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Testing in translation: Conducting usability studies with transnational users

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Introduction

What do we mean by usability in everyday life? For us, everyday life implies the series of choices and decisions that happen each day as people are trying to get things done. These things are often taken for granted, they might seem mundane, they may be overlooked. Usability inhabits everyday life in the documents used by a Vietnamese mother of two young children, having recently moved to the United States, and navigating the healthcare system in a new country for the first time. Usability shows up again as a Chinese couple considers whether or not to move out of their father's home in a Seattle neighborhood, but wonder how it might impact the family's ability to afford health insurance.

Over the past 30 years, the concepts of usability, as a quality of an interface, and user-centered design, the process of building usability into a product, have made their ways into many aspects of everyday life. However, usability practices have not been adopted evenly across all types of organizations. Usability is highly cherished by companies building products and services where profits are driven directly by user experience such as social media and e-commerce. However, other organizations, like non-profits, have been slower to adopt user-centered approaches (Kruger, 2012). This slower adoption does not signal a lack of concern, but often stems from a lack of resources or organizational support. For example, government and non-profits may not have the resources, skills or bandwidth to relentlessly focus on design and iteration in the same ways that for-profit companies can. They often have other concerns.

When we think of usability in everyday life, we are interested in the spaces that are often overlooked or less attended to. Specifically, organizations that provide key resources to diverse populations, but may not have the resources or skill sets to practice user-centered design in the same way that profit-based, technology companies can. This intersection often reveals the

neediest organizations serving the neediest populations: ones where the quality of usability is the most crucial.

In doing so, we join the chorus of voices in technical communication contributing to research with a social justice orientation. We acknowledge the dual narratives in the field of technical communication that include the traditional pragmatic approach of the field and interweaves it with narrative that foregrounds the values of inclusivity and advocacy (Jones, Moore, & Walton, 2016). Attending to the interplay between the global and the local is social justice work and “must happen on the local level, such as through user advocacy work that ensures the inclusion of underrepresented users” (Sun & Getto, 2017, p.90). Further, close collaborative relationships between community strategists and user experience practitioners can iteratively create localized and culturally sensitive experiences and information products to “support design, engagement, knowledge-making, and social justice work”(Shivers-McNair & Diego, 2017, p.109).

The impetus for the writing of this article was inspired by our desire to make our decisions and deliberations about methodologies and methods visible to others in the field who may be embarking on similar work. We are inspired by recent work that directly address these challenges in community-based research projects by employing decolonializing methodologies (see Agboka, 2013, 2014; Walton, Zraly, & Mugengana, 2014; Shivers-McNair & Diego, 2017). Further, we plan to situate these reflections in the larger conversation of conducting usability research with transnational users and the unique challenges faced by organizations designing communication products designed to serve diverse language-based audience groups.

In this article, we present a reflection on the methodology and methods for a usability study conducted in partnership with a non-profit organization in Seattle, Washington in the United States. The organization is a community health center that provides health care services to medically underserved patients, including immigrant populations, regardless of their ability to pay. The purpose of the usability study was to examine a print document, called the guidebook, which was designed to support patients as they signed up for health insurance plans through the newly enacted Affordable Care Act. The guidebook had been designed in English with a multi-lingual audience in mind and translated into multiple languages. The main audiences for the document were immigrant populations from Vietnam and China and therefore the usability study was conducted in participants’ native languages. The results of that research study and the partnership between our research team and the community organization are reported elsewhere (Rose et al., 2017).

As reflexive qualitative practitioners, we present this discussion to share our reflections on the methodology and the methods of the study. Following the distinction made by Spinuzzi, we conceptualize methodology as the philosophy and epistemology behind our research approach, and the methods as how the methodology was enacted in a particular context and how it informed the choices we made as we engaged in this research project (Spinuzzi, 2003). First, we describe our methodology as one that intertwines social justice and pragmatism. Second, we review literature related to usability studies that involve translation, interpretation and transnational audiences. Third, we situate our research project and discuss the methods we chose for a usability study evaluating health insurance information with immigrant populations who

spoke either Vietnamese or Chinese/Cantonese. Fourth, we provide a reflection on the study methods: what we did, why we did it, and how it worked or didn't. We conclude with a series of considerations for conducting usability studies that engage transnational users and involve translated information for multiple audience groups.

Our goal in presenting this article is not to create a simplified version of dos and don'ts for conducting usability studies with transnational audiences, but to introduce and reflect on our own challenges and how this study complicates our understanding of usability research. These challenges, often felt, but less discussed in the literature, allow us to provide more context and insights in the study. We reflect on this work to share the choices, compromises, and mistakes we made along the way with others facing similar challenges.

Methodology: An intertwining of advocacy and pragmatism with a social justice orientation

In this section, we reflect on our methodology in terms of the philosophy and epistemology behind our research approach (Spinuzzi, 2003). According to Creswell, there are four primary alternative knowledge claims for research design: post-positivist, constructivist, advocacy/participatory, and pragmatic (Creswell, 2003). We situate our orientation as an intertwining of both advocacy and pragmatism. Researchers oriented to advocacy/participatory knowledge claims "believe that inquiry needs to be intertwined with politics and a political agenda" (Creswell, 2003, p.9). Conversely, researchers oriented to pragmatism make knowledge claims that "arise out of actions, situations, and consequences rather than antecedent conditions" (p.11). The political agenda behind this work is the belief that design should prioritize human dignity and human rights (Buchanan, 2001; Walton, 2016). Walton's call to prioritize human dignity within the field of Technical and Professional Communication, does so to foster action, as she states "a discipline that, as its first principle, ascribes to respecting the intrinsic worth of all people is a discipline well positioned to make a social justice turn, shifting from critical analysis to critical action." (p. 411). This political agenda, to explicitly design for and support human dignity, is coupled with a pragmatic orientation which focuses on the particular problem at hand and uses a full suite of methods and approaches to understand and orient towards that particular problem.

