Building "Design Empathy" among HCI Students for People with Disabilities

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While accessibility researchers advocate for building "design empathy" among technology designers for people with disabilities, engaging HCI students directly with these populations in contemporary classrooms to build empathy is highly challenging. Thus, HCI educators use curated disabled experiences (e.g., simulation or personas) in the classrooms to teach students about disability experiences. However, these methods do not convey the holistic experience of people with disabilities. We propose a new way of teaching design empathy: bringing students into contact with the real-life experiences of people with disabilities through a curated set of their public social media posts.

Additional Key Words and Phrases: Design Empathy, HCI education, Motor disability

1 INTRODUCTION

Building "design empathy" is a crucial step in the HCI and accessibility research while designing for people with disabilities [2, 3]. According to Bennett and Rosner [3], technology designers should develop empathic connections with the users with disabilities as their companions (e.g., being-with) instead of "mimicking" (e.g., being-like) them. In this workshop paper [referred publication [9]], we draw attention to how HCI education can build "empathy" among students so that they can understand the experience of this systematically underrepresented population.

2 PROBLEM STATEMENT

Among many other domains where people with disabilities are under-represented, Human Computer Interaction (HCI) education research is a crucial one. While one of the primary goals of HCI education is integrating inclusivity and diversity in HCI classes, direct engagement with people with disabilities is challenging in the contemporary classroom setting. Notably, accessibility researchers demonstrated that gaining access to research participants with diverse disabilities (e.g., people with a spinal cord injury [6] or low vision [7]), or conducting research with these populations using contemporary HCI research methods is challenging. For instance, Kabir et al. [6] showed that individuals with severe motor disabilities (e.g., spinal cord injury/tetraplegia) often have other comorbidities, including speech impairment or breathing difficulties, in addition to other accessibility needs (e.g.,

transportation). Therefore, these people often get excluded or remain underrepresented in HCI research. These difficulties of conducting research with participants with severe disabilities also apply to classroom settings, and they remain unrepresented in course-based research studies or projects. Thus, novice HCI students rarely have the opportunity to observe or learn about first hand experiences and needs of this population as potential users of technology. This results in a disconnection between the novice designers and the potential users, which impede building design empathy among the students for this population.

3 CONTEMPORARY WAYS OF TEACHING DISABILITY EXPERIENCE

3.1 Imitating Disability

Contemporary HCI education often opt for disability simulation— where tasks or exercises are designed primarily to imitate disability affects (e.g., wearing blindfolds and gloves to obstruct vision and tactile sensations to imitate the disability experience). Indeed, these exercises do not properly convey the actual disability experience, often fail to shift a designer's thinking process outside themselves [1], and may not build design empathy among the students [9]. Another negative consequence of disability simulation is that imitating disability experiences lead participants to underestimate the true capabilities of people with disabilities [10].

3.2 Task Interventions

Many HCI educators and researchers also shed light on different task interventions to teach students about accessibility (e.g., lectures, assignments, and projects). For instance, Oleson et al. [11] explored undergraduate students' accessibility awareness and knowledge through accessibility lectures and interactions with stakeholders with disabilities within an HCI class. Similarly, Tseng et al. [13] integrated guest lectures, assignments, and project interventions to teach students accessibility aspects. However, researchers found that those initiatives fell short to teach students about disability experiences and students failed to connect accessibility needs with assistive technology design.

3.3 Personas and Technology Guidelines

Motahar et al. [9] reported using cognitive walkthroughs with personas with disabilities [14], WCAG software development guidelines [15], and video demonstrations of assistive technology [12]. However, these approaches teach students an assumed or shallow understanding of the lived experiences of individuals with disabilities. Thus, the aim of design empathy was not fulfilled.

4 TOWARD BUILDING DESIGN EMPATHY AMONG HCI STUDENTS

Prior HCI and accessibility researchers strongly advocated for the inclusion of people with disabilities in research about them. For instance, Mankoff et al. [8] argued that accessibility research should facilitate engagement with individuals with disabilities in a holistic way to understand their true experiences (e.g., likes, dislikes, thoughts, and feelings). Thus, to build design empathy among HCI students for people with disabilities, engagement with these people is necessary. Since direct engagement with these populations is challenging in the contemporary classroom setting, students might benefit from additional alternative ways of teaching students about the lived experiences of these target users.

4.1 "Being-like" vs "Being-with"

To make the students aware of the differences between "being-like" and "being-with," HCI educators need to teach students the limitations of the methods they are teaching in classrooms (e.g., simulation, personas). HCI instructors can use creative example scenarios (e.g., attending a class-lecture being an observer versus being a

student for credit) that students can relate. These exercises can help students understand the differences between having a "glimpse" of someone's life and living the challenges holistically.

4.2   Using Curated Social Media Data for Building Design Empathy: "Being-near"

Due to the challenges of engaging individuals with disabilities and using their first-hand experiences in HCI classrooms, we propose using their public social media data (rephrased and curated) to provide students with glimpses into the nuances of the target user's lived experiences. As individuals with disabilities and chronic conditions heavily rely on the internet [5], and share their day-to-day challenges and experiences within similar groups on social media [4], closely observing and analyzing social media activities (e.g., posts, comments, threads) of people with disabilities might provide students with some insight into their lived-experiences. Thus, HCI educators might let students learn and analyze disability-specific public social media data—following all ethical considerations of using public social media data (e.g., anonymization, paraphrasing)—to indirectly be with, or at least "be near," the target population.

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