



## The promise and challenges of using mobile phones for adult literacy training: Data from one Indian state

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### ABSTRACT

Worldwide, 800 million adults are illiterate; a vast majority of them reside in India. A problem on this scale requires solutions that are scalable and cost-effective. Due to their fast growth, portability, and technical capabilities, mobile phones may play a role in devising such a solution. Yet illiteracy itself may be one of the central barriers that could prevent the effective use of these phones. This study based on data from a 2010 survey of 409 illiterate men and women from semi-urban locations in one Indian state seeks to understand the potential of mobile phones to address adult illiteracy. The results show a mixed promise for using mobile phones to alleviate adult illiteracy.

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### 1. Introduction

Worldwide, 800 million adults are illiterate<sup>1</sup> (UNESCO Institute of Statistics [UIS], 2011). Given its size, India is home to a significant portion of these adults. A problem on this scale requires solutions that are scalable and cost-effective. Due to their fast growth, portability, and technical capabilities, mobile phones may play a role in devising such a solution. Yet illiteracy itself may be one of the central barriers that could prevent the effective use of these phones in this situation; Illiteracy is often associated with poverty, which coupled with the inability to read may limit an individual's access and ability to benefit from such technologies. Researchers in fact note that even the broader potential of mobile phones for other developmental goals may remain untapped if a majority of the mobile phone users in developing countries are illiterate (e.g., Chipchase, 2005; Medhi et al., 2009). So what potential is there to use mobile phones to address adult illiteracy in the current scenario? To answer this question we must first understand the day-to-day patterns of ownership and use (or lack thereof) of mobile phones among illiterate adults. In this paper I present data from a 2010 survey of 409 illiterate men and women

from semi-urban locations in one Indian state. The study aims to provide a perspective on how the mobile phone has spread and is being used among this population and the literacy needs expressed by this population. The study also aims to identify if a specific segment of this adult illiterate sample may be more suited than another for an initial, targeted, literacy intervention.

### 2. Review of the existing literature and relevant background

The paper is structured as follows. First, I briefly describe India's adult illiteracy challenge and explain why it is important to address it for national development. I then discuss the spread of mobile phone technology in India, which makes the case for relying on this medium to launch and scale up a literacy intervention; I also review the existing literature on the use of technology, especially the use of mobile technology for education. With this background, I turn to describing the survey, sampling and data collection. I conclude by presenting the results from this survey and discussing their implications.

#### 2.1. Adult illiteracy in India and the need to focus on this issue

According to the 2010 census, 270 million Indians, or 26% of the population age 7 and above, cannot read or write in any language. This problem also has a distinct gender dimension. According to the 2011 data, 82% of men are literate compared to only 65% of women. This male–female literacy gap in 2011 is comparable to male–female literacy gap in 1951 and has remained unchanged for almost 60 years. If we look at the numbers separately for rural and urban India, the scenario is grimmer for the rural areas. In 2011, 30% of rural Indians were illiterate compared to about 15% of their urban counterparts (Census of India, 2011).

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<sup>1</sup> This paper is limited to the “skill-based” notion of literacy. In the literature, what constitutes literacy is itself contested. UNESCO EFA Global Monitoring Report 2006, chapter 6 titled, “Understandings of literacy” provides an overview of these divergent definitions of literacy. The report notes at least four discrete understandings of literacy: “literacy as an autonomous set of skills; literacy as applied, practised and situated; literacy as a learning process; literacy as text” (p. 148). The contribution of “New Literacy Studies,” is noteworthy in this regard. This work argues that literacy is a “social practice, not simply a technical and neutral skill” (Street, 2003, 77).

In India compulsory schooling is available to children in the age group of 6–14 years, and the recent Right to Education Bill has reaffirmed this commitment. This makes the illiterate individuals age 15 and above of special interest since they may have significantly fewer opportunities to access literacy training through regular education channels. The 2010 national census does not yet provide literacy figures by age groups; however, such information is available from other international sources. According to the UIS data from 2005 to 2009 (UIS, 2011), in India, of adults over 15, only 63% (51% of women and 75% of men) were literate. Furthermore, researchers argue that all these self-reported census numbers are likely to underestimate illiteracy levels (Kothari and Bandyopadhyay, 2010). No matter which way we look at the numbers, illiteracy, and specifically adult illiteracy, is an important educational challenge facing India. According to UNESCO (2006), the country is at “serious risk” of failing to achieve the 2015 Education for All Adults literacy goal.

Literacy training in India is complex not only because of the country’s size, but also because of the multiplicity of official written languages. This training has traditionally relied on government-sponsored mass campaigns. The persistence of adult illiteracy despite government efforts has been attributed to several factors: inadequate government investment, instructor apathy and lack of accountability, lack of student interest in learning, and limitations of the standard training system. These limitations include inflexible demands on the learner’s time which may make attendance harder for adults with regular income-earning and home-running responsibilities, limited instruction time, and lack of opportunity for practice, which can lead to rapid loss of skills among newly literate adults (Abadzi, 1994; Bordia and Kaul, 1992; Daswani, 2000; Ghosh, 1994; Kothari et al., 2008).