It is striking that this intertwining combines two threads of research design, often found in mixed methods studies, and also mirrors the heart of technical communication as a discipline, that it is both pragmatic and oriented to social justice. (Jones et al., 2016). Therefore, we make this dual nature of our work visible. As we engaged in this study and made choices in designing and conducting the research, we often had to make compromises between our knowledge of best practices of conducting usability studies, the needs of the organization we partnered with, and the research relationship we engaged in with the participants in the study. These choices were made within the larger frame of designing for dignity while simultaneously doing what we could within the resource constrained context of a non-profit, community based organization.

Usability testing with international and transnational users

In this section, we define and discuss issues related to transnationalism and review research in usability studies that engage international and immigrant populations.

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Considering transnationalism

“Borders are set up to define the places that are safe and unsafe, to distinguish us from them. A border is a dividing line, a narrow strip along a steep edge. A borderland is a vague and undetermined place created by the emotional residue of an unnatural boundary. It is in a constant state of transition” (Andalucía, 1987, p. 3)

We start with this quote from Anzaldua’s influential work *Borderlands/La Frontera*, because she captures this sense of in-betweenness and the transition that is at the heart of transnationalism. Rather than a static notion of migration where people leave one place for another, transnationalism recognizes the “multiple ties and interactions linking people or institutions across the borders of nation-states” (Vertovec, 1999, p.447). A border exists both materially and metaphorically as Andalucía points out as it shapes and mediates relations between people and places. But, rather than being static, a border is in a “constant state of transition” (Andalucía, 1987, p. 3).

A traditional, and now outdated, notion of migration, is the idea that people move from one nation state to another and assimilate. Instead anthropologists and sociologists conceptualize transnationalism as “the process by which immigrants forge and sustain simultaneous multi-stranded social relations that link together their societies or origin and settlement” (Schiller, Basch, & Szanton Blanc, 1995, p.48). An ethnographic orientation to transnationalism takes people and practices as a central concern over abstractions and representations which focuses on activities “located within the life experience of individuals and families, making up the warp and woof of daily activities, concerns, fears and achievements” (Schiller et al., 1995, p. 50). This metaphor of weaving is a productive one. For it is the intersections between family relations, countries, languages, practices, and norms, that come to our attention. These factors complicate, rather than calm, the complexity.

A transnational perspective acknowledges immigration while also foregrounding the interconnected diaspora and hybrid communities (Shklovski, Vertesi, & Lindtner, 2014). People move between geographic and metaphorical hybrid spaces and maintain connections, cultural ties, and identities with their homeland, while adopting and adapting to places of relocation which results in hybrid communities (Shklovski, Vertesi, & Lindtner, 2014). In Sun’s work on cross-cultural design, she defines culture “as an open set of practices and as an energetic process with meanings, objects, and identities flowing across sites in diffuse time-space” (Sun, 2012, p. 25). Transnationalism also embraces culture is a process, and is “constantly morphing and adapting to changing conditions” (Shklovski et al., 2014, p. 6).

Within usability and user-centered design, a focus on transnational users focuses on the dynamic interplay of culture. As Bobeth, et al. state “for the special case of immigrants it remains unclear which impact cultural differences between home and host country might have on the outcome of user-centered design processes as well as on interface preferences” (Bobeth, Schreitter, Schmehl, Deutsch, & Tscheligi, 2013, p. 714). Considering transnationalism provides an opportunity for technical communication scholars to focus more broadly on hybrid communities and go beyond a traditional orientation that is in “service to industry in North American contexts and its nation-centric ideology” (Ding & Savage, 2012, p. 3).

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Usability testing and transnational audiences

While there has been extensive research addressing the challenges and cultural differences involved in conducting usability research with international audiences (see Beaton & Kumar, 2010; Hall, De Jong, & Steehouder, 2004; Oyugi, Dunckley, & Smith, 2008; Vatrapu & Perez-Quinones, 2006; Wallace & Yu, 2009; Yammiyavar, Clemmensen, & Kumar, 2008). There has been considerably less attention paid to the specific and unique needs of conducting research with transnational users and immigrant populations.

Within the studies related to usability methods for international and culturally diverse users, many reference cultural differences and dimensions drawing on work by Hofstede's (1984) and Hall and Hall (1990). The literature related to designing information and communication technologies for international audiences can be grouped into two categories: product and process (Oyugi et al., 2008). The product category is interested in cultural differences between groups of people and how they impact the ways products and services are designed and interpreted. The process category is interested in how people are engaged in the design process, whether it be participatory design or usability evaluations, and how these engagements pose challenges for researchers working with international audiences and in international contexts. While the two categories are related and overlap, we situate the contribution of this paper in the process category. Therefore, we focus specifically on selections from the literature that relate to the process of conducting studies with international and transnational audiences.

