User-Led Storytelling with Generative AI Artifacts to Promote Empathic Design

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Abstract

Empathy is a pervasive design principle in human-computer interaction (HCI) and can inspire better user-centered design solutions. However, empathic design practices in HCI are usually led and interpreted by the designer rather than the user, resulting in gaps in empathy between product stakeholders and users. Generative artificial intelligence (GenAI) technologies enable a shift in the social practice of empathic design towards empowering users to lead empathic interactions through rich expression of their lived experiences. This position paper proposes the application of GenAI for user-led storytelling to promote user empathy in design, outlining an ongoing research project around GenAI tooling for end-users to author storyboards as well as suggesting future areas of research for empathic design artifacts.

Keywords

empathy, empathic design, storytelling, GenAI, HCI

1. Introduction and Background

Empathy can help people acknowledge and understand each other. While it eludes a universal definition [1], empathy has generally been understood as the "intuitive ability to identify with other people's inner states based upon observation of their outward expressions, their behavior" [2], where these inner states include "people's thoughts and feelings—their motivations, emotions, mental models, values, priorities, preferences and inner conflicts" [2]. Human-computer interaction (HCI) research has explored empathy as a design principle for guiding user-centered design and creating social connections among users [1], applying empathy in different research contexts such as medical patient-provider relationships [3], education [4], gaming [5, 6], and racial bias [7]. In the design context, the field of empathic design explores "using our understanding to inform and inspire the creation of more useful and enjoyable things for people we may never meet" [2]. For example, empathy is salient for forming and communicating user stories in product design.

However, HCI research still observes gaps in empathy between design stakeholders and product users [8, 9, 10, 11], such as with stakeholders rejecting user viewpoints based on judgmental biases [9, 11]. One explanation for this is that cultivating empathy is naturally subjective; how a user story is told affects its empathetic response. Research has explored how narrative style can affect empathy [12, 13], emphasizing the importance of storytelling for empathic design [14, 15]. In addition, an individual designer's own perspectives can influence their empathy for others [16].

This underscores an overlooked issue: empathy is often designer-initiated. Given these challenges of the subjectivity of empathy, the apparent gap in empathy between design stakeholders and users, as well as the designer influence on interpreting and communicating user stories, there needs to be a shift in the social roles in empathy research to *empower the user to lead empathic interactions* in design. At the same time, advancements in generative artificial intelligence (GenAI) offer new affordances to *democratize expression and creation* to more users, presenting an opportunity to promote agency for

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product users in empathic design. *This position paper argues that recent GenAI capabilities enable a shift from designer-interpreted empathy towards user-led empathic expression through co-created design artifacts.* We present context for planned and ongoing work on the application of GenAI-powered design artifacts for user-led storytelling techniques to promote user empathy, outlining considerations and exploratory directions for research discourse on empathy.

2. From Designer-Mediated Empathy to User-Led Expression

User research treats the user as the expert of their stories and experiences. However, empathy research risks distancing users as "other" targets of empathy from design processes meant to benefit them [17].

To make this more concrete, designers often utilize digital artifacts in user research such as storyboards to foster empathy. Storyboards are visual artifacts which can probe potential users for early feedback and also ground product teams' shared understanding and prioritization by communicating user needs. If product teams can see and empathize with their users through storyboards, they can better anticipate user needs and minimize unintentional harms, as well as design better solutions for real users. However, any storyboards that designers present to users are constrained by the designer's ideas, and storyboards that designers create from user input are necessarily filtered through their interpretations.

This suggests *the need for more empathy interactions led by users and their lived experiences*, rather than interactions solely led by designers and researchers, to balance power dynamics and foster shared understanding [18]. User experience storytelling tools tend to focus on the designer's needs and use cases [19, 20, 15], with only a handful of projects explicitly incorporating user feedback and involvement [21, 22]. Previous work has demonstrated the potential of cultural probes as design tools to understand users through empathy and engagement, by eliciting users' inspirational responses about their contextual environments and cultures [23], though these probes weren't meant to act as design artifacts themselves. Participatory design is also a method to involve users in co-designing solutions for themselves [24]. However, empowering users to tell their own stories in artifacts that elicit empathy from designers and product stakeholders remains underexplored.

3. GenAI Affordances for User Expression

Participatory design is a way to promote collaboration, co-creation, and user empowerment, but it requires significant time and effort from participants [24]. In the case of storyboards, co-creation of storyboards requires users to have storyboarding knowledge, including contextual understanding as well as confidence or skill in visualizing and drawing interactions, which even novice designers struggle with [25].

