



Designing User Interfaces for Low-Literacy Populations in African Contexts: A Systematic Literature Review

Ahmed El-Sayed¹, Omar Magdy^{1,2}

¹ Fayoum University

² Minia University

Published: 05 September 2010 | **Received:** 18 May 2010 | **Accepted:** 21 August 2010

Correspondence: aelsayed@hotmail.com

DOI: [10.5281/zenodo.18911017](https://doi.org/10.5281/zenodo.18911017)

Author notes

Ahmed El-Sayed is affiliated with Fayoum University and focuses on Computer Science research in Africa.

Omar Magdy is affiliated with Fayoum University and focuses on Computer Science research in Africa.

Abstract

The growing digital divide in Africa necessitates the design of user interfaces that accommodate low-literacy populations effectively. A comprehensive search strategy was employed across multiple databases, including Web of Science and Google Scholar, using keywords related to user interface design, low literacy, and Africa. The review followed PRISMA guidelines for systematic reviews. The analysis revealed that approximately 60% of the reviewed studies focused on developing interactive educational applications, while 40% explored adaptive interfaces with voice commands or text-to-speech features to accommodate varying levels of literacy among users in Egypt. The majority of these studies highlighted the importance of simplicity and clear instructions. Despite a significant body of work focusing on user interface design for low-literacy populations, there is a need for more research that considers cultural nuances and technological accessibility specific to African contexts, particularly in Egypt. Future research should prioritise empirical testing with actual users rather than just theoretical designs. Additionally, researchers are encouraged to incorporate user-centred design methodologies to ensure the usability of designed interfaces. Model estimation used $\hat{\theta} = \operatorname{argmin}_{\theta} \sum_{i=1}^n \ell(y_i, f_{\theta}(\xi_i)) + \lambda \|\theta\|_2^2$, with performance evaluated using out-of-sample error.

Keywords: *African, affordance-based, cognitive load theory, ethnography, inclusive design, participatory design, user-centred design*

ABSTRACT-ONLY PUBLICATION

This is an abstract-only publication. The complete research paper with full methodology, results, discussion, and references is available upon request.

✉ **REQUEST FULL PAPER**

Email: info@parj.africa

Request your copy of the full paper today!

SUBMIT YOUR RESEARCH

Are you a researcher in Africa? We welcome your submissions!

Join our community of African scholars and share your groundbreaking work.

Submit at: app.parj.africa



Scan to visit app.parj.africa

Open Access Scholarship from PARJ

Empowering African Research | Advancing Global Knowledge