Several studies have discussed the role of culture within usability studies. Vatrapu and Pérez-Quinones (2006) found that usability studies conducted with a facilitator from the same culture, in their case, a facilitator from India working with Indians, found more usability issues than in studies that used someone from outside the culture, in this case, a North American. In another study, by Hall et al. looked at the way that different cultural factors impacted users' behaviors in usability studies and impacted the outcomes in the results (Hall et al., 2004). They found that some methods, such as retrospective think-aloud, are more suited for collective cultures and other methods, such as the plus/minus method are more suited for individualistic cultures. Several scholars concede that methods are imbued with cultural cues and biases. Hall, et al., are subtle in this claim, stating "evaluation methods used may also be susceptible to cultural bias" (2004, p. 499). Whereas other scholars acknowledge this bias more explicitly. Agboka, in his call to decolonize methodologies, makes the critique that existing methods "motivated by modernist ideologies and whose history is tied to the colonial project, may not be well positioned to address emerging social justice challenges in many post-colonial, developing, and unfranchised/disenfranchised cultural sites" (Agboka, 2014, p. 298). Taken together we must bring a sense of caution and skepticism to the application of traditional usability methods emerging from corporate and technology based practices from the Global North. When conducting studies, it is helpful to acknowledge that "all usability is culturally specific and concrete" (Clemmensen, Shi, Kumar, Li, & Sun, 2007, p. 288).

Given this critique, consider usability studies and the standard practice of thinking aloud to gather data about a users' experience. A traditional usability study uses quasi-scientific methods that are routed in Western ways of knowing. Typically, an individual uses a technology, alone,

while a facilitator plays the role of the neutral scientist, taking notes, giving prompts, and administering surveys. During the study, the participant is asked to think aloud, verbalizing their actions, expectations, and opinions (Boren & Ramey, 2000; Nielsen, 1993). While the literature references the roots of thinking aloud to Ericsson and Simon's (1984) work on verbal protocols, the way it has been taken up by usability practitioners veers away from this original formal scientific process, to more of one of probing and prompting (Boren & Ramey, 2000).

Several studies engaging transnational or international users have advocating for modifying a traditional think aloud protocol even further as is appropriate for the audience. Oyugi et al. (2008) advocated a 'Think Aloud with Probing' was a beneficial modification to facilitation style in a study with Indian participants and yielded more useful information over think-aloud only or a post-study interview. Gorman et al. looked at the ways traditional usability methods needed to be adjusted when working with oral, non-literate, rural audiences in Ghana (Gorman, Rose, Yaaqoubi, Bayor, & Kolko, 2011). The main adjustments made in their study methodology was to emulate realistic usage settings of the device by conducting the studies in groups, rather than one-on-one and encourage and incorporate group discussion and interaction rather than individual think aloud protocols. Additionally, Paterson et al. found in a study in Namibia that traditional usability methods needed adaptation and "when evaluating usability in a cross-cultural context, open questions and dialogical methods seem to be more appropriate, or at least offer a richer texture of opinion, and a greater likelihood of uncovering the real difficulties." (Paterson, Winschiers-Theophilus, Dunne, Schinzel, & Underhill, 2011, p.246). Taken together these studies remind us to continue to be cautious about applying typical usability methods in cross-cultural and international contexts.

In this section, we have reviewed several studies that examine issues of culture with immigrants or transnational participants, there are limited discussions to how usability methods may have to be re-envisioned, adapted, or changed. While our contribution to this limited field may be humble, we share our reflections and adaptations to usability studies to encourage a broader discussion about methods in and usability research.

Situating our study

In 2013, the United States government enacted into law the Affordable Care Act which provided medical care to many people who had previously been uninsured. Immigrant populations in the US are less likely to be insured, have larger health disparities, and also have higher needs when it comes to health insurance and health literacies (Kreps & Sparks, 2008). However, signing up for insurance for many people was challenging due to the complexity of understanding the options and details about health insurance (Blumberg, Long, Kenney, & Goin, 2013). In addition, signing up for health insurance online via the websites provided by the United States and state governments suffered from technical and usability difficulties (Brandt, Diaz, Cabello, Darling, & Rivlin, 2015; Cardello, 2013). Further complicating the insurance sign up process were barriers for low-resource populations with limited access to email and the Internet. While the digital divide in the United States is shrinking overall, there are still several persistent gaps that tend to impact non-English, low income and immigrant populations (Anderson, 2017; Ono & Zavodny, 2008).

Community health centers (CHCs), first established in 1965, “were designed to reduce or eliminate health disparities that affected racial and ethnic minority groups, the poor, and the uninsured” (Adashi, Geiger, & Fine, 2010, p. 2047). Research shows CHCs improve access to health care for underserved populations, such as low income, racial and ethnic minorities, and reduce the use of costlier medical services, like emergency departments (Proser, 2005). The role of CHCs has increased substantially as a result of The Affordable Care Act and, as a result, provide more services and support to more patients, especially Medicaid enrollees (Rosenbaum et al., 2017). CHCs also provided a key role in helping people determine their eligibility for health insurance and education about what plan to sign up for.

In the project we reflect on here, we partnered with International Community Health Services (ICHS), a CHC located in Seattle, Washington that specifically focuses on serving Asian, Native Hawaiian, and Pacific Islander communities. Our team, consisting of experienced user experience researchers, academics and students, partnered with ICHS to explore how to support their organization as they helped patients sign up for health insurance, many for the first time. Based on an internal analysis of the first ACA enrollment period, ICHS had identified several challenges for their patients (Moraras, 2014). Many of these challenges had to do with larger issues with implementation of the ACA, that included the state call center having long wait times and the online enrollment system being down for technical reasons.

