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REDEFINING USER-CENTRED DESIGN FOR AFRICAN CONTEXT: UBUNTU AS A DESIGN PHILOSOPHY

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ABSTRACT
The User-Centred Design (UCD) approach has revolutionized product development globally but often lacks sensitivity to African cultural contexts. This paper introduces Ubuntu-Centred Design (UCD), a framework inspired by the African philosophy of Ubuntu, which emphasizes empathy, collaboration, and inclusivity. By incorporating Ubuntu principles into the design process, we aim to create technology that better aligns with the cultural, social, and technological needs of African communities. Qualitative research approach was used, where two set of Focus Group Discussions (FGD) were conducted with 10 participants each. The participants were randomly selected from final year undergraduate students of software engineering and ICT Department. Each session followed a semi-structured format guided by open-ended questions to facilitate rich discussions. The discussion was recorded, transcribed and analyzed using thematic analysis. The result showed the importance of designing multifunctional and user-centric apps that not only address users' practical needs but also foster emotional well-being and community engagement. By integrating features that prioritize interactivity, collaboration, and cultural relevance, app developers can align their designs with Ubuntu's core values of interconnectedness and shared humanity.

KEYWORDS: *Ubuntu Philosophy, User-Centred Design, HCI in Africa, Interconnectedness*

INTRODUCTION

The African design landscape presents both challenges and opportunities for sustainable development and innovation. Education and social sustainability are key areas for mutual learning and collaboration (Nilsson *et al*., 2022). The rapid growth of smartphones in sub-Saharan Africa offers potential for digital mobile maps to transform access to information and services, despite unique cultural and infrastructural challenges (Sosik and Arjan, 2016). Higher education in Africa faces complex issues, including language diversity, access, finance, and governance, but has the potential to drive social and economic progress (Collins, 2013). However, the dominance of Western design paradigms in postcolonial Africa is problematic. There is a need to decolonize African design by appreciating sociocultural specificities and promoting a

stronger African design identity (Ambole, 2020). These papers collectively highlight the importance of contextualizing design approaches to address Africa's unique challenges and leverage its opportunities for sustainable development.

Ubuntu philosophy, rooted in African tradition, emphasizes the interconnectedness of human beings and the importance of community. It is encapsulated in the maxim "A person is a person through other persons" (Gianan, 2011). This philosophy has ethical implications, promoting collectivism, teamwork, and consensus-based decision-making in corporate strategies (James *et al*., 2013). Ubuntu's philosophical presuppositions are based on the concepts of "force" among the Bantu and "life" in traditional Africa, with potential theological implications for reconciliation (Ntamushobora, 2012). As a communal philosophy, Ubuntu offers an alternative to individualistic management theories that prioritize owner wealth maximization. It aligns with other traditional philosophical systems, such as Confucianism and Platonic-Aristotelianism, in recognizing the communal nature of human beings (Lutz, 2008). Ubuntu's principles can contribute to the development of ethical global management practices that reflect our shared human nature and promote community-based corporate social responsibility (James *et al*., 2013; Lutz, 2008).

Incorporating Ubuntu principles in design processes can lead to more inclusive and socially responsible outcomes, particularly in African contexts (Winschiers-Theophilus *et al*., 2010). Integrating Ubuntu with user-centred design approaches can enhance community participation, foster empathy, and promote human flourishing in design practices (Winschiers-Theophilus *et al*., 2010). The philosophy of Ubuntu, articulated as "I am because we are," highlights communal values and interconnectedness. This concept aligns closely with the collaborative and participatory ideals of User-Centred Design (UCD). This study investigates how Ubuntu can enrich Human Computer Interaction practices in African contexts, emphasizing empathy, collaboration, and inclusivity.

METHODS

Qualitative research approach was used, where two set of Focus Group Discussions (FGD) were conducted with 10 participants each. The participants were randomly selected from final year undergraduate students of software engineering and ICT Department. These students have industry experience in software development as they had gone for their 6 months industry training. There was no incentive or grade attached. They voluntarily participated in the research. The inclusion criteria were:

1. Those that had experience in app usage and design living in Africa with Nigeria as the case study. The participants who formed our case study were Nigerians located in Agbor Delta state.
2. Undergraduate students that had gone for industrial training which gives them industry experience
3. Undergraduate students in their final year or penultimate year

Each session followed a semi-structured format guided by open-ended questions to facilitate rich discussions. The sessions lasted for 30 minutes and the questions are shown in Table 1

Table 1: Focus Group Discussion Questions

S/No	Questions
	What is your favourite app and why do you like it?
Empathy	
1	How can apps better reflect your daily challenges and needs
2	What types of features would make an app feel more personal or human?
Collaboration	
1	Have you used an app to work with others? What worked well and what didn't?
2	How important is it to share tasks or progress with others in your community?
Inclusivity	
1	Would you prefer apps designed specifically for your region or a global audience? Why?
2	How important is it for the app to include your language or cultural symbols?

