African Co-Design: Past, Present, and Emerging

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ABSTRACT

The meaningful application of Participatory Design (PD) in African communities requires a thoughtful reevaluation of its approaches. In efforts to adapt it to this different context, PD researchers and practitioners face several challenges, including language barriers and the need for a deeper understanding of communities. To encourage interdisciplinary discussions on co-designing in Africa, this panel will explore past, present and emerging practices of participatory design. The primary goals of the panel are twofold (i) to deepen the understanding of co-design practices, successes, and challenges in Africa by reflecting upon the past and current practices and (ii) to discuss the impact of summer schools in Africa in the hopes of envisioning potential futures. The panel will discuss co-design development in different African countries, the insights from the African co-design academy, and the characteristics, barriers, facilitators, and future directions for African co-design.

CCS CONCEPTS

• **Human-centered computing** → **Empirical studies in HCI**.

KEYWORDS

Co-design, African Co-design, participatory design, summer school, Africa

1 BACKGROUND AND MOTIVATION

Participatory Design (PD) is a collaborative design approach in which end-users are involved throughout the design process. The approach originated in Scandinavia in the 70s and 80s [8] and has since gained widespread acceptance. Participatory Design was built on the socio-cultural background of Nordic countries, and thus it often needs to be rethought and reconceptualised before it can be meaningfully applied to a community from another context [2]. The shift from the Nordic or Western perspective of PD has been the subject of discussion in the African community [1, 5], and while some work has been done to encompass these changes [3, 6, 10], researchers frequently face difficulties with language and linguistics that are sometimes lost in translation [4, 11]. African researchers have been working closely with community members, to ensure culturally sensitive and respectful collaboration, drawing on the members' deep knowledge of their community. Other challenges often mentioned are participants' lack of ICT knowledge and the researchers' and developers' lack of conceptual understanding [12].

African countries have a long-standing tradition of participatory decision-making - in the spirit of *ubuntu*[1], where community members usually gather to discuss their opinions and concerns [12]. Faithful to this tradition, the African HCI community has developed methodologies and strategies to work with different communities, that are adapt co-design to geography, referring to the different sites' timings, and how PD should deal with gender norms and community hierarchies [9]. Many authors [3, 4, 12] argue the importance of changing roles in PD, reducing the influence of researchers in the final design and offering participants the possibility to have a say in technology design. In terms of research, [11] discusses integrating HCI into higher education curricula and encouraging African students to critique system design.

Incorporating further Participatory Design into African communities requires a careful, culturally sensitive approach. Community involvement should be embraced in PD methodologies, such as community-based co-design and participatory action research [4], and local knowledge and expertise should be prioritised [5], which will emphasise community participants' contributions as co-researchers and co-designers, and, consequently, recognise their authorship and the value of sharing indigenous knowledge with a broader audience. Researchers should conduct long-term collaborative research to empower communities and build bonds with them through PD [4]. Moreover, there is also a need to raise awareness through seminars [11], provide more HCI education, and encourage more conferences and academic publications from African authors [5].

This panel will bring together researchers, engineers, designers, and community members to discuss African co-design. Our discussion will be oriented by three questions: (i) What is the current state of co-design in Africa? (ii) How can the HCI community further

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[1]Ubuntu is a compilation of principles and customs regarded by individuals of African descent as defining authentic human beings, where 'being' is part of a larger and more significant relational, communal, societal, environmental and spiritual world

Table 1: Scheduled Activities.

Activities	Duration
Introductions	00:15
Assessing co-design development in different African countries	00:30
Summarise the discussions from African co-design academy	00:30
Characteristics, barriers, facilitators, and future directions for African co-design	00:30
Closing and thanks	00:15

develop co-design in Africa? and (iii) What is the role of AfriCHI and AfriCHI summer schools in developing co-design practices? The panel is preceded by a two-day summer school for master and PhD students, the African Co-design Academy, where the panel organisers led lectures, exercises, and discussions on planning and conducting Co-design in Africa.

2 AUDIENCE

Researchers, designers, engineers, or community members interested in co-design in Africa or by Africans.

3 STRUCTURE AND FORMAT

The panel will last up to 2 hours. It will begin with a 15-minute introduction of the session and panellists to the audience. This will be followed by a trifold goal discussion with the following aims (i) assess co-design development in different African countries, (ii) summarise the discussions from African co-design academy, and (iii) reflect upon characteristics, barriers, facilitators, and future directions for African co-design. Each of these topics will take 30 minutes where panellists will reply to the moderator's questions, and raise questions of their own. The final 15 minutes will be used of closing thoughts by panellists and audience.