Further, several of the challenges the staff at ICHS faced when enrolling patients were deemed to be culturally specific. According to the report by Moraras, many immigrant families had no prior experience with health insurance. The hour-long appointment to help patients sign up turned out to not be long enough to answer questions and decide on a plan. In some cases, mapping out family relationships within a household was complex but necessary to determine eligibility. In other cases, different family members had been in the country for different lengths of time which again increased the complexity of determining eligibility for certain programs such as Medicaid and Medicare.

Most relevant to this project was the report’s recommendation that “ICHS should develop and distribute a linguistically and culturally appropriate educational packet for clients on ACA and insurance concepts” (Moraras, 2014, p.19). This recommendation stemmed from the fact that there was very little information that could explain insurance concepts in ways that would resonate with the population they served and bridge the divide between official policy information and the needs of the immigrant populations who come to the clinic. To alleviate this challenge, ICHS designed a supplemental support document in English, called the guidebook, and planned to translate it into the common languages spoken by their patients. ICHS focused on the two largest linguistic patient populations and translated the guidebook into Cantonese and Vietnamese. The guidebook is freely available for patients in the clinic, but more importantly, it is shared with patients during the visits with the clinics in-person assisters (IPAs) – trained staff who provide informational, technical, and linguistic support to patients through the enrollment process (Pollitz, Tolbert, & Ma, 2014). The guidebooks intended use, then, was to serve as a supplement to the face-to-face experience with the IPAs.

Our team partnered with ICHS to conduct a usability study on the guidebook to understand how well it was working and how it could be improved. The detailed results of the collaborative partnership between our research team and ICHS as well as the results of the usability study are published elsewhere (Rose et al., 2017). In this article, we reflect on the choices we made as we designed and conducted the usability study.

Methods and study design

In this section, we provide an overview of the study design, including the goals and research questions, study team, participants, recruiting, scenarios, facilitation and conducting the study. The study design and consent procedures were approved by the University of Washington's Institutional Review Board and followed ICHS internal review procedures.

Goals and research questions

The goal of the study was to understand how patients experienced the guidebook, a supplement that explained health insurance options related the Affordable Care Act. The guidebook was developed by ICHS staff in English and then translated into Cantonese and Vietnamese. The translators were ICHS staff, native speakers of the language, had subject matter expertise about health insurance, and also worked directly with patients on a daily basis. Our study team collaborated closely with the staff to learn more about the health insurance enrollment challenges patients faced, and how the guidebook addresses them. This study was conducted as part of ICHS's continuous improvement process for making their materials appropriate and accessible for their patients.

The overarching research questions for the study were:

1. Does the guidebook help readers answer their insurance questions? How could it be improved?
2. Is the translation of the document clear and accurate? What aspects of the information do readers struggle with?
3. How well does the organization of the guidebook help people determine their insurance options? How do readers navigate the guidebook?

Research team

The core research team comprised of four team members: an assistant professor of technical communication and user centered design, a doctoral student in human centered design and engineering, a master's student in human centered design and engineering, and an undergraduate student in American ethnic studies. To be reflexive about our own position in the study we provide more background on each team member.

The assistant professor is a white, middle-aged woman. She did not speak either of the languages of the usability study. She herself immigrated to the United States as a child from a European country, however passes for an American due to both her whiteness and her accent. She has conducted research, including usability studies, in a variety of international and local contexts and in corporate, government and non-profit, settings.

The doctoral student is a first-generation US citizen of Filipino background. He is a heritage speaker of Ilocano, his family's native language, but now communicates almost solely in English. He is the first member of his family to finish at a four-year university and graduate studies. He has conducted user research internationally and locally for corporate, government, and non-profit organizations.

The assistant professor and doctoral student were the ones to engage the community organization and also designed the study in collaboration with the staff of ICHS. During initial planning, the study was scoped to look at the two largest language groups: Cantonese and Vietnamese. After this decision was made, they recruited the two other members of the team that helped conduct the study. They recruited the students by putting out a call at their university for people who were native speakers of Cantonese and Vietnamese and interested in taking part in the research project.

The graduate student on the team was a Masters student studying Human Centered Design and was familiar with usability testing and research. She was born and raised in Hong Kong where she received an undergraduate degree before moving to the United States at age 24. She grew up in a community that was almost exclusively Cantonese speakers. Now a working professional in the United States, she reports that she uses English in all work and academic settings and about 70% of her social life. She continues to be in very close communication with her family and speaks with them in Cantonese weekly.

The undergraduate student on the team was studying American Ethnic Studies and volunteered to be part of the research because of her passion for working with other Vietnamese immigrants and refugees. She grew up in Vietnam and Vietnamese is her native language. At the age of 14, she moved, by herself, to the United States. When she moved, she had foundational English language skills. Her parents, who still live in Vietnam, wanted her attend high school and college in the US and have more opportunities. When she moved to the US she lived with a Vietnamese host family and became very active in the Vietnamese community in Seattle. Today she works at a large multi-national technology company and she continues to be very active in the Vietnamese-American community, specifically working closely with community groups and nonprofits that support immigrants and refugees from Vietnam.

Additional members of our team included staff from ICHS who were the subject matter experts on the ACA and the population that the clinic serves. The people on the team had helped to design and translated guidebook and worked closely with patients during the sign-up process.

