

# Research Proposal

## Improving Human-Computer Interaction for Rural and Low-Literacy Populations

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### 1. Introduction

Human-Computer Interaction (HCI) helps people use digital technology. However, people in rural areas with low literacy often find it hard to use these technologies. This research will create and test HCI designs that better fit the needs of these groups, helping them use technology more easily.

### 2. Research Problem

Most current HCI designs assume users can read well and know how to use technology. This is not true for many rural and low-literacy users, causing them to struggle with digital tools and miss out on benefits. We need new ways to design interfaces that work well for these users and their environments.

### 3. Research Objectives

- Understand the challenges rural and low-literacy users face when using technology.
- Develop design ideas that consider their literacy and cultural background.
- Build and test new types of interfaces, such as voice commands or simple icons, that are easy to use.
- Measure how these new designs improve access, satisfaction, and use of technology.

### 4. Literature Review Overview

This study will look at existing research on making technology easier for low-literacy users, especially in rural areas. It will find what has worked and where improvements are needed.

### 5. Methodology

- **Fieldwork:** Visit rural communities to talk with users and learn about their needs.
- **Co-design:** Work with users to create design ideas that fit their culture and language.
- **Prototype:** Build simple, easy-to-use interfaces using speech, touch, or gestures.
- **Testing:** Check how well these designs work by observing users and collecting feedback.
- **Improvement:** Make changes based on user feedback and test again.

### 6. Expected Contributions

- A clear guide for designing technology that works for low-literacy rural users.
- Tested interface designs that are easy and enjoyable to use.
- Understanding of how social and technical factors affect technology use in rural areas.
- Practical advice for designers and policymakers to help include these users.

### 7. Research Timeline

- Year 1: Review literature and start field visits.
- Year 2: Design sessions and build prototypes.
- Year 3: Test prototypes and analyze results.
- Year 4: Final testing, write thesis, and share findings.

### 8. Resources and Ethics

The research will work closely with local communities, respecting their privacy and culture. It will use current technology tools and seek funds for building prototypes and travel.

### 9. Conclusion

Improving HCI for rural and low-literacy users is important to make technology fair and useful for everyone. This research will create easy-to-use designs that help these users benefit from digital technology.