12 JUNE 2025 14.00 - 17.00

Panel 33. Digital Inclusion and Disability: Theoretical, Methodological and Ethical Challenges

Convenors:

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Lorenzo Dalvit, Rhodes University

Keywords: disability; digital inclusion; participatory process; social inequalities

Digital inclusion is often credited with the potential to address social inequalities and benefit members of marginalised groups. Among these, people with disabilities are of particular interest. While they account for a considerable portion of the population in every country, they are often under or mis-represented in the online domain and accessibility of Web portals or resources is often treated as an afterthought. Along with the emergence of social justice demands directly formulated by people with disabilities in the United States (Berne et al., 2018), a growing number of studies highlight the problematic nature of negotiating power in digital terms (Ellecessor, 2022). There have also been reflections on the need for new models of AI design and use, especially for public administration, informed by perspectives suggested by disability studies, among others, and hopefully more equitable and open to diversity in intersectional terms (Zhang and Goggin, 2024; Newman-Griffitt et al., 2023; Goggin and Soldatic, 2022).For this panel, we seek theoretical, empirical contributions or case studies that address the emerging challenges of conducting research on digital inclusion and disability at different levels. Considering digital devices, search engines and AI as socio-technical devices to which specific imaginaries are attached, we focus on the declinations and the role that social vulnerability, such as disability, plays and can play. Against over-reliance, we welcome elements, practices and case studies that enable an imaginary that is increasingly sensitive to the limits of digital artifice (Bory, 2024) and highlight unexpected, alternative and preferably participatory practices of use.For instance, in terms of macro design, existing theoretical models need to be reviewed and new ones developed in order to correctly conceptualise the new challenges posed by digital technology and its constant evolution. How and to what extent do digital development companies promote an organisational culture open to diversity? Through what methods are local and national public bodies in the global North and South (administrative, cultural and medical) planning to deploy devices and AI that ensure the representation and respect of social diversity and the broad participation of the population? How can scientific research facilitate and promote the process of co-construction from below of new paths of participation and development?In micro terms, how are power asymmetries in methodological issues, such as those posed by algorithmic bias, (non-)searchability, concealment/disclosure of one's condition, etc., perceived and what counter-reactions are suggested? These aspects deserve to be adequately analysed in different fields of application, such as social media, public administration, surgery, prosthetics and medical care, public referendum initiatives, private company applications, etc. Finally, we also welcome contributions addressing specific ethical challenges, ranging from the choice of appropriate terminology to the ability to identify and denounce the dynamics of stigmatisation and micro-aggressions.

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ID 318 - Digital Technology for Museum Accessibility. A Framework of Possibilities for Overcoming Sensory Disabilities

Weihuan Hou, Politecnico di Milano

Dina Riccò, Politecnico di Milano

Keywords: Digital Inclusion, Museum Accessibility, the Sensory Impaired, Assistive Technology, Accessible Design

The European Accessibility Act, launched in 2019, indicates the importance of highly accessible products and services for building a more inclusive society. In particular, making the digital world accessible to all

is an overarching issue for contemporary technology-driven societies. The talents that digital technology possesses for creating new modalities of interaction are undergoing an important transformation of application, expanding from serving the general public to benefiting all people, notably people with disabilities, enriching their access to information, and becoming a pivot for accessibility in modern societies. However, digital technology, as a powerful tool for breaking with tradition, needs to be explored in terms of its effective utilisation. The aim of this study is to identify the role of digital technology in enhancing the accessibility experience for people with sensory impairments, particularly in assisting the acquisition of cultural information. This study started with an in-depth exploration of how different types of assistive technologies affect the communication of information for people with sensory impairments through field work on accessible technology solutions exhibited at the Google Accessibility Discovery Centre (ADC). Then we compared the technology provided by four multinational technology companies: Google, Microsoft, Apple, and Huawei to explore how digital technology transforms and facilitates the way people with sensory impairment interact wit h information. By observing and analyzing the application of these digital technologies in living scenarios, we then reflected on their accessibility prospects in the cultural aspect and sought to position the role of digital technologies in the context of museum accessibility. The analysis highlighted that digital technology is undoubtedly a powerful "facilitator" to assist people with sensory impairments to access information more efficiently, accurately, conveniently, and freely, however, it needs to be designed and integrated properly into the accessibility experience in order to maximize their supportive potential, otherwise they may create unexpected barriers. Finally, we defined the roles that different types of digital technologies may have for different accessibility needs, drawing on the principles of accessible design, and we created a diagram of the potential for these assistive technologies to be used as solutions to enhance access to cultural information in the context of museum accessibility, thereby better enabling digital technologies to be meaningfully designed. The diagram can also be used to guide the optimal adoption of assistive technologies in museum accessibility projects.