Participants and recruitment

In order to get feedback on the guidebook, we recruited participants who were either current or prospective patients of ICHS and were interested in learning about health insurance. In total, we recruited twelve participants: six spoke Cantonese and six spoke Vietnamese. According to the literature and common practice in user experience, six people in each group is an acceptable number of participants for a formative usability study (Nielsen & Landauer, 1993; Virzi, 1992). Patients were recruited through word-of-mouth, first from the clinic's in-person assister team with subsequent participants recruited through snowball sampling from other recruited

participants. Snowball sampling was an appropriate method in our study because it helped us quickly identify participants who were similar to the initially recruited participants and would qualify to participate (Koerber & McMichael, 2008). Since our participant pool would be harder to reach than if we used other means of recruitment, such as flyers or online postings, both of which might not easily be accessible for people with limited literacy or limited access to technology. Additionally, since ICHS could not directly provide us with information about patients due to privacy concerns related to health information, direct recruitment would not have been possible. Participants were given a \$50 honorarium in the form of a gift card to a grocery store to compensate them for their time.

Study scenarios

The scenarios for the usability study were developed through an iterative process and in collaboration with ICHS team. Scenarios are representational tasks designed to discover specific usability issues (Dumas & Redish, 1999). First, the team met with the ICHS staff to determine research questions and usability concerns with the document. Second, the team conducted an informal heuristic review of the document and drafted realistic scenarios for the study. The scenarios were then vetted with the broader ICHS team, iterated based on feedback, and then translated into the appropriate language. Scenarios included tasks related to eligibility, penalties, enrollment, and changes to insurance. As an example, we present the text of one of the scenarios below:

Task. Sharing information with a relative

You visited the home your cousin, who just recently moved with her family last year to Seattle from (China/Vietnam). She is married and has one child, a 12 year old girl. Her family earns \$29,000 a year. You think that it's important that she gets health insurance for her family and you want to give her more information.

Determine what health plans she and her family are eligible for.

Facilitating and conducting the study

The study was conducted in two days: six sessions with Chinese participants the first day and six sessions with the Vietnamese participants the second day. Each session lasted approximately one hour. Three team members attended each session: the facilitator, who spoke the participants' language, and two note takers who did not (the first and second author). The sessions were conducted in a conference room at the ICHS clinic and recorded on video. The facilitator welcomed participants, introduced the study team, explained the study procedures, and consented the participants. After administering the consent procedures, a note taker started the video recording. The facilitator provided scenarios and tasks to participants and asked participants to think aloud. Depending on the participant, facilitators modulated their facilitation approach as appropriate. Many participants were tentative and unsure about the information, so for these participants facilitators used a more engaged conversational approach. In the more conversational approach, facilitators provided more prompts and nudges through the guidebook than in a more traditional usability approach which was referred to think aloud with probing (Oyugi et al., 2008). A smaller number of participants were confident and talkative. With those participants, the facilitator chose a more hands-off facilitation. While this could be seen as a weakness in the rigor of the study, we discuss in more detail below why we believe this adaptation was appropriate for the situation.

Since only the facilitators had linguistic expertise, they also took notes during their session. They took notes in the language of the participant. Immediately after each session, the team debriefed on the session. The team stepped through the study tasks and discussed the results of each scenario. The facilitator provided details from their notes from the study and the team and discussed the finding for each scenario.

Discussion and reflection of study methods

In this section, we provide a reflection on the study methods to identify what worked well, what was difficult and what could be improved. During the study and during data analysis the study team created reflective memos to capture the choices about methods and how those choices were playing out in the study. In addition, after the study concluded the two facilitators wrote reflections about the overall process of conducting the study. These reflections were thematized and categorized and are shared in this section.

Recruitment strategies

Our successful recruitment strategies were through word-of-mouth. We asked IPAs to inform patients about the study since their patients would already meet core recruitment criteria: ICHS patients interested in enrolling in health insurance. However, recruiting through the clinic posed a few challenges. First, it would have been inappropriate to ask the clinic for names of any patients in advance of the study because the clinic needed to protect the patient's personal information. It was important that patients had the ability to approach us in order to participate in the study. Second, encouraging patients to come back to the clinic in order to conduct the study was also a challenge. Given the study was starting at the same time as the insurance open enrollment period and given how much trouble it can be to get all the materials together for enrollment, we were worried that some potential participants might have "insurance fatigue" and would not be interested in participating in another insurance related activity. Third, we had been told that many of the patients at the clinic manage their schedules from day-to-day and might find it challenging to commit to participating too far in advance. Our second recruitment strategy was to encourage already enrolled participants to recruit through their own social networks. Given the short turn-around time of the study, as is typical in usability studies, snowball sampling helped us quickly recruit qualifying participants. Since participants knew each other, they reminded each other about the study sessions and one group even arranged to travel together. Taken together, we had to be flexible with our recruiting strategies to capture representative users who were available, willing and interested in participating.

Back translation

Back translation is the process of taking a document that has already been translated into a translated language, and translating that back into the original text (Brislin, 1970; Chen & Boore, 2010). Back translation is valuable as a quality check to determine if and how the first translation has retained the original meaning, or conceptual equivalence, of the source text. Our facilitators conducted an informal back translation of the document in order to familiarize themselves with the content and to compare the guidebook's translation with the original version. We anticipated that there would be some departures from the source English material in order to make the materials linguistically and culturally appropriate for each language audience, so we wanted to make sure we were able to identify where those departures were.