A 2009 central government policy initiative, *Saakshar Bharat* (Literate India), focused on adult women and an accompanying increase in the national adult literacy budget (Government of India, 2010), may change some of this. The program aims to impart functional literacy to 70 million adults by 2012. This goal marks a departure from the traditional mass literacy training campaigns, to more flexible, context-specific, and group-specific approaches. The program also invites the participation of non-government organizations and welcomes a reliance on technology where feasible (Government of India, 2009a). Its leaders hope to decentralize roles; they envision establishing several “well-equipped, multi-functional” Adult Education Centers (AECs) at the village level. As of 2010–2011 around 33,000 new AECs have been sanctioned or established.

There is a scholarly and policy consensus that the renewed government attention to this large-scale problem is a step in the right direction. Adult literacy is a key component of the United Nations’ Human Development Index (United Nations, nd). The ability to read and write in at least one language is a prerequisite for accessing and optimizing almost any social opportunity. Researchers have noted the importance of adult literacy training for improved self-confidence, self-esteem, empowerment, and autonomy, and greater access to information (Lauglo, 2001; Stromquist, 2005). Benefits of literacy are widely discussed in the literature from other perspectives as well.

The “autonomous model of literacy” argues that literacy itself will have a universal, positive effect on various social and economic practices and outcomes. And investment in adult literacy may create other indirect benefits too such as improved educational (e.g., Chudgar, 2009), health (e.g., Sandiford et al., 1995) and economic (e.g., Basu et al., 2001) outcomes for the extend family of the adult learner. An analysis of recent data on 603,833 children in rural India for instance showed that the mother’s ability to read simple grade 1 text is associated with a 10–15% improvement in children’s grade-appropriate reading ability (author’s calculation

using *Annual Status of Education Report 2009* data). However the autonomous model is widely criticized by the New Literacy Studies approach for its lack of attention to social and cultural context that account for the presence of illiteracy in the first place (Street, 2003).

The “ideological model of literacy” proposed by New Literacy Studies views literacy not as a technical skill but rather as a skill embedded in social context, culture and ideology. Under this approach, what constitutes literacy or illiteracy is itself contested (Street, 2003). Informed by such an expanded understanding of literacy, scholars like Maddox (2008) have argued in favor of Amartya Sen’s Capabilities Approach as a more comprehensive framework to understand the presence or absence of literacy. Literacy is therefore seen not just as a cognitive ability, lack of which creates a ‘stigma’ or the presence of which may rectify challenges facing the adult learner automatically, but rather literacy is viewed as set of ‘functionings’ or the ‘potential to function’. Being illiterate then is not the lack of a cognitive skill but rather a feature of capability deprivation. A deprivation that limits the individual’s choices and the ability to lead the life they may wish to choose for themselves. The presence of literacy conversely is seen as agency and autonomy enhancing (Maddox and Esposito, 2011). The capabilities approach thus requires the researcher to expand their own understanding of literacy, illiteracy and the context within which they are defined and prevail. Ultimately both lines of research and thinking however provide strong support in favor of focusing on adult illiteracy, appropriately defined.

To summarize, adult illiteracy is a large-scale problem with important potential consequences for the well-being and capabilities of the adult learner. The renewed government commitment to the issue has made the overall policy climate in India conducive to novel literacy solutions. Mobile phones may be crucial in devising such innovative solutions because they are portable, and can be used to offer flexible, self-paced, learner centered training with ample scope for repetition and practice. But these will not be the only desirable features of a successful solution. Social and economic disadvantages go hand in hand with adult illiteracy. For mobile phones to hold true promise then they will also need to be widely and equitably accessible and widely and easily usable.

## 2.2. *Mobile technology: its promise for development and persistent inequities of access*

The mobile phone is already accepted as a valuable tool to address development challenges ranging from health, banking, water distribution, agriculture, and fisheries to human rights. Researchers in non-educational contexts have established that mobile phones have multiple benefits for those at the lower end of the economic spectrum. In a recent multi-country study Smith et al. (2011, 77) argue that “mobile phones constitute the basis for one of the greatest expansions of human capabilities in known history”. They review extensive existing literature to support their claim that mobile phones have helped strengthen social, economic, and governance networks in developing countries. In addition they use survey data from the *Telease @ Bottom of the Pyramid* (Telease@BOP) study from India, Pakistan, Philippines, Sri Lanka, and Thailand. They report that on average in each of these countries mobile phones were associated with improved efficiency in daily activities and improved ability to earn and save money. In each of these countries, the phones were also associated with better and more direct access to family and social relations, and a much better ability to act in case of emergency. Depending on the national context, having a mobile phone was associated with slightly improved social status.

Interestingly, however, analyses using the same dataset (Zainudeen and Ratnadiwakara, 2011) and other studies in the

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