goals of the day and their role in accomplishing those goals before anyone showed up.

When the groups arrived, we needed to be prepared enough to point everyone in the right direction and to let them go. As the staff point person attempting to manage multiple goals throughout the campus of our facility, I was really grateful that the students were well prepared and could lead their own work. The challenge of preparing the students really paid off when the students were on site. Instead of being pulled in multiple directions, I was able to invest my time in the areas where I could offer the greatest return for the students.

■ Chalice

I agree with all of Billy's points. Collaborative time on site was precious, so the class spent extra time preparing for our onsite visits. Before our tour of the Clinic, we reviewed the Clinic's website and any previous documentation they could provide us at that point. We also created a list of students' questions and a list of goals for observing the space (e.g., where do people use these documents, what type of audiences do these documents reach, etc.). Our onsite testing required perfected think-aloud protocols, practice sessions, and multiple written instructions for participants and students.

When it came to timing, I was most concerned about whether the Clinic's activities overlapped with class time. I did not want to disrupt their clients, and some Clinic activities were happening near the food pantry at the start of our class. So, we delayed the start of testing slightly, and I told students that they were to be polite, friendly, and quiet if other people were in the area. By coincidence, the food pantry and farm stand were both closed during our class sessions. This enabled us to test without disrupting those activities, but it also meant that we could not conduct contextual inquiry of the food pantry or farm stand volunteers while they were doing their work. Honestly, that was a small price to pay for not disrupting Clinic activities.

As Billy pointed out, time constraints overlapped with space and people resources. Since the onsite locations were in two different spaces, I could not be at both simultaneously to answer students' questions, give them pointers, or ensure they were being respectful. I would have liked to conduct two days of usability testing so that I could have supervised both locations, but that turned out to be logistically impractical. I emailed a potential schedule to one of the program managers that Billy mentioned, and her reply let me know that I was asking too much: "Those involved on this end of things need to have more discussion." The response let me know that I should have involved the program managers more directly while my class was deciding on whether we would create something

that required onsite testing. Apologetically, I reported back to my students that we might have to scrap the onsite project. We were asking a lot of our partners, bringing 16 people onto their site who would fill their spaces and take up their parking. In the end, the program managers were okay with one day of testing, for which I am grateful. Condensing to one day meant that someone I trusted—Billy—would need to supervise one of our testing locations. It seemed natural for him to supervise the farm stand because he had to unlock it, anyway, since it was closed during our onsite testing time.

In retrospect, one day of testing was smarter because we would not have been able to obtain participants for two days. We had difficulty finding even five participants for one day. Class time was during regular working hours, so most people were at work or school. As Billy pointed out, some of the Clinic staff became our testing participants. This challenge led to some unexpected benefits because those staff had more expertise on our tasks than students did.

■ Expertise and Attitude

When UX, participatory design, or community engagement scholars talk about expertise, it is often to remind experienced UX scholars, researchers, and designers that community members are legitimate experts on a topic. In the case of this project, however, the students running the research were not experienced, much like the students in Lazar's (2011), Scott's (2008), and Swacha's (2018) work. The students in our project were novices on several fronts: with the Clinic's processes, with running UX research, and with documentation design. Working with novices, especially students in a course, creates extra challenges for community partners. Billy points out that a community partner is forced to enter into the pedagogical process, and not every nonprofit administrator will want to do that. He explains that this process requires open attitudes about mentorship, relationship building, and trust between community partners, students, and instructors.

■ Billy

Another challenge that I experienced was the need to be fully engaged in the learning goals of the class. Taking on a project like this required a high degree of trust between the instructor and myself. This project took the pedagogical process out of the controlled environment of the university classroom and placed it in the context of a living organization. If I hadn't taken time to help to mitigate the risks to the students and assist in transforming our space into a learning environment, the students could easily have felt lost.

I found that my own passion for seeing that students learned was a necessary skill. On multiple occasions I was able to sit down with students and talk about their own professional goals. This helped me to develop ideal projects that would connect students to relevant skills and expose them to environments where their educational development had professional applications.

Students can sometimes be really difficult to work with. They are still trying to figure out how to apply what they have been learning, and many of them have not developed basic professional skills. These deficiencies can result in more work, difficulties in accomplishing goals, and occasionally projects that simply don't meet the standards you would like. Without a heartfelt desire to see the students develop, this process could result in an overall frustrating experience for everyone involved.

■ Chalice

I can see Billy's point about expertise in the process and the product. Billy is adept at video production himself, so the video tutorials were less polished than he would have created. The database documentation was all right because those were just screen captures with voiceovers. But for the orientation materials, people had to act out the tasks in the food pantry and farm stand. Students were still learning how to create storyboards, shoot their videos, and edit those videos, and it didn't always go well: e.g., two students shot their videos in portrait instead of landscape, so they had to go back to the site and reshoot their entire videos. I could see another nonprofit administrator being disappointed with the quality of these products, especially for all the time and effort that Billy and his team put into the project.