Back translating generated important findings regarding the usability of the document. We learned that some of the choices made during translation resulted in making the source material more comprehensible than the original concepts in English. For example, the Vietnamese version of the guidebook provided a definition of the term “deductible” in Vietnamese that was clearer than the original English and also clearer than the Chinese, which had adhered more strictly to the English translation. The guidebooks, which were translated by IPAs, reflected the IPAs’ expertise and experience in answering common or challenging questions patients had. It was evident that they had brought their expertise exhibited in face-to-face conversations about these concepts to the translation of the document.

Pre-study walkthrough

In preparation for the study, we conducted a pre-study walkthrough in English where the team stepped through each section of the guidebook to become more familiar with the content, compared how the study materials were translated, and practiced the scenarios we planned to provide to participants. We focused on how much was explained in each version of the guidebook, where they were most parallel to each other, and where they diverged. For example, there were several subtle differences in the translation both from English and between the Vietnamese and Chinese version. Below, in Figure 1, we show one example. The top of the image shows the English version followed by the Vietnamese version.



Translation from the Vietnamese:

Medicaid (Government’s free or low-paid medical insurance for low income families) is now called as Apple Health. You may have heard this program for children. Free medical insurance for adults is similar.

Figure 1: Example of translation differences in the Guidebook

As shown in the example in Figure 1., the difference in the translated version is a subtle but important addition, it defines Medicaid in context, stating that it is the “Government’s free or low paid medical insurance for low income families.” This small addition in the translation veers from the original English but does so in a way that provides an important detail for those who might be new to this terminology and the Medicaid program.

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There were several of these types of small variations in translation. Both between the English and Vietnamese examples and the differences between the Cantonese and Vietnamese. The examples, often small, like this one, evidence how translators of the guidebook added additional explanation to support their perceptions of a reader's needs.

We wanted to understand what translation decisions were made to describe concepts that ICHS identified as being challenging to explain or understand. We went through each set of scenarios and tasks and proceeded find the answers in the Cantonese, Vietnamese, and English guidebooks. Since we wanted to understand as much of the guidebook as possible, we also used the walkthrough to evaluate how well the initial tasks were able to cover the entirety of the guidebook. Additionally, we made adjustments to tasks to improve how they matched with the content in the guidebook.

Scenarios and facilitation style

Traditional usability studies ask participants to complete tasks and provide them with scenarios that provide some background information before they are asked to complete a task (Dumas & Redish, 1999). A scenario gives participants a shared starting point when completing tasks any typically all participants complete the same scenarios. Using scenarios in a usability study is premised on participants being able or willing to cast themselves into a somewhat abstract situation, even if it is a representationally accurate.

We aimed to write scenarios in a way that were realistic and representative for the participants in the study. Since health insurance can be a sensitive personal topic involving details about health, family, and income, we created scenarios that were accurate and representational without asking participants about sensitive information such as immigration status or income. As an example of a realistic, but non-abstract, scenario we asked participants to identify the health insurance plans that a relative would qualify for. We provided key pieces of information, including residency status, age, gender, and income. We had hoped and even expected participants to treat this information as real as they used the guidebook to find an answer, but many initially responded by recognizing that they did not have a relative who matched those details. They found it difficult to proceed. We then refocused the tasks to use their own details and providing prompts to better help us understand their experience using the guidebook. Research with oral, rural users, pointed out that hypothetical situations, such as the ones typically given as scenarios in a usability study, are less successful or even problematic in non-Western, workplaces settings and may not be a good choice for studies engaging diverse cultural audiences (Gorman, Rose, Yaaqoubi, Bayor, & Kolko, 2011). As a result, the study yielded a more conversational facilitation style rather than a strictly scenario based approach. Again, a style that is more similar to the “think aloud with probing” that Oyugi found to be most productive in studies with Indian participants (Oyugi, et al., 2014).

This example illustrates the tensions in conducting what would be considered a rigorous usability study from Western perspectives while accommodating participants and their differences. Rigor in usability studies is based on a triad of credibility (how well the study measures usability as defined by the user), transferability (how well the study conditions match real world conditions), and dependability (how confident we are that the results could be repeated) (Hughes, 1999). One

common way to promote rigor is by conducting each session as similarly as possible, thereby increasing its dependability. But as we learned about the diversity of our participants, we realized we needed to adapt our study to accommodate their different goals and expectations of the guidebook.

We also encountered cultural differences and educational differences in individual participants. Though we didn't directly ask participants their education level, one of our interpreters suggested that some participants had lower levels of education that limited their ability to read the document with proficiency. Cultural differences might have resulted in participants avoiding probing questions for which they did not immediately have answers. We also encountered differences in health insurance literacy. Health insurance literacy refers to the ability for individuals to understand health insurance information to make decisions for themselves (Blumberg et al. 2013). Some participants came to the study highly motivated to learn about health insurance, and a few had spent much time on their own to research their options while others were quite unfamiliar with the concept of insurance and therefore struggled with the terminology.

For the participants in the study who had a high level of education or health insurance literacy, the facilitators used a more traditional style of usability study facilitation to learn how the guidebook filled gaps in participants' knowledge and addressed their expectations. For participants with lower levels of health insurance literacy who tended to rely more on the help of IPAs, the facilitators modified their style. They were less driven on having participants complete scenarios as planned in the original study protocol, and instead refocused the facilitation to understand what kinds of questions they expected the guidebook to address and how they might discuss these questions with an IPA.