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ID 412 - Decibels, diversity and dirty laundry: deploying concepts of good in crowd-sourced sound apps

Nicole Matthews, Macquarie University

Keywords: mobile apps, crowd sourcing, inclusion

This paper will interrogate the way social good is framed in the development, marketing and dissemination of phone apps that focus on the dangers of noise in public spaces. Each of the three phone apps uses crowd sourcing of data, drawing on phone decibel-meter to collect sound in public spaces. Hush City, developed in Europe, prompts its users to undertake measurements in urban green spaces; ListenAppforSchools, developed in Australia, aims to assess noise levels within schools and universities while SoundPrint, developed in the US focusses on data collection in cafes, restaurants and bars. Such collection of data from "citizen sensors", in the words of Gabrys and Prichard "often promises a relatively friction-free form of empowerment" (2016, 358). The "vision" (Light et al 2018) of these apps situates each as pursuing good in aiming, respectively, towards traffic calming and the greening of cities; educational inclusion; and enabling participation in the social world by hard of hearing or neurodiverse consumers. The paper unpacks moments in which these framings of "technology for good" are challenged in as the apps are deployed, mapping contestation of who gets to define what counts as 'good'.

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ID 731 - ISENSE: Virtual Reality and Technology Impact of Sign Language in Health Teaching

María Álvarez Cantos, Universidad de Córdoba
Bárbara Gómez Peña, Universidad de Córdoba
P. Aparicio-Martínez, Nursing, Pharmacology and Physiotherapy
E. Yeguas-Bolívar, Computing and numerical analysis
María Dolores Redel, Engineering projects
A. Bisio, Universidad de Córdoba
J. Taborri, Università della Tuscia
E. S. Rossi, Università di Tuscia

Keywords: Virtual Reality, Health Personnel, Empathy, Education, Nurse, Sign Language

Introduction: The experience of the deaf community offers a complex, unique and enriching perspective that explores different communicative and cultural aspects compared to other communities. Hearing impaired person comprise a minority group who have to overcome diverse barriers to be properly heard and attended in a health environment. Moreover, health professional's low formation in sign language as well as the associated stigmas of this prevent good communication and therefore, a poorer care quality. According to Virginia Henderson's nursing model, currently used in the profession, nursing care aims to meet a person's needs, including communication. Nurses must adopt a holistic and comprehensive view of the individuals they treat to better address their problems within the healthcare context. Doing so enhances the quality of care provided to patients. Thanks to new technologies as Virtual Reality, many studies are prone to use this tool to improve the knowledge of current nurses. However, these studies are focusing on theory-practical skills instead of human psychosocial skills such as empathy.

Objective: the present study aims to determine the current satisfaction level of people with hearing impairment as well as analysing the Virtual Reality's impact in factors such as Health Personnel empathy and knowledge.

Materials and Methods: It encompass a biphasic study. An Observational study through a survey to explore the communicative issues people with hearing impairment have in health assistance. A Clinical Trial through two learning groups, traditional and VR, to measure which one is more effective in order to train actual and future professionals. Both phases are still ongoing.

Conclusion: The main result expected is a favourable impact among the Virtual Reality, leading to a technological multidisciplinary nursing progress in the aspect of education.

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ID 766 - Towards Inclusive Open Science Practices in Indonesia: Addressing Diversity and Equity

Ria Ariani, Technische Universität Berlin

Keywords: Open Science, Ethical Considerations, Inclusivity, Diversity, Equity

Open science is often celebrated as a premise to more accountable and actionable initiative in the global research practice. It advocates democratizing knowledge production and dissemination. However, ensuring inclusivity within open science practices remains a challenge, particularly in a multicultural country like Indonesia. Socio-economic disparities, linguistic barriers, and unequal access to scientific infrastructure may hinder equitable participation in research and data sharing. Furthermore, hegemonic epistemologies frequently gain prominence in global open science initiatives which marginalize indigenous knowledge systems and under-representing scholars from the Global South. This study employs a literature analysis approach to examine ethical challenges in open science, with a focus on cultural sensitivities, indig-

enous knowledge protection, and participatory research methodologies. By critically assessing existing policies, frameworks, and community-driven initiatives, the study identifies key barriers to inclusivity and proposes strategies for fostering a more equitable scientific ecosystem. By addressing the complexities of Indonesia's ethnic diversity, this study contributes to the discourse on decolonizing open science and offers a model for implementing more equitable research practices. Ultimately, fostering inclusivity in open science is essential for advancing knowledge co-production, promoting cross-cultural collaboration, and ensuring that scientific advancements benefit everyone. The findings provide insights for policymakers, researchers, and institutions in Indonesia to promote a more inclusive and just environment in open science practices.