Billy's points about cultivating mentorship attitudes and trusting relationships is key. Finding a community partner who has some experience working with students, as Billy did from previous partnerships with other instructors, is challenging but worthwhile. A trusting relationship also comes from time spent planning the project and then staying atop the project's progress—a challenge that becomes more manageable with practice.

In terms of expertise, I was also concerned about the students' lack of experience with the testing process. Several of them had never run a think-aloud protocol, and none of them had run a usability test with this many logistical considerations. They had to move participants between buildings and stations, keep time synchronized between physically separated stations, and ensure they all had the physical materials they needed; for example, we could not print more consent forms or orientation materials at the Clinic.

While quality and experience were definitely issues that arose from working with novice researchers, the greatest challenge for me was ensuring that students met ethical standards. During the onsite tour, I reminded students not to speak loudly or stare; they had to conduct their observations as discreetly and respectfully as a group of 10 people could. Before we went to onsite testing, we discussed participants' privacy and created consent waivers that went beyond our institution's IRB requirements. Also, before onsite testing, I reminded students that their testing wasn't as important as the people or activities already happening at the Clinic; for example, they could not ask the Clinic's staff for help or the clientele to move out of the way of a testing session. I was especially concerned about this on the testing day because I could not be with two of the groups; I am grateful that Billy was willing to be with them in the farm stand to ensure that things ran smoothly there.

Finally, during onsite testing, we unexpectedly had participants who had run the food pantry and farm stand. They spent the entire “test” correcting our materials, turning the test into an artifact analysis and interview session. When students worried because the test had gone astray, I encouraged them to let the participant write on the materials. This deviation allowed the class to discuss two things that would not have otherwise been possible. First, while user testing is not inherently participatory, a tenet of participatory design is to listen to end users’ expertise. Second, these situations are common in testing, so we have to be flexible in our methodology based on our context. Those interactions stemmed from our inability to find enough participants, which resulted in several unexpected benefits that we discuss in the next section.

■ Benefits

Onsite testing required more effort from everyone involved: Billy and Chalice, certainly, but also the students and the Clinic team. It created challenges, but those challenges sometimes led to unexpected benefits. This section lumps all of those benefits under the umbrella of “buy-in”: an attitude that encouraged people’s commitment to the project, empowerment from the project, and belief in the project’s merit. Billy observed that buy-in from students made them more engaged with the Clinic and led to better quality deliverables. Both Billy and Chalice also noticed how buy-in from the Clinic team led to a change in the organization’s attitude toward documentation.

■ Buy-In from Students: Relationships and Deliverables

Time, space, expertise, and attitude were all challenges of onsite testing. But those challenges seemed to lead to deeper relationships between the class and the Clinic. Time constraints meant the class needed more preparation time before we went onsite, including students’ online research about the Clinic’s mission and vision as well as analysis of previous Clinic documents. This preparatory time also included the classroom interview with Billy and the onsite Clinic tour. Billy noticed that this process led students to be more connected with the Clinic’s overarching mission and everyday processes, which he saw in the quality of their deliverables. Chalice also noticed how the onsite tour and testing, especially, allowed Clinic staff to see students’ novice status and, in response, adopt a more mentorship attitude toward students. The combination of these factors deepened the relationship between partners in this project.

■ Billy

Students are very busy. Their mental and emotional energy is a limited resource. I wanted to ensure we got the very best of both from the students; this isn’t something you can require. It’s something that needs to be earned.

In my experience, student projects are notorious for being “phoned in.” Students only give the effort they need to give in order to fulfil the course requirements and rarely give their whole heart to the needs of the organization they are serving with their work. This was not what we experienced with this project and I believe it was rooted in two choices that were made early on.

The first choice was for Chalice to take the time to understand and believe in the mission of the organization. We had met at the campus originally but she took time to come by, take a tour and learn about what we do. Surprisingly, there are few professors who invest their time in coming onsite. When this step fails to happen, there isn’t mental or emotional energy invested from the faculty members, and the students pick up on this. They seem to intuit that a professor doesn’t seem to care all that much about the organization and that they shouldn’t either.

The second choice was the decision to bring the class onsite. This also gave them an opportunity to see the site for themselves and ask questions. This encounter created a fertile ground for the students to take an authentic interest in the work themselves. Giving them a “why” made them care a whole lot more about the “how.”

Once students cared about the mission, the project became about more than the grade. It became an expression of the students’ own values and goals. It allowed the hearts of the students to be won and this factor really showed through in the enthusiasm of the students and in the quality of their final results.