By adapting our facilitation approach, we were able to capture a wider range of usability considerations than if we used a strictly scenario-driven approach. And by taking a more conversational approach, our sessions were closer to how the guidebook would be used for some users – as a tool to scaffold conversations with an IPA. These improve credibility and transferability, respectively, and thereby help to provide rigor for the study. These adaptations mirror other studies that have addressed conducting usability evaluations in cross-cultural settings and made similar adaptations while striving for rigor (Gorman et al., 2011; Paterson et al., 2011; Walton et al., 2014).

Balancing cultural, linguistic, and research expertise

When conducting the study, assembling a team with the right mix of cultural, linguistic, and research skills was challenging. In order to mitigate the challenges, we structured the study so that after each session, the facilitator would review notes from the session, and share everything that she remembered with one of the observers/note takers so that the study could then be documented in English. This method of a quick transfer of knowledge from a facilitator to other team members immediately after a study session has been successful in other studies (Racadio, Rose, & Boyd, 2012). However, this method was not as seamless in this study because the complexity of the subject of health insurance, the length of the session, and the need to move between two languages made it taxing for facilitators to recall study details.

There was a lot of pressure on facilitators as they fulfilled multiple roles: facilitator, interpreter, and note taker. The team members who did not have linguistic expertise could only get a broad sense of how the study was going from observing the interactions between the facilitators and the participants, and were limited in the ways they could analyze the data during post-session debriefing.

In retrospect, it would have been beneficial to add an additional person to the study who could take notes in the language of that participant. Having a note taker who can speak the language could provide additional the team insight and understanding of the data collected in the study and help relieve the facilitators from having to play multiple roles. While this seems like a clear takeaway, there is the challenge of finding someone with both linguistic and research skills. A second option is to have the sessions transcribed and translated after the study session to further support in-depth analysis. However, in this study our team did not have time or budget for transcription and additional translation.

Further, having the additional team members, the ones who did not speak the language, in the room is also a feature of the study we would change in the future. The contribution from these team members in the room, beyond technical support, was limited. Usability studies can make people feel nervous and therefore it is important to take care in establishing a comfortable experience for the participant (Dumas & Loring, 2008; Dumas & Redish, 1999). In retrospect, having two additional people in the room who did not have language expertise did not provide a significant benefit. Instead, their presence may have added to an already awkward experience for the participants. In the future, these team members could have either tried to watch the study from a separate room or just taken part in debriefing sessions.

Integrating the study context

While we followed standard usability practices in conducting this study, by conducting the study one-on-one with a facilitator, using realistic scenarios and engaging representative participants, there were several limitations to conducting the study in this way.

The guidebook that was the focus of the usability study was designed to be used during appointments between a patient and an IPA and also, as a reference guide to review or share with family or friends. In our study, we investigated the participants' interaction with the material in the guidebook on their own. Although, we did modify a traditional think aloud protocol to be more conversational, the study still had limitations in being conducted in this way.

A more realistic, in-context study could provide greater insight into how the guidebook scaffolds information and how it is used as a reference by the IPAs for patients. Translating from a source language to a target language is not a one-to-one process, and translators negotiate how close their translations stay to the source materials meaning and how much they diverge in order to help with the audience member's comprehension. As a study by Gonzales & Zantjer shows, translators draw on a variety of rhetorical strategies to communicate hard to translate words and concepts, such as using physical movements, like acting and gesturing, deconstructing a word or concept, and storytelling (2015). Further, translators vary their strategies based on audience responses and their practices "are accomplished via multiple, layered, and sequenced strategies."

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(Gonzales & Zantjer, 2015, p.280). By conducting a traditional usability study, we miss out on these moments of localization that happen in the moment between the IPA and the patient and how these communicative acts inform and supplement the design of the guidebook.

While we learned a great deal about the usability issues from the guidebook and what to improve, by conducting a more typical lab-based study, we missed opportunities to understand what other frustrations and challenges might during the enrollment process, such as collecting the documents needed to enroll or resolving technical issues of signing up online. By watching how patient and an IPA use a guidebook together to understand health insurance, we may be able to learn valuable insights on how the guidebook supports a patient's ability to understand their health insurance options, as well as learn strategies to help improve the translations in the guidebook or how it can be used in face-to-face conversations. While observing sessions between patients and IPAs might have been ideal, it was not possible or appropriate for us as researchers and outsiders to this organization.

Reflecting on methods and methodology

As we learning as part of this study, testing in multiple translations and with transnational users, complicates traditional usability testing methods. In this section, we reflect on the study methods including some areas of recommendations for others doing similar studies. We also discuss possible tensions that arose in a methodology that attempted to meld pragmatism and social justice.

Incorporate back translation as part of the evaluation process

Back translating the translated materials became an important activity for understanding how the guidebook was able to meet the needs of users. It fulfilled several purposes. First, it was one way for us to understand what decisions and strategies translators made to help users understand the material. The translators each had different perspectives on how the guidebook could best address users' needs, and identifying successful strategies across translations provided inspiration for improving all translations. Back translation also helped our team developed a stronger understanding of the guidebook and subject matter, which informed how we facilitated the study.