Prior to the discussions, participants were briefed on the study objectives and signed informed consent forms. Participants were assured of their rights, including the voluntary nature of participation, confidentiality, and anonymity. To ensure privacy, pseudonyms were assigned, and identifying information was excluded from the transcripts. The discussion was recorded, transcribed and analyzed using thematic analysis.

RESULTS

The result obtained from the thematic analysis is shown in Table 2. Themes were identified and codes formed.

Table 2: Thematic Analysis of the Focus Group Discussion

S/No	Questions	Themes	Code
	What is your favourite app and why do you like it?	• Chrome because it gives **prebuilt development** options • Instagram because it has titok and whatsapp aspect. You can **watch video** and **message on it** • Whatsapp because of its **encryption** • X because of **AI enablement** • Opay because it is **fast and easy to use.** It helps with **free charges** • Titok because it allows **web 3** and **entertainment** • X because of the **interaction between users** • Instagram because of **voice note features** • Flipper clip, a framework for animation. It has provision for **collaboration with other animators** and its **open source** • Youtube because of **entertainment and education** • Whatsapp because of **ease of use and efficient communication** • Whatsapp **because of ease of use, information and communication** • None, I only use apps based on needs and wants • Whatsapp because of **ease of communication** • Pampay because of the **good framework and friendly user interface** • Tiktok because of **updates and content** • Pycharm because of its **integrated development in coding** • Whatsapp because it's a **social application** and the interface is **easy to use**	Multifunctional and user centric App features
Empathy			
1	How can apps better reflect your daily challenges and needs	• It helps to **enlighten, entertainment and relieve depression** • It helps to **entertain me** • Apps like chrome can enable **search or research** • Body building apps or gym apps can help in body building	User entertainment and knowledge support
2	What types of features would make an app feel more personal or human?	• AI in whatsapp can help you for **discussion or engagement** • **Interactivity** like chatgpt that communicates with you and engages you freely. • **Bright colours** make an app more **appealing** • The **front end** • **User interface**	Enhanced user experience

Collaboration			
1	Have you used an app to work with others? What worked well and what didn't?	• I used whatsapp and it was easier because of **easy access and the speed of sending messages and getting reply.** Video chatting also helps in coding collaboration • Whatsapp and telegram was used. It was **smooth and easy to use.** The only challenge was internet connectivity • Slack was easy just **connectivity** issue which results in slow response • **Image restriction on some apps**	Communication efficiency and platform usability
2	How important is it to share tasks or progress with others in your community?	• It gives **room for improvement** • For a **faster work** • It **boosts my moral** in showing my progress and it can **bring feedback** • **Division of labour** which **eases tasks**	Productivity and motivation enhancement through use
Inclusivity			
1	Would you prefer apps designed specifically for your region or a global audience? Why?	• I would prefer **a global reach** • I prefer **global** so I can communicate with others in other region • **Global** because I want to reach others that may be disabled	Global connectivity and inclusivity
2	How important is it for the app to include your language or cultural symbols?	• Very important • Partially important if there is a **language barrier** • Very important to show our **techniques** • I don't think it's important because of **conflict in understanding** it in other regions. So a general language may be used • Its important because it incorporates people to understand especially the local people. It's **inclusively** brings in the local indigenes	Language and communication in global context

The thematic codes obtained from Table 2 are Multifunctional and user centric App features, User entertainment and knowledge support, Enhanced user experience, Communication efficiency and platform usability, Productivity and motivation enhancement through use, Global connectivity and inclusivity, and Language and communication in global context.

DISCUSSION

The findings offer valuable insights into user preferences and expectations for app design, revealing a spectrum of priorities that span functionality, inclusivity, and overall user experience. Users are drawn to multifunctional, user-centric platforms that seamlessly integrate diverse features. For example, the blend of TikTok-style videos, WhatsApp-like messaging, and voice notes on Instagram exemplifies the demand for versatile platforms, while specialized tools like Chrome's development suite and niche apps such as PyCharm and Flipper Clip underscore the need for functionality tailored to specific tasks. This aligns with recent studies highlighting the importance of user-centric design in app development, emphasizing functionality, inclusivity, and user experience. Durgekar *et al*. (2024) stressed the need for considering factors like context, user behaviour, and emotions in mobile app design to enhance usability and satisfaction. Octavianti *et al*. (2025) demonstrated the effectiveness of User-Centred Design (UCD) in improving app usability and user satisfaction, as evidenced by significant increases in System Usability Scale scores. Arony *et al*. (2023) identified key inclusiveness categories in user feedback, including fairness, technology, privacy, and usability, emphasizing the importance of addressing diverse user needs. Sagar et al. (2023) outlined the user-centric design process, emphasizing thorough user research and the creation of user personas to guide product development. These studies collectively underscore the value of prioritizing user preferences and expectations in creating successful, inclusive, and engaging digital products.