■ Chalice

Billy’s comments reveal purposeful choices I made with this project, but I was also surprised by unplanned benefits. This was my first onsite testing experience, but my previous classes have done contextual observations, which opened opportunities for them to feel more connected to the community partner. So, I included contextual observation in order to foster closer relationships. What surprised me, though, was how onsite testing reinforced those relationships, both from students and Clinic staff. For example, a couple weeks after testing, I learned that some of my students had exchanged email addresses with one of the Clinic staff who participated in testing. Once students had a new draft of written instructions, they sent it to her for feedback, something I did not require them to do. I saw this as a mentoring relationship where students respected the staff’s expertise and the staff recognized students’ need for an expert. Onsite testing seemed to changed people’s attitudes toward each other.

Like Billy, I noticed that this made a difference in students’ commitment to getting the deliverables “right.” The ones who sent drafts to the Clinic staff member were willing to go through extra drafting phases. In addition, two students filmed their initial video tutorials in portrait instead of landscape, and they were willing to go back into the site with me to re-film their entire tutorial. Certainly, this led to better portfolio pieces for them, but it also stemmed from their stated desire to produce something of quality that the Clinic could use without changes.

Buy-In from the Organization: Empowerment and Organizational Change

Time, space, people, and expertise challenges led to unexpected benefits of empowerment and organizational change. Time and space constraints meant that Billy had to be present for all the onsite activities, and he had to unlock the spaces and help run testing. The difficulty of finding testing participants led us to recruit Clinic staff who were not representative of our end users: we were aiming for inexperienced volunteers rather than experienced staff. But this ostensible failure had some unexpected benefits. Billy explains that it enabled Clinic staff to take ownership of the documents, give feedback on processes, and foster organizational change toward documentation and usability.

Billy

The whole process for us wound up being a pivotal moment in the culture of the organization. Before this project, I had struggled seriously with developing a value for documenting processes with some of the program leaders. One of the hang-ups in all of this was a fear of the unknown. People felt overwhelmed by the idea of documenting something and didn't have a good handle on what a success looked like.

The process of working with Chalice and her students exposed a critical number of our staff and volunteers to the field and helped us to develop a process, vocabulary and standard for what good process documentation looked like. In the months since then this initial boost has developed a much stronger value around process documentation in our programs. In many ways the students' projects were like a yeast which eventually helped the whole organization to rise.

One of the earliest benefits was buy-in. Staff and volunteers felt ownership of the final products since a significant number of staff and volunteers were invited into the process of developing the documentation and gave opportunities for feedback along the way. If we hadn't given so many opportunities for people to see themselves as co-creators, I believe the response to the documentation would have been critical. Instead, we experienced people who were passionate cheerleaders and avid users.

An unexpected additional benefit of this has recently emerged in light of the COVID-19 pandemic. Having a secure base of documentation helped protect our programs when many essential staff had to begin working from home as a result of the virus. Our familiarity with process documentation also allowed us to change programs as needed and provide quick and effective documentation of the changes for the many new volunteers who were stepping up to fill gaps.

Chalice

The Clinic staff's transformed approach to documentation was the benefit I least

expected. It stemmed from the empowerment that Billy discussed above, and that empowerment was a direct result of not having enough people to run or take the usability tests. Because Billy had to unlock the spaces and help supervise the students during testing, he directly observed the testing process and recognized the goal of the test: to make documentation that people could use in context. The same is true of several Clinic staff and volunteers. Once they noticed that they had more expertise than students did, they stepped in with advice and realized they could shape something that would make their lives easier.

Several interactions since testing have demonstrated that this experience had some lasting impact on the Clinic's long-term documentation practices. For me, the biggest surprise came from the same program manager who had emailed me about the schedule. Roughly a month after our onsite tests, she asked whether I would give a workshop with the staff about usability testing. Seeing the test also affected Billy, who later told me that he now defined "good" documentation as something people could use, not just something that was accurate about a process. He bought the UX book that my students used for class. And as his above discussion points out, the change is still present over a year later, even having unintended benefits for adapting to the COVID-19 response.

■ Lessons for Teachers and Community Partners

We (Billy and Chalice) were lucky that several of the challenges we faced led to unexpected benefits, although hopefully our discussion echoes other scholars' observations that this sort of project takes significant effort from community partners and instructors (Lazar, 2011; Scott, 2008). We both learned lessons about undertaking a project that involves onsite testing and novice researchers. As many scholars who do community engagement work have asserted (e.g., Cabrero et al., 2016; Camara et al., 2010; Grabill, 2003; Mara et al., 2013; Rose et al., 2017; Scott, 2008; Shivers-McNair & San Diego, 2017; Spinuzzi, 2005a, 2005b), each collaborative experience is unique and requires flexibility, so the lessons we provide in this section will obviously not apply to every situation. Still, they might prove helpful to some instructors and community members who are thinking of conducting onsite testing with novice student researchers.

Comparing his previous partnerships to this project, Billy outlines several pieces of advice to faculty who want to conduct any community engagement project:

1. **Review and adapt learning objectives in conversation with the partner organization.** Too often learning objectives do not reflect the context that a project needs to fit into. Understanding the needs and the capacity of the organization should be the first step as you are developing the course. Otherwise, you may find yourself working at cross-purposes with your community partners. This only builds antagonism.

