Designing Accessible User Interfaces for Low-Literacy Populations in Rural Cape Verde

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Abstract

User interfaces for digital devices are often designed assuming a high level of literacy among users. In rural Cape Verdean communities, however, this assumption is frequently violated due to varying levels of education and language proficiency. A mixed-methods approach was employed, involving workshops with local stakeholders to understand the specific needs and challenges faced by users. User testing sessions were conducted using prototypes designed based on insights gathered from qualitative research. In user feedback analysis, a clear theme emerged regarding the need for simple graphical elements and straightforward navigation paths to facilitate comprehension among non-literate individuals (87% of respondents expressed preference for simpler designs). The study concluded that designing with simplicity in mind is crucial for creating accessible digital interfaces in rural settings where literacy levels are low. Based on the findings, recommendations were made to incorporate user-centred design principles and iterative prototyping processes into future interface development projects. User Interfaces, Low Literacy, Rural Cape Verde, Accessible Design Model estimation used $\hat{\{\theta\}} = argmin\{\theta\}\, sumiell(yi, f\theta(\xi)) + \lambda lVert\theta rVert 2^2$, with performance evaluated using out-of-sample error.

Keywords: *Cape Verdean, Multilingualism, Universal Design, Digital Divide, User-Centred Design, Accessible Computing, Indigenous Knowledge Systems*

ABSTRACT-ONLY PUBLICATION

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

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