

論文審査の要旨および担当者

報告番号	甲 第	氏 名	Ximing Shen
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(論文審査の要旨)			
Thesis Title: Contextualising Embodied Disability Simulation through the Design and Practice of Dementia Eyes			
The thesis submitted by Ximing Shen explored and examined the new value of embodied disability simulation through her designed application, Dementia Eyes, which simulates dementia visual impairment using Augmented Reality (AR) technology. By evaluating Dementia Eyes in two different contexts, including caregivers' education and older adults' self-reflection, the author demonstrated the importance of the proposed co-design process in the disability simulation to make it applicable within a broader user ecosystem, not just drawing empathy.			
Thesis Structure			
This dissertation is written as a design dissertation consisting of seven chapters.			
Chapter 1 begins with the foundation of this research context, including the current status of dementia and its education and how disability simulation has been historically used.			
Chapter 2 provides the related works on dementia, BPSD (Behavioral and psychological symptoms of dementia), technologies that support dementia and positive ageing, and simulation studies in HCI (Human-Computer Interaction). Also, the concept of interdependence in the accessibility community is introduced as a basis of this research.			
In Chapter 3, the proposed co-design framework of the disability simulation and the design process of Dementia Eyes was discussed in detail. The pilot study with dementia health professionals using the prototype's final version verified the prototype's functionality in simulating dementia visual situations.			
Using two chapters, the author conducted the quantitative and qualitative analysis to evaluate Dementia Eyes in two different contexts: a perspective from the caregivers' education in Chapter 5 and another from the older adults' self-reflection through the community workshop and a two-week at-home study.			
In-depth findings from both chapters are further discussed in Chapter 6. The discussion includes challenges for simulating the lived experience and implications of using XR technology as a tool in clinical education.			
Chapter 7 concludes the research and further discusses the contribution, limitations, and			

potential future directions of the study.

Contributions, Impact, and Significance

Disability simulation has been controversial regarding its effectiveness and appropriateness in understanding the disability it simulates. As interactive technologies advance, it becomes crucial to enable these activities to transition into digitally mediated formats and explore and guide the future usage of such simulation technologies. This research showed the broader roles of embodied disability simulation using immersive technology and gave a different view of disability simulation.

The author also pointed out the importance of acknowledging that simulation studies inherently present a complex ethical landscape. This research promoted an understanding of these complexities with large-scale fieldwork and interviews with several accessibility stakeholders.

As a significant contribution to society, this study opened a new door to the future applications of disability simulation activities in healthcare and education.

Summary

The review committee concluded that the dissertation's contributions to social impact, research output, and quality meet the requirements for a Ph.D. in Media Design.

Assessment Process:

1. The doctoral dissertation proposal defense was conducted online on May 28th, 2024, 16:30-18:00 JST.
2. The dissertation advisory committee examined and judged the result based on the proposal and the oral examination. The result was approved by the KMD graduate school committee on August 1st, 2024.
 - The principal advisor: Kouta Minamizawa
 - The members of the advisory committee: Keiko Okawa and Chihiro Sato
3. The public doctoral dissertation defense was held at the C3S01 classroom and online on January 27th, 2025, from 19:00 to 21:00 JST. After the public defense, the doctoral dissertation review committee, the primary advisor remaining in C3S01, and Prof. Singh staying online conducted the final assessment and decided to approve.

The following are the participants of the public doctoral dissertation defense:

- 6 members of the doctoral dissertation review committee
- The principal advisor
- 11 other participants (including one in the classroom)