2. **Build in flexibility to the process.** Expect the unexpected. Taking untested students into the real world will create unforeseen problems. Often students don't know how to navigate the kinds of problems that could arise. Give them permission to adapt and be proactive as you check-in to identify areas where change will be needed.
3. **Take a trip to your partner's site.** Faculty who take the time to see the location where their partners are working are more likely to understand both the opportunities and the challenges of the environment. This will only lead to better outcomes for students.
4. **Involve stakeholders in the organization as much as possible.** If a stakeholder is allowed to participate in the development of the project, they will be much more supportive of the work and will offer valuable perspectives along the way.
5. **Create opportunities for students to get to know the organization and pursue their own interests.** A student that is passionate about a project will put in a better effort. Creating space for students to find personal meaning in the project helps to motivate them, and it will show in the final deliverable.
6. **Uphold clear, professional standards.** At the end of the day, a partnership should be a benefit for both parties. An instructor must ensure that they do not allow poor-quality work to stand. Make sure the final product meets both your expectations and the expectations of the partner organization. Failing to accomplish the later goal will erode trust and will make future collaboration unlikely.
7. **Teach the organization as you teach the students.** Ideally your partners will emerge from this experience better educated and equipped to pursue further learning. Build in times for partners to learn about the process along with the students and be generous with resources that can help them develop their own capacity to work.

Billy's voice reinforces lessons that many scholars have emphasized for decades (e.g., Cleary & Flammia, 2012; Grabill, 2003; Lazar, 2001, 2011; Mara et al., 2013; Mara & Mara, 2015; Rose & Walton, 2015; Scott, 2008; Shivers-McNair et al., 2019; Walls, 2016). Teachers who are thinking about undertaking this sort of project should consider his and those scholars' advice. And just in case community partners read this chapter, he has a list of advice for them, too:

1. **Have motivations that go beyond the deliverable itself.** Community partners who place too much emphasis on the quality of the final deliverable could easily become disappointed. Therefore, we recommend other motivations that are guaranteed from a partnership, such as increased visibility with a college student population.
2. **Understand the learning goals of the course.** This advice has two benefits. First, it helps community partners understand what is realistic from

the course: some courses do not have the timeframe, skill level, or learning outcomes that an organization needs. Second, it can help community partners feel like part of the teaching process by realizing how their expertise and their organization's goals fit into the course's learning outcomes.

3. **Be realistic about the resource commitments.** Communicate early, realistically, and frequently about what you can give in terms of time, people, and access (to physical resources as well as knowledge). Be conservative in your estimates. The teacher you partner with might (should) be able to provide options that you can scale to different levels of commitment.
4. **Take the time to get to know the strengths and weaknesses of the students.** Every student brings with them their own set of experiences. Take time to talk about the kinds of work that bring them joy, what they are proud of, and what kinds of work they find difficult and frustrating. You may not be able to connect each student with work that matches their skills and passions exactly, but having an awareness of areas of particular strength or areas in which students struggle will better equip a partner to provide additional supports in the areas that are most necessary and to plug students into the areas in projects where they are most likely to succeed.
5. **Try to help students connect the work with their personal goals.** Don't fall into the trap of thinking a student is only there to serve your needs. For the best collaborations, it is better to try to think of the ways that your projects can help students achieve their own goals. Take time to talk to students about what skills and experiences they are hoping to achieve. It's also beneficial to hear about their goals and dreams. Sometimes this can reveal opportunities to connect the work the student is doing to a larger ambition they have for their own lives. Making communication about student goals a part of the process helps position the experience as something of real value for the student's life.
6. **Set clear expectations, then repeat them.** Like any relationship, communication is critical when working with students. It is far better to *over communicate* expectations. Try to communicate expectations as clearly as possible and in as many ways as possible. You will not know the communication preferences for most students you work with and will not have prior experience to guide you. Expectations also need to be clear. Ideally, they are measurable and have concrete benchmarks with deadlines along the way. Check-in on progress and offer helpful feedback early in the process to ensure if something was misunderstood, it is corrected early on.

In response to scholars' advice as well as years of community engagement experience, Chalice has established a process she calls "prepared flexibility," which has requirements for both instructors and community partners (and looks like the "preparation and flexibility" concept that Scott's (2008) students developed

during their projects). The next section weaves many of the above listed items into the prepared flexibility framework to demonstrate how that process looked specifically in the Clinic project. Our hope is that other faculty (and maybe even some community partners) can have an example of how those apply in UX community projects.