It was also observed that apps are not merely tools; they serve as essential sources of entertainment, education, and even stress relief. YouTube's dual role in educating and entertaining users, along with niche fitness apps addressing specific health needs, highlights this trend. Mobile applications have emerged as valuable tools for stress management and mental health support. These apps offer various evidence-based strategies, with mindfulness, meditation, and diaphragmatic breathing being among the most common (Coulon *et al*., 2016). They serve multiple purposes, including symptom relief, mental health education, and relaxation techniques (Radović *et al*., 2016; Anagnostou and Drigas, 2022). While many apps are available, their effectiveness and transparency vary, with only a fraction providing both evidence-based content and acceptable functionality (Coulon *et al*., 2016). Psychological factors such as perceived stress, motivation for self-care, and cognitive engagement influence the usage of stress relief applications (Kamaruzaman *et al*., 2024). However, concerns exist regarding the lack of information on app effectiveness and privacy measures (Radović *et al*., 2016). As these applications become increasingly popular alternatives for stress management, understanding their potential benefits and limitations is crucial for both users and

healthcare providers (Radović *et al*., 2016; Kamaruzaman *et al*., 2024).

Equally important is the enhanced user experience achieved through interactivity and aesthetic appeal. AI-enabled features, such as ChatGPT-like communication, combined with visually engaging, intuitive interfaces, contribute significantly to accessibility and personal engagement. AI-driven personalization in user interfaces significantly enhances user experience (UX) by adapting to individual preferences and behaviours (Ünlü, 2024). This personalization extends to UX writing, where AI tools like ChatGPT can improve efficiency, consistency, and content quality (Lentez and Mager, 2023). Users report positive experiences with ChatGPT, valuing its pragmatic attributes such as providing useful information and easing tasks, as well as hedonic aspects like entertainment and creative interactions (Skjuve *et al*., 2023). The integration of AI in UX/UI design enables more engaging, inclusive, and interactive experiences, though it also raises ethical considerations regarding data privacy and algorithmic transparency (Lessa, 2024). While AI-driven personalization offers numerous benefits, including improved engagement and efficiency, designers must navigate challenges such as privacy concerns and the need for human oversight to fully leverage AI's potential in creating intuitive and user-friendly interfaces (Ünlü, 2024; Lessa, 2024).

Collaboration also plays a crucial role. Users value communication efficiency and platform usability, as seen in the popularity of messaging apps like WhatsApp and Telegram, despite challenges like connectivity issues or content restrictions. Collaboration tools play a crucial role in modern work environments, with users valuing communication efficiency and platform usability. Research shows that Unified Communications and Collaboration (UC&C) services can increase flexibility, interoperability, and productivity in business processes (Alias *et al*., 2017). Key user values and UX aspects, such as trust, perspicuity, and efficiency, are important for the successful adoption of collaboration tools in organizations (Meiners *et al*., 2023). Mobile apps like Slack, Microsoft Teams, and Basecamp have the potential to enhance communication and collaboration in industries like construction (Yankah *et al*., 2023). In e-learning contexts, collaborative platforms extend the functionality of learning management systems, with factors like perceived efficiency, perspicuity, dependability, stimulation, and novelty significantly impacting the perceived attractiveness of these tools (Sternad Zabukovšek *et al*., 2022). Understanding user expectations and values is crucial for organizations to select and implement effective collaboration tools across various domains.

The ability to share tasks, track progress, and receive real-time feedback (offered by platforms like Slack) fosters both productivity and motivation. Global connectivity and inclusivity further emerge as important considerations. While most users appreciate apps designed for cross-regional communication and accessibility (especially for those with disabilities), there is also a call for regional customization.

CONCLUSION

This study highlights how Ubuntu can enrich Human-Computer Interaction (HCI) practices in African contexts by

emphasizing empathy, collaboration, and inclusivity. The findings reveal the importance of designing multifunctional and user-centric apps that not only address users' practical needs but also foster emotional well-being and community engagement. By integrating features that prioritize interactivity, collaboration, and cultural relevance, app developers can align their designs with Ubuntu's core values of interconnectedness and shared humanity. Also, insights from the study underscores the importance of balancing functionality, security, personalization, and inclusivity in app development. Addressing these dimensions holistically can lead to products that not only meet diverse user needs but also create more secure, engaging, and universally accessible digital environments. The emphasis on global inclusivity balanced with localized customization (such as language integration and culturally reflective elements) underscores the significance of creating applications that resonate with both regional and global audiences. By adopting Ubuntu as a design philosophy, developers can cultivate HCI practices that are not only functional but also deeply empathetic and inclusive, fostering a digital experience that reflects the interconnected nature of African communities.

RECOMMENDATION

It is recommended that developers prioritize multifunctional apps that blend everyday utilities with domain-specific features, emphasizing security and efficiency, developers focus on apps that entertain, educate, and support mental health as they are likely to resonate more deeply with users, Investing in AI for personalization and creating visually appealing, intuitive interfaces is critical for a compelling user experience, ensuring reliable performance in low-connectivity environments and mitigating restrictive functionalities can enhance collaborative efficiency, Collaborative platforms should integrate task-sharing and feedback mechanisms (potentially even gamifying progress) to boost engagement and motivation, When designing for a global audience, developers must consider localized settings such as multilingual support and culturally relevant design elements to promote inclusivity, and Offering users the option to select their preferred language and incorporating culturally neutral symbols can help balance inclusivity with global usability.

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