We recommend that team members with linguistic expertise back translate study materials. While this can be done in an individual and asynchronous process (by having a team member write out a translation of the study materials to share with the team), we found that an informal, collaborative back translation to be valuable since we could discuss the translations in person and how we would explore and address any differences in the usability study. Additionally, we also recommend using the back translation process as a way to identify effective translation strategies and decisions to improve the other translations and the source materials.

Tailoring scenarios and a more conversational facilitation style

Other research has shown that hypothetical situations, such as the ones typically given as scenarios in a usability study, are less successful or even problematic in non-Western, workplaces settings and may not be a good choice for studies engaging diverse cultural audiences (Gorman et al., 2011). Therefore, while we would still use scenarios that were

designed to identify particular issues with an information product, we would also provide more personalized scenarios that could be adapted during the study in order to give a more realistic and accurate situation for a participant to enact.

After running this study, we would also recommend using a more conversational style of facilitation for usability studies with transnational participants. The participants came to the study at various stages in the enrollment process, with a range of understanding of health insurance, and with a range of health and linguistic literacies. The standard task and scenario-driven approach worked well for participants with more familiarity with concepts related health insurance. But for participants who had less previous experience with these topics, we needed to facilitate with a more conversational and discussion-oriented approach to help them feel comfortable, while still allowing us to learn how the guidebook could better serve their needs.

Aligning the study to the context of use

Initially, we conducted the study to evaluate how the guidebook could help patients learn about health insurance options under the Affordable Care Act. But we discovered that participants had different needs and expectations of the guidebook, and most would use it in conjunction with counseling with IPAs. Since we did not conduct the study in the context of a session with an IPA, we were unable to observe how well the guidebook served as a mediating artifact in developing an understanding of health insurance – one of the guidebook’s key intended uses. Thus, we recommend that when designing other studies of translated, complex information, researchers should strive to conduct the study in an environment as close as possible to the context of use to build a more nuanced understanding of what goals and resources users have. What this means for our particular study, is that we would conceptualize the study design to prioritize a more naturalistic setting to get closer to how the guidebook was used. This could include observing sessions with IPAs or structuring group usability sessions or workshops where groups of representative users discussed the information or experience together in a group or workshop setting (Gorman et al., 2011; Paterson et al., 2011).

Ensuring a mix of cultural, linguistic, and research expertise

Conducting this study required our team to possess a balance of cultural, linguistic, and research expertise to drive the study design and facilitation. This balance may need to be flexible and adjusted depending on what resources are available and the constraints of the study. Though we only had one facilitator for each language, we chose not to use interpreters to translate during for the study. This was partially due to concerns about disruption in the session and cost. We also were not able to transcribe the sessions after the fact due to time and cost. These choices meant that our access to the data was fleeting. In retrospect, concurrent interpretation or defacto translation would have helped the study and overcome the language limitations of the two designers of the study.

When it comes to working with non-profit and community based organizations, a main takeaway is that language skills are more important than research skills. Training and mentoring staff on usability research in order to conduct studies would have been a beneficial contribution of the project. But here again, we encounter challenges related to resource constraints. The staff at

ICHS while supportive and appreciative of the study and its results, had limited time available to take a larger role in the study due to the heavy workload of an open enrollment period.

Final thoughts on honoring and honing a methodological approach

As we defined earlier, we conceptualized our methodology as one that blended advocacy and activism with pragmatism, and as a result, selected methods in line with this approach. However, reflecting back, our approach seemed to be tilted more towards pragmatism than social justice. Pragmatically, the study provided value to the organization and its users. According to ICBS, the results of the study were helpful and informed the second iteration of the guidebook. Further, we were able to conduct the study in a way where our team was able to take on the bulk of the work of designing and conducting the study and analyzing the data. We knew that the ICBS staff were busy and therefore our team was committed to doing the study independently so as not to take up valuable staff time. Our research team donated our time and expertise at no cost to the organization due to our social justice commitments and our interest in supporting what we felt was important work by this organization. We also funded the honoraria for participants. However, we also benefited from the study both intellectually and from the opportunity of being able to write research articles, like this one, to contribute to scholarship in the field.

While we were aware of the literature on conducting usability studies and modifying methods for international contexts, many of our method choices for the usability study borrowed closely from more traditional usability studies that we are experienced with as researchers practicing in corporate settings in the United States. This was done mostly out of pragmatism, we understand how to approach a usability study in this context. At the time, what seemed like large shifts to change our methods, like using a more conversational style of think aloud protocol and more concrete, rather than abstract scenarios, now in retrospect seem more modest. These modest modifications had modest effects.

There are several areas of the study where our commitment to social justice could have been foregrounded. A longer and more sustained engagement with the organization could have potentially created the conditions to iterate on study methodology in a way that could put our initial study reflections into action. For example, we could have provided training in usability testing for ICBS staff so they could conduct their own studies as part of other activities. Alternately, we could have conducted radically different types of usability inspection methods in a collective setting, like a workshop or group setting, that could have further privileged elements of transnationalism that could honor and incorporate the collective and community based approaches to investigating usability.

Conclusion

Conducting our study showcased the challenges and opportunities for evaluating information with transnational audiences in this study of a translated document for multiple audiences. User experience researchers and practitioners can be invaluable in supporting transnational users, however we must approach the task with humility and care. We need to leverage cultural and linguistic expertise to adapt usability methods to meet users' diverse needs. We acknowledge that working with transnational audiences and the organizations that support these groups can be

complex and require adaptation and improvisation, but this is a challenge we hope that others will continue to explore ways to improve both methods and information for these populations.

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