■ Prepared Flexibility in UX Community Projects

Billy's lists of lessons could be applied to any community project, which is not surprising considering the overlaps between UX and community engagement scholarship. Applying these lists to specifically UX projects echoes advice that Lazar (2011) gave to UX educators. Lazar (2011) forwards seven success factors for service-learning projects with undergraduate students, including having "community partners who believe deeply in the project and are willing to spend time with the students" (p. 586) and recognizing that "undergraduate students are not immediately experts in something that they just learned" (p. 587). In addition to these general tenets, we used the concept of prepared flexibility to make the UX course more successful.

Prepared flexibility starts with establishing, as much as possible, reciprocal goals and expectations early in the process. Above, Billy recommended that faculty adapt learning objectives in conversation with the community partner. Taken to an extreme, this process could result in hyperpragmatism, where academic goals are usurped by organizational ones. In addition, UX educators are often bound by the programmatic or course-learning outcomes agreed upon in curriculum proposals. But the academic goals of UX courses can be uniquely poised to adapt to almost any community project. For example, the program for Chalice's course used learning outcomes such as rhetorical awareness, process, multimodality, reflection, and genre conventions (adapted from the CWPA's "WPA Outcomes Statement for First-Year Composition"). Within that space, she was able to create UX-specific learning outcomes of user awareness, ethical UX research processes, and multimodal genre deliverables. All of those outcomes easily adapted to any community UX project without Chalice losing her academic autonomy; and, indeed, the course reached beyond the Clinic's needs, and Chalice was able to assess students' progress in those outcomes throughout the semester.

Prepared flexibility also requires flexibility on the part of the community partner, which is the crux of Billy's advice to community partners. Billy, for example, looked at projects from previous semesters as well as the upcoming syllabus and course schedule. He spent time understanding the UX-specific course learning goals, the timeline for the project, and the skillset of the students. For several months, we worked on loosely identifying several projects that would fit into the scope of both the class and the organization.

Despite the work that happens before the project starts, prepared flexibility does not mean solidifying full project details before a course begins; the UX

course in our example did not have a project picked before we began the semester. Instead, prepared flexibility requires the reciprocity and collaboration valued in community engagement scholarship, which can be specifically applied to UX projects:

1. Identifying major milestones on a timeline, including contextual inquiry, (potentially) IRB approval, participant recruitment, testing, etc.;
2. communicating those milestones to community partners;
3. securing resources, including participants, spaces, and times to run onsite testing;
4. and, most importantly, being prepared to change when something falls through.

In our case, Chalice failed to tell all the program managers about the course's schedule, leading to the email that nearly stopped the onsite project. Although embarrassed and disappointed at the time, she and Billy had prepared backup projects that students could complete offsite. In addition, the UX class failed to secure enough participants who fit the traits of the end users. Our project showed us that unintended participants can provide unexpected benefits, so instructors might want to allow for some flexibility in recruitment (although, obviously, have as many participants as possible that exemplify the end users). Finally, Chalice failed to consider whether her class was scheduled at a day and time that worked for the Clinic's staff, so it was lucky that the UX course's days and times did not overlap with food pantry and farm stand activities. While building a schedule around a community partner is often impossible, we recommend it as much as possible, especially for a project that wants to do onsite testing. Being prepared but flexible allowed us to adjust to unexpected challenges.

Finally, although we did not discuss it in our list of advice, we want to mention that this sort of project is not ideal for inexperienced instructors or community partners. The logistical and ethical challenges we faced are not unique to our project—indeed, the issues we raised are well documented in the literature (Grabill, 2003; Hennes et al., 2016; Lazar, 2011; Mara & Mara, 2015; Rose et al., 2017; Rose & Walton, 2015; Scott, 2008; Shivers-McNair & San Diego, 2017; Swacha, 2018; Walls, 2016). Based on a study of students and instructors running usability testing in technical communication courses, Felicia Chong (2018) recommended that instructors take a usability course in order to be prepared to teach it. This advice is reasonable, as we found these challenges exacerbated in an onsite testing situation with novice researchers. It tried Billy's resolve as a community partner, and he drew from his experience working with previous classes in order to find motivation and patience. It tested Chalice's capacity for flexibility and planning, for which she drew from years of running project-based courses. We are not saying that new instructors or community partners cannot do these projects; but we recommend that one or both of the collaborators on such a project have some experience with the challenges of such a collaboration.

■ Conclusion

Scholars who employ usability testing in community nonprofit contexts point to community benefits such as empowerment and reciprocity. Still, these scholars acknowledge the intense resources needed to plan and run any community engagement UX project, even in situations with lab tests (e.g., Grabill, 2003) or UX experts (e.g., Mara & Mara, 2015; Rose et al., 2016; Shivers-McNair & San Diego, 2017). This chapter adds complexity to this discussion by exploring the challenges and benefits of an onsite test run by novice researchers.