Recent advances in GenAI promise to make image and video generation more accessible to more users [26, 27]. Through high-level text prompting, rapid prototyping, and expressive customization, GenAI provides new affordances for creating design artifacts. While GenAI is already applied for designers in HCI research [19, 20, 21, 22], more work should explore how to make its technical affordances accessible and usable for general users who might not have specialized design experience.

Leveraging GenAI to promote user interactions with and creation of design artifacts can supplement user feedback and foster designers' empathy for the human user. We are interested to see how enabling and reporting novel user interactions with digital artifacts for user research affects their feedback and designers' understandings of their users.

4. Ongoing Project: AI-Supported User Storyboard Co-Creation

Since GenAI offers an opportunity to make storytelling more accessible for more users, our ongoing research explores user-led storytelling with storyboards, a common design artifact for demonstrating contexts of system use [25] and for grounding team empathy [28]. We developed a storyboard authoring tool based on related work exploring tooling for designers [20] but adapted for end-user customization

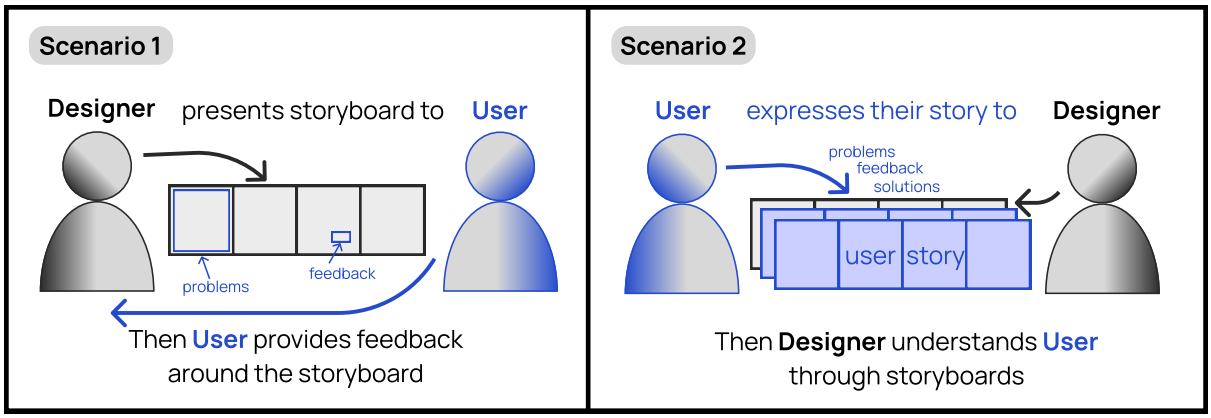

Figure 1: Scenario 1 outlines a traditional designer-led feedback elicitation with a static storyboard, where user input is limited to discussions around the designer-presented artifacts and questions. Scenario 2 outlines our proposed user-led story creation with our tool, where user input includes storyboard artifacts with embedded input.

and creation. We focused on prompting for users' experiences and emotions without design jargon, in order to surface empathic details relevant to user stories. On a technical level, we sought to enable high-level content generation as well as iterative editing of individual frames in storyboard sketches while propagating changes to the storyboard narrative for cohesion.

Our planned experimental procedure aims to compare our authoring tool with the traditional baseline of designers presenting static storyboards to users, without our GenAI-enabled co-creation or editing capabilities (Figure 1). We will present a task asking participants to provide context on their problems and experiences as users for a given design context and their input on potential solutions. We will compare participants' reported feelings of expression and agency, self-evaluated performance, and enjoyment as well as extent of design insights, diversity of artifact outputs, and quantitative participant engagement with and without the GenAI authoring capabilities. We will also compare designer participants' reported feelings of empathy for users through these artifacts, empirically exploring the relationship between empathy and user-led expression.

Based on this study's observations on user-led storyboard creation, we hope to better illuminate how GenAI affordances can empower users to express their lived experiences while creating empathic artifacts useful for designers. Follow-up work could include how to analyze and present these user-created artifacts in empathic ways to design stakeholders, how to support AI co-creation for marginalized populations, and how to democratize richer expression of users' lived experiences with other media such as cinematic videos. We hope to contribute to the research discourse on the role of recent AI technologies in empathy and how those technologies can promote users' lived experiences for empathic design.

Declaration on Generative AI

The authors have not employed any Generative AI tools for authoring this paper or figure.

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