

# Edutainment and Edtech for Effective Home Learning

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## Common Perceptions

Almost nine in ten children in Sub-Saharan Africa are learning poor, meaning that they are unable to read and understand a simple text by age 10 (Beeharry 2019). COVID-19 is worsening this “learning crisis,” especially for poor and vulnerable households that lack access to online resources (Azevedo 2020). A common perception is that distributing “edtech” in home-learning initiatives is costly and that money should go toward supply-side interventions, such as building schools or conducting lengthy after-school camps (Banerjee et al. 2016). Therefore, the potential for leveraging smartphones for home learning and broader development has remained largely untapped.

However, recent trends may reverse the trend of untapped smartphone potential in development: almost half of the world’s adults own a smartphone, with ownership rates rapidly growing in developing countries (Orozco 2021). Due to the social distancing imperatives of COVID-19, development interventions are increasingly using online approaches.

Smartphones can deliver persuasive social and behavioral change communications, from social media campaigns to edutainment narratives, complementing hardware solutions (Orozco 2021). A recent report concluded that for education technology to work, it needs to be accompanied by well-thought-out complementary tools (Global Education Evidence Advisory Panel 2020). The combined cost of a smartphone and a solar charger can be under US\$50, so the provision of smartphones preloaded with apps allows for relatively low-cost targeting of different household members.

## Questions We Should Be Asking

With these trends in mind, DIME, with support from a World Bank education project and the Norwegian Agency for Development Cooperation (Norad), conducted a clustered randomized controlled trial in northern Nigeria of just over 9,000 households: “Movies and Mobiles.” In Northern Nigeria, less than 10 percent of parents read to their children, over 50 percent of children do not attend primary school, and over a third of girls marry before age 15. School instruction is often delivered in a language different from the one spoken at home.

The DIME trial tested a combined intervention that lasted five days. In all treatment communities, we invited households with children aged 6–9 to attend community screenings (produced by edutainment producer Impact(Ed), formerly Discovery Learning Alliance) aimed at motivating parents and reshaping their educational and gender attitudes. These involved aspirational animations and documentaries, a female NGO facilitator who led post-screening discussions, and a community leader who endorsed educational messages.

To study the additional effects of the mobile learning add-ons, we conducted a public lottery at the end of the community screening where a third of attendees won a smartphone. Phones were preloaded with two apps: Feed the Monster (which teaches reading foundations) and the Global Digital Library (an app that included hundreds of early literacy books). Multidonor initiatives co-led by Norad and USAID sourced the content, and adapted and translated these apps into over a hundred languages.

We were then able to compare the effects on parents' aspirations and children's learning outcomes across three groups:

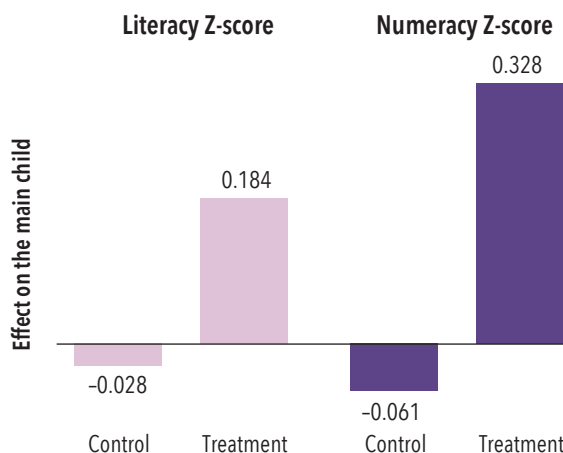
1. Not receiving any treatment;
2. Attending the community screenings; and
3. Attending the community screenings plus receiving a smartphone preloaded with literacy apps.

## Our Findings

The community screenings and follow-up discussions increased parental aspirations for their daughters to attend school even when they reached the age of 15, increased parents' preference to delay their daughter's marriage, and increased school attendance by 34 percent. Though schools in all study locations had recently received a large supply-side investment, increased school attendance did not lead to increased learning outcomes, highlighting the important challenges faced by school interventions.

On the other hand, when households also received smartphones, we observed impacts on learning outcomes in the order of 0.20–0.50 standard deviations (see figure 3.3). Smartphones significantly improved not only literacy skills but, surprisingly because smartphones were not preloaded with numeracy apps, also numeracy skills. Parents in communities that received the combined intervention (edutainment and edtech) became more confident in their ability to help their children learn at home, regardless of the parent's education level. We found a 22 percent increase in parents reading to their children and a 25 percent decrease in parents' beliefs that their own education is an obstacle to helping their children learn. Importantly, we did not find that smartphone use negatively impacted school attendance.

**Figure 3.3** Impact of the Edtech Intervention on Literacy and Numeracy



*Note:* The control group attended community screenings, while the treatment group attended community screenings in addition to receiving smartphones preloaded with applications. Households in the treatment group saw a positive impact on both the literacy and numeracy skills of the main child targeted by the edtech intervention.

Furthermore, preloaded smartphones also improved learning outcomes and reduced teenage pregnancies of non-targeted older siblings, highlighting the spillover potential of smartphones within households.

## Policy Implications

Improving learning outcomes is hard. Our results demonstrate that even “light” interventions such as our five-day initiative can be effective compared to most literacy interventions targeting primary school-aged children.

COVID-19 disrupted human capital gains in developing countries and the evidence base of mobile-based solutions remains scarce for both online and offline populations (Orozco 2021). To maximize their development impact, testing such interventions and other scalable innovations must continue. To increase demand for broadband services and smartphones, more engaging apps

need to be made available. The mEducation Alliance, which has expanded the global supply of literacy and numeracy apps and videos through innovative partnerships and competitions, is a leading example. Free and high-impact apps in a child's mother tongue can complement formal schooling efforts on a global scale. For instance, Feed the Monster and the Global Digital Library (content shown to work in the northern Nigeria trial) work with the vast majority of Android devices and have been translated to 50+ and 80+ languages, respectively.

Development partners need to support open-source and open-license content and the development of content that is as universal as possible. Country adaptations and complementary campaigns can happen in a second stage.

In partnership with Curious Learning, DIME is studying if this approach also works for smartphone owners already connected to the internet, focusing on poor households. This scalable approach could potentially be very cost-effective. For example, the trial's formative research shows that it costs less than five US cents for parents in Nairobi's poorest neighborhoods to download the literacy apps, with even lower costs for non-targeted campaigns.



*This case study is based on an impact evaluation conducted within DIME's Gender, Economic Opportunity and Fragility research program.*

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*\*Development Impact Evaluation (DIME), World Bank.*