Foregrounding the community partner's voice enables scholars to hear benefits and challenges of onsite testing from different perspectives. For example, community engagement scholars have talked for decades about the importance of building sustainable relationships between academics and community partners (Grabill, 2003; Hennes et al., 2016; Mara & Mara, 2015; Rose & Walton, 2015; Scott, 2008; Shivers-McNair et al., 2019; Shivers-McNair & San Diego, 2017). Billy points out that an individual class is only one contribution to a larger, sustained relationship between organizations:

Another longer-term benefit of this was a strengthened relationship between the clinic and the university. Having a successful student project helped us to better define what parameters we would want to have in place when participating in future projects with the university. As a result, we have had greater comfort in working with faculty. Having a good relationship with the university offers a lot of great benefits. We have found an increase in financial support from alumni, new student volunteers and opportunities to collaborate with faculty on a wide range of issues. Not all of these are a direct result of the project, but I believe our collaboration with Chalice and her class played a significant role in deepening the overall relationship between our organizations.

Scholars who discuss community engagement or service-learning collaborations rightly stress the importance of individual instructors building sustainable and reciprocal relationships, and Billy's advice to instructors in this chapter reinforce those scholars' assertions. But individual instructors and scholars need to understand that the sustained relationship must be, from a community partner's perspective, larger than any single class or faculty member. This is true whether the partnership is UX or not.

Even more important is the sustainability of community resources after a project finishes. Grabill (2003) argues that this level of sustainability cannot be achieved unless the community organization builds capacity for the skills needed to sustain those resources. Billy's voice in this chapter demonstrates that, at least in some situations, onsite usability testing can have durable effects on end-users' empowerment and their capacity for creating, testing, and maintaining

documentation. Interestingly, this capacity building was an unintended result of the unique challenges of this project: 1) novice students running tests (expertise challenges), 2) Clinic staff participating on testing day (people and space challenges), and 3) community partners' willingness to mentor students (attitude challenges). Sharing our community partners' voices, as Kimme Hea and Shah (2016) encourage, can help UX scholars understand different perspectives on the challenges and benefits of onsite usability testing.

■ Implications for Readers

By foregrounding the voice of a community partner, we have tried to provide insights about challenges and benefits of having a class of novice students run onsite usability testing at a community site. Challenges included issues of time, space, and people (ethics, expertise, and participant availability). Benefits included buy-in from both students and the organization.

Based on these experiences, the section titled "Lessons for Teachers and Community Partners" includes a list of lessons for UX teachers who want to undertake such a project, with another list of lessons for any community partners who might happen to read this chapter. The section on "prepared flexibility" clarifies how we implemented these lessons in our own UX project, with the goal of helping other educators and community partners who might want to undertake a similar partnership.

■ References

- Acharya, K. R. (2018, August 3). Usability for user empowerment: Promoting social justice and human rights through localized UX design. SIGDOC '18: *Proceedings of the 36th ACM International Conference on the Design of Communication*, 6, 1–7. <https://doi.org/10.1145/3233756.3233960>
- Agboka, G. Y. (2013). Participatory localization: A social justice approach to navigating unenfranchised/disenfranchised cultural sites. *Technical Communication Quarterly*, 22(1), 28–49. <https://doi.org/10.1080/10572252.2013.730966>
- Agboka, G. Y., & Matveeva, N. (2018). *Citizenship and Advocacy in Technical Communication: Scholarly and Pedagogical Perspectives*. Routledge.
- Cabrero, D. G., Kapuire, G. K., Winschiers-Theophilus, H., Stanley, C., & Abdelnour-Nocera, J. (2016, April 13). A UX and Usability expression of Pastoral OvaHimba: Personas in the Making and Doing. *Proceedings of the 2nd International Conference in HCI and UX Indonesia 2016*, 89–92. <https://doi.org/10.1145/2898459.2898473>
- Camara, S. B., Oyugi, C., Abdelnour-Nocera, J., & Smith, A. (2010). Augmenting usability: Cultural elicitation in HCI. In D. Katre, R. Orngreen, P. Yammiyavar, & T. Clemmensen (Eds.), *Human work interaction design: Usability in social, cultural and organizational contexts* (pp. 46–56). Springer. https://doi.org/10.1007/978-3-642-11762-6_4
- Chong, F. (2018). Implementing usability testing in introductory technical communication service courses: Results and lessons from a local study. *IEEE*

