

Integration of Equity, Diversity, Inclusivity, and Indigeneity Principles into Usability Heuristic Evaluations

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Abstract. Cognitive walkthrough is a form of usability testing that considers the perspective of the end users to identify issues related to user experience and web design. This project aims to enhance traditional heuristic evaluation methods with consideration of equity, diversity, inclusivity, and indigeneity (EDI-I) principles. The authors provide suggestions that align with modern informatics advancements, aiming for inclusive design systems and the elimination of systemic barriers.

Keywords. Equity, Diversity, Inclusivity, Indigeneity, Usability, Heuristics

1. Introduction

Developers conduct cognitive walkthroughs to evaluate the usability of digital health interventions through the lens of the anticipated end user. The well-recognized Nielsen heuristics evaluation method [1] is commonly used to assess user interfaces and identify issues with respect to a set of ten usability factors [1;2]. Although this method has maintained its relevancy since its origin in the 1990s, it notably lacks consideration of equity, diversity, inclusivity, and Indigeneity concepts (EDI-I) when assessing the usability of end user experience. Indigeneity is defined as the recognition and appreciation of Indigenous ways of knowing [3]. Emerging literature has suggested that digital health poses a unique opportunity to intentionally address health disparities faced by marginalized populations [4]. Integration of EDI-I concepts into heuristics would enable designers to create digital tools that are human-centered and provide equitable solutions for healthcare systems. The purpose of this project was to explore the incorporation of EDI-I concepts into traditional heuristics.

2. Methods

The authors conducted a cognitive walkthrough of an online platform and identified four key EDI-I related considerations that the traditional heuristics evaluation method

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did not address. Indigenous pedagogies for reconciliation and anti-racism by Chrona [5] and UBC's Strategic Equity and Anti-Racism (StEAR) framework [6] guided recommendations for the integration of EDI-I considerations into the evaluation.

2. Results

Table 1. EDI-I considerations and suggested heuristic principles

Considerations	Description and Rationale	Heuristic Principle
Ableism	Accessibility features can aid those with differing cognitive or physical abilities. These include keyboard and functionality features, e.g., screen reader, captions, etc.	Considers the diversity and uniqueness of human strengths and individual learning needs.
2SLGBTQIA+	Integrating gender-inclusive language validates members of the 2SLGBTQIA+ community and acknowledges the historical underrepresentation of this population.	Employs thoughtful language that incorporates gender-neutral terms and imagery.
Language	Online platforms with the ability to view or translate content into various languages, enhances user accessibility and promotes inclusion among linguistically diverse communities.	Depicts a variety of languages and dialects in a respectful manner.
Ethnicity & Culture	Representative web design imagery that includes a variety of ethnicities, cultures, and religious groups promotes a welcoming user experience.	Acknowledges variations within racial, ethnic, and social groups, respecting their diversity. Aims to avoid cultural appropriation and stereotypes.

Note: 2SLGBTQIA+ (Two-spirited, lesbian, gay, bisexual, trans, queer, intersex, asexual, plus communities who belong to minoritized sexual orientation and gender identity groups)

3. Conclusions

Integration of EDI-I concepts into heuristic evaluation methods can foster an inviting user experience for historically underrepresented populations. Additional cognitive walkthroughs are warranted to analyze the benefits of EDI-I concept integration into heuristics beyond the one online platform that was considered in this project.

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