



The Mobile Utility Gap and Literacy Challenges
in Oral-Language Communities:
SMS use by Berber Women in Morocco

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Pressing Issues

- Conventional wisdom assumes:
 - women with mobile phones can text
 - illiterate women are numerate
 - mobiles obscure gender
- This is not necessarily the case.
 - Many women are only able to use expensive voice services.
 - Functions that rely on counting or number sequences are confusing.
 - Cultural restrictions on communication between men and women extend to mobiles.
- These issues are bigger than a community of Berber women.

Approximately 500 million women are illiterate.



The Population: Women and Work

- Berber communities
 - Tribal
 - Traditional
 - Muslim
 - Conservative
 - Rural
 - Arid
 - Poor
- Women lack formal education.
- Women's livelihoods are tied to the Argan tree.



UNESCO has designated Morocco's Argan forests as a Biosphere Reserve.

The Technology

- Simple, broken, secondhand, counterfeit phones
- Few smart phones
- Relatively broad network coverage and available power

The Goal

- Expand the use of available mobile phones for personal and instrumental communication
- Explore the challenges of moving from oral communication (speaking *and* calling) to texting in a non-text based community
- Avoid a formal educational approach because of shame and fear



A Complex Language Environment

- 2 spoken dialects:
 - Darija: an amalgamation of Arabic, French and Spanish words and syntax with no standard written form
 - Tachelhit: one of numerous Berber dialects
- 2 official written and spoken languages:
 - Modern Standard Arabic and French
- 3 alphabets:
 - Arabic script (written right-to-left)
 - Latin script (written left-to-right)
 - Tifinagh script (Glyph-based, not widely used)
- 2 numbering systems:
 - Arabic: 1,2,3,4...
 - Arabic-Indic: ١,٢,٣,٤...



The Texting Utility Gap

- Due to the complex literacy and language environment, women's mobile use is basic.
- They are unable to benefit from many phone features.
 - “My phone only speaks French. I don't speak French.”*
 - No/low use of voicemail, SMS, mobile radio, phonebooks or mobile internet*
- They face socio-cultural and psycho-dynamic deterrents to learning.
 - “I can't learn.” “I'm ignorant.” “It's too late to learn.”*
- Illiterate women are paying a tech tax because they cannot text.
 - Some women spend 40% of their monthly salary on calls.*
- They are foregoing service benefits:
 - *Unable to take advantage of mobile bonuses*
 - *Cannot access development initiatives*
 - *Missing out on training opportunities*



Coping Strategies: High Visual Literacy

Many users identify words and numbers as *visual packets* of information.

- They rely on pattern recognition to identify phone numbers.
- They memorize keypad sequences.
- They use paper to assist in phone use.
- They identify contacts with icons, names & numbers.
- They rely on proximate literates & scribes.



Personal Communication: Mobile Support for Literacy in the Coop

- Informal education
- Situated learning
- Adult women get to choose the literacy they want
- Highly motivated to learn Latin alphabet
- The mobile provides the alphabet at their fingertips
- Multi-media learning: mobiles, chalkboard, keypad drawings





1 ZAINIB	2 abc	3 def
4 ghi	5 jkl	6 mno
7 pqrs	8 tuv	9 wxyz

53dia ^{↑ ↑} paxa a = b
 pipes x = ĉ = kh
 waxa ŵ = ch
 min_a
 OU
 1 2 K hadija K i
 9 p a
 5 3 4 F a k i a
 d b 3 i c h
 ↑
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Mixed Messages and Creole Texts

Salam, sava?

SMS messages incorporate French, Berber, Arabic and other words. Numbers are a shorthand to represent letters and sounds:

➤ **Salam 7**ta nki **t3**zat dari.

Inrayi **omarg** nem. nshoofk **9**rib
inshalah. **5**adija

7=is similar to the Arabic letter 'ha'= ح

3=the reversed form of the letter 'A'l' = ع

5=represents the sound for the letter 'kh'= خ

➤ Hawaryo lisli motchis krasis



Instrumental Communication: The Fog Project

- Provide literacy training to women alongside mobile reporting on home water system
- Fogwater information network must accommodate mixed literacy levels, mixed genders, multiple devices
- Transmit data using common messages and symbols



Beyond Berber Villages

- Many mobile services and benefits are not reaching intended beneficiaries in oral-language communities where users have simple ICTs.
- Many of those least capable of accessing mobile services due to language constraints are poor women – who are most in need of the educational, health and communication benefits of mobiles.
- Mobile learning initiatives for low-literate, oral language communities will benefit from a nuanced understanding of the “rich pluralism of regional traditions, languages, dialects and cultures.”

* Morley & Robins. 19





Thank You

- UNESCO
- ATLAS Institute, University of Colorado
- American Institute for Maghrib Studies
- Dar Si-Hmad Association

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