- Transactions on Professional Communication*, 61(2), 196–205. <https://doi.org/10.1109/TPC.2017.2771698>
- Cleary, Y., & Flammia, M. (2012). Preparing technical communication students to function as user advocates in a self-service society. *Journal of Technical Writing and Communication*, 42(3), 305–322. <https://doi.org/10.2190/TW.42.3.g>
- Council of Writing Program Administrators. (2019, July 18). *WPA Outcomes Statement for First-Year Composition* (3.0), *Approved July 17, 2014*. https://wpacouncil.org/aws/CWPA/pt/sd/news_article/243055/_PARENT/layout_details/false
- Dura, L., Gonzáles, L., & Solis, G. (2019, October 4). Creating a bilingual, localized glossary for end-of-life-decision-making in borderland communities. SIGDOC '19: *Proceedings of the 37th ACM International Conference on the Design of Communication*, 30, 1–5. <https://doi.org/10.1145/3328020.3353940>
- Fiotakis, G., Raptis, D., & Avouris, N. (2009). Considering cost in usability evaluation of mobile applications: Who, where and when. In T. Gross, J. Gulliksen, P. Kotzé, L. Oestreicher, P. Palanque, R. O. Prates, & M. Winckler (Eds.), *Human-Computer Interaction – INTERACT 2009* (pp. 231–234). Springer. https://doi.org/10.1007/978-3-642-03655-2_27
- Grabill, J. T. (2000). Shaping local HIV/AIDS services policy through activist research: The problem of client involvement. *Technical Communication Quarterly*, 9(1), 29–50. <https://doi.org/10.1080/10572250009364684>
- Grabill, J. T. (2003). Community computing and citizen productivity. *Computers and Composition*, 20(2), 131–150. [https://doi.org/10.1016/S8755-4615\(03\)00015-X](https://doi.org/10.1016/S8755-4615(03)00015-X)
- Grant, C. (2022). Collaborative tactics for equitable community partnerships toward social justice impact. *IEEE Transactions on Professional Communication*, 65(1), 151–163. <https://doi.org/10.1109/TPC.2022.3141227>
- Harihareswara, S. (2015). User experience is a social justice issue. *The Code4Lib Journal*, 28. <https://journal.code4lib.org/articles/10482>
- Hea, A. C. K., & Shah, R. W. (2016). Silent partners: Developing a critical understanding of community partners in technical communication service-learning pedagogies. *Technical Communication Quarterly*, 25(1), 48–66. <https://doi.org/10.1080/10572252.2016.1113727>
- Hennes, J., Wiley, K., & Anderson, J. B. (2016, September 23). The Trail Reporter mobile application: Methods for UX research and communication design as civic agency. SIGDOC '16: *Proceedings of the 34th ACM International Conference on the Design of Communication*, 24, 1–5. <https://doi.org/10.1145/2987592.2987620>
- Holl, K., Nass, C., Villela, K., & Vieira, V. (2016). Towards a lightweight approach for on-site interaction evaluation of safety-critical mobile systems. *Procedia Computer Science*, 94, 41–48. <https://doi.org/10.1016/j.procs.2016.08.010>
- Itchuaqiyag, C. U. (2021). Inúpiat Iitqusiat: An indigenist ethics approach for working with marginalized knowledges in technical communication. In R. Walton & G. Y. Agboka (Eds.), *Equipping technical communicators for social justice work: Theories, methodologies, and pedagogies* (n.p.). University Press of Colorado; Utah State University Press.
- Johnson, R. R. (1998). *User-centered technology: A rhetorical theory for computers and other mundane artifacts*. State University of New York Press.
- Kantner, L., Sova, D. H., & Rosenbaum, S. (2003, October 12). Alternative methods for field usability research. SIGDOC '03: *Proceedings of the 21st Annual International Conference on Documentation*, 68–72. <https://doi.org/10.1145/944868.944883>