Assessing co-design development in different African countries. The moderator will introduce the topic of the panel and invite panellists to present their perspectives, summarising their experiences, and highlighting insights, challenges, and practices. Audience members will be encouraged to share their own experiences and to inquire panellists.

Summary of discussions from African co-design academy. In this segment, panellists will be encouraged to share reflections from the Co-design Academy, as well as their own experiences from past summer schools. The moderator will encourage members of the audience to share their own experiences, particularly from those that participated in the Academy or past activities of similar nature (e.g., AfriCHI 2018 summer school [7]).

Characteristics, barriers, facilitators, and future directions for African co-design. The panel will close with a discussion of what lies ahead for African co-design. Following short reflections and provocations from panellists, the moderator will encourage the audience to reflect and share their predictions and wishes for future African Co-Design.

4 MODERATOR AND PANELLISTS

Note: The current arrangement of moderator and panellist is temporary and is likely to be adjusted during the Co-Design Academy. Our goal is to ensure different sensibilities and approaches to African Co-design are represented and have space to voice their perspective at the conference.

Moderator: Nervo Verdezoto Dias (PhD) is a Lecturer in Human-Computer Interaction with expertise in ethnographically informed design, user-centred and participatory design, physical computing and in the design and evaluation of socio-technical systems with particular focus on Digital Health and Sustainability.

Panellist: Melissa Densmore (PhD) is as Associate Professor in Computer Science at the University of Cape Town, where she leads the HCI Lab and the Hasso Plattner Institute Research School at UCT in ICT4D. Her research looks at community-based digital innovation for maternal and child health and community wireless networks.

Panellist: Shaimaa Lazem (PhD) is an Associate Research Professor at the City for Scientific Research and Technological Applications in Alexandria, Egypt. Her interests include human-centered innovation and responsible design of AI systems. She is a Leaders-in-Innovation fellow with the Royal Academy of Engineering in London since 2018, and the co-founder of the ArabHCI Community, an initiative that aims at promoting HCI research and education in Arab countries. She is currently designing an HCI curriculum for AI start-ups in Africa, funded by the Google Award for Inclusion Research and Google AI.

Panellist: Heike Winschiers-Theophilus (PhD) is a Professor in the Faculty of Computing and Informatics at the Namibia University of Science and Technology. She has lived and lectured in Namibia since 1994. Her research focuses on co-designing technologies with indigenous and marginalized communities. In 2014 she co-chaired the 13th Participatory Design Conference in Windhoek, Namibia, hosted in Africa for the first time.

Panellist: Alastair van Heerden (PhD) is an Associate Professor at the University Witwatersrand and a Research Director at the Human Sciences Research Council. His research combines technology for development with public health, particularly how to harness inexpensive mobile technology to both address barriers and provide solutions to the challenges faced by low resource communities around the world. His previous work includes practical implementation of ICT4D projects in the context of high poverty and HIV in South Africa.

Panellist: Thulani Ngubane (community member) is the Head of Community Programs at the Center for Community-Based Research, Human Sciences Research Council. He has lived and worked in the same community for the past 19 years with research interests in Social, Bio-medical Research and HIV Prevention. He has helpd multiple positions including Research Project Director, Research Coordinator, Community Programs and Stakeholders Manager and Community Liaison Officer.

Panellist: William Tucker (PhD) is a Computer Scientist known for work with human and social-centred information and communication technologies (ICT); built for, with and by vulnerable and marginalised communities. He has mostly worked on two long-term community-based projects, Zenzeleni Networks and SignSupport,

that address rural wireless community networks and assistive technology for Deaf people, respectively. He also does ICT work in peri-urban and rural agriculture; cultural heritage preservation and education with San communities; and multi-lingual data collection. Connective tissue amongst these multidisciplinary projects is the intersection of socio-technical issues of culture, language, co-design, co-production, ethics and social impact. His interest in this project is the confluence of electrical and social power, as both are required for resilient and sustainable ICT interventions.

The panel will also have contributions from student participants of the African Co-design Academy, who will have a chance to summarise results of the summer school, and point to the potential and barriers they see in their community to engaging in co-design in Africa.

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