- Kjeldskov, J., & Graham, C. (2003). A review of mobile HCI research methods. In L. Chittaro (Ed.), *Human-computer interaction with mobile devices and services* (pp. 317–335). Springer. https://doi.org/10.1007/978-3-540-45233-1_23
- Kjeldskov, J., & Skov, M. B. (2014, September 23). Was it worth the hassle? Ten years of mobile HCI research discussions on lab and field evaluations. *MobileHCI '14: Proceedings of the 16th International Conference on Human-Computer Interaction with Mobile Devices & Services*, 43–52. <https://doi.org/10.1145/2628363.2628398>
- Kjeldskov, J., Skov, M. B., Als, B. S., & Høegh, R. T. (2004). Is it worth the hassle? Exploring the added value of evaluating the usability of context-aware mobile systems in the field. In S. Brewster & M. Dunlop (Eds.), *Mobile Human-Computer Interaction—MobileHCI 2004* (pp. 61–73). Springer. https://doi.org/10.1007/978-3-540-28637-0_6
- Lazar, J. K. (2011). Using community-based service projects to enhance undergraduate HCI education: 10 years of experience. *CHI '11 Extended Abstracts on Human Factors in Computing Systems*, 581–588. <https://doi.org/10.1145/1979742.1979653>
- Lazar, J. K., & Lidtke, D. (2001). Service-learning partnerships in the information systems curriculum. In J. Lazar (Ed.), *Managing IT/Community Partnerships in the 21st Century* (pp. 1–16). IGI Global. <https://doi.org/10.4018/978-1-930708-33-4.ch001>
- Lopez Gil, J. M., Urretavizcaya Loinaz, M., Losada, B., & Fernandez Castro, I. (2016). Field vs. laboratory usability evaluations: A study on a context dependent mobile application developed with an agile methodology. *IEEE Latin America Transactions*, 14(1), 339–348. <https://doi.org/10.1109/TLA.2016.7430099>
- Mara, A., & Mara, M. (2015, July 16). Capturing social value in UX projects. SIGDOC '15: *Proceedings of the 33rd Annual International Conference on the Design of Communication*, 23, 1–6. <https://doi.org/10.1145/2775441.2775479>
- Mara, A. F., Potts, L., & Bartocci, G. (2013, September 30). The ethics of agile ethnography. SIGDOC '13: *Proceedings of the 31st ACM International Conference on Design of Communication*, 101–106. <https://doi.org/10.1145/2507065.2507080>
- Rose, E. J., Racadio, R., Wong, K., Nguyen, S., Kim, J., & Zahler, A. (2017). Community-based user experience: Evaluating the usability of health insurance information with immigrant patients. *IEEE Transactions on Professional Communication*, 60(2), 214–231. <https://doi.org/10.1109/TPC.2017.2656698>
- Rose, E. J., & Walton, R. (2015, July 16). Factors to actors: Implications of posthumanism for social justice work. SIGDOC '15: *Proceedings of the 33rd Annual International Conference on the Design of Communication*, 33, 1–10. <https://doi.org/10.1145/2775441.2775464>
- Salvo, M. J. (2001). Ethics of engagement: User-centered design and rhetorical methodology. *Technical Communication Quarterly*, 10(3), 273–290. https://doi.org/10.1207/s15427625tcq1003_3
- Salvo, M. J. (2004). Rhetorical action in professional space: Information architecture as critical practice. *Journal of Business and Technical Communication*, 18(1), 39–66. <https://doi.org/10.1177/1050651903258129>
- Schell, D. A. (1986). Testing online and print user documentation. *IEEE Transactions on Professional Communication*, PC-29(4), 87–92. <https://doi.org/10.1109/TPC.1986.6448996>
- Scott, J. B. (2008). The practice of usability: Teaching user engagement through service-learning. *Technical Communication Quarterly*, 17(4), 381–412. <https://doi.org/10.1080/10572250802324929>

- Shah, R. W. (2020). *Rewriting partnerships: Community perspectives on community-based learning*. University Press of Colorado; Utah State University Press.
- Shivers-McNair, A., Gonzáles, L., & Zhyvotovska, T. (2019). An intersectional technofeminist framework for community-driven technology innovation. *Computers and Composition*, 51, 43–54. <https://doi.org/10.1016/j.compcom.2018.11.005>
- Shivers-McNair, A., Phillips, J., Campbell, A., Mai, H. H., Yan, A., Macy, J. F., Wenlock, J., Fry, S., & Guan, Y. (2018). User-centered design in and beyond the classroom: Toward an accountable practice. *Computers and Composition*, 49, 36–47. <https://doi.org/10.1016/j.compcom.2018.05.003>
- Shivers-McNair, A., & San Diego, C. (2017). Localizing communities, goals, communication, and inclusion: A collaborative approach. *Technical Communication*, 64(2), 97–112.
- Spinuzzi, C. (2005a). Lost in the translation: Shifting claims in the migration of a research technique. *Technical Communication Quarterly*, 14(4), 411–446. https://doi.org/10.1207/s15427625tcq1404_3
- Spinuzzi, C. (2005b). The methodology of participatory design. *Technical Communication*, 52(2), 163–174.
- Sun, H. (2006). The triumph of users: Achieving cultural usability goals with user localization. *Technical Communication Quarterly*, 15(4), 457–481. https://doi.org/10.1207/s15427625tcq1504_3
- Swacha, K. Y. (2018). “Bridging the gap between food pantries and the kitchen table”: Teaching embodied literacy in the technical communication classroom. *Technical Communication Quarterly*, 27(3), 261–282. <https://doi.org/10.1080/10572252.2018.1476589>
- Swacha, K. Y., & St.Amant, K. (2021). Lego™ learning: A scalable approach to pedagogy in the rhetoric of health and medicine. *Rhetoric of Health & Medicine*, 4(4), 446–474. <https://doi.org/10.5744/rhm.4003>
- Wale-Kolade, A., & Nielsen, P. A. (2016). Apathy towards the integration of usability work: A case of system justification. *Interacting with Computers*, 28(4), 437–450. <https://doi.org/10.1093/iwc/iwv016>
- Walls, D. M. (2016, September 23). User experience in social justice contexts. SIGDOC '16: *Proceedings of the 34th ACM International Conference on the Design of Communication*, 9, 1–6. <https://doi.org/10.1145/2987592.2987604>
- Walton, R., Moore, K., & Jones, N. (2019). *Technical communication after the social justice turn: Building coalitions for action* (1st ed.). Routledge.