Chapter 17
Planning and Designing Educational Technology for Low-Income Communities: A Participatory and Proactive Approach[1]

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ABSTRACT

This chapter is an excerpt of a study that addressed the above concern using the One Laptop Per Child (OLPC) projects in Nigeria and Ghana as a case. It also situates the OLPC XO-laptop as a disruptive technology, because it aims at altering the existing pedagogy of the communities in which it was introduced through its constructivist approach. Moreover, as with most disruptive technologies, the XO laptop project is considered revolutionary, dramatically cheaper than regular laptops, convenient, and provides a different kind of learning content. As with the theme of this chapter, the XO laptop, although possessing disruptive technological qualities, was unable to achieve its goal due to lack of thorough planning and implementation of the adoption process. Results from the study informed the author to posit a model for technology adoption in low-income communities that is considered inclusive, participatory, and proactive, involving all stakeholders in setting up a policy. Such policy is expected to serve as benchmark for measuring the congruency of any proposed product whether disruptive or sustainable to the local need before its adoption.

INTRODUCTION

For decades, educational technology projects have been implemented in several low-income communities by multilateral institutions, individuals, and governmental agencies. Statistics show that the majority of these initiatives fail to accomplish their objectives, thereby wasting colossal amounts of money, talent, and resources. Instead, newer technologies emerge and give rise to market disruption. Overall, poor planning and implementation, failure to properly assess the needs of the community, and negligence in acknowledging the

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input of local experts, often escalate this inability to reach product goal.

Information Communication Technologies (ICTs) such as radio, television, and, recently, computers with Internet connection, have been gainfully employed over time in educational sector to enhance teaching and learning. For several decades, newer technologies often emerge with enticing promises of transforming lives in numerous ways. Quite often too, countries, industries, and international agencies subscribe to these newer technologies with the hope of staying competitive. However, the process by which these technologies especially those geared towards developing nations are designed and implemented deserves serious review. It has been well documented that myriad technological investments in developing countries, African countries in particular fall short in their achievement of proposed objective and there is rarely effective assessment of those projects. Rather, each seems to replace the previous one posing as disruptive technology and promising a more effective outcome and thus joining in the already established continuum that is almost forming a vicious circle[2]. The current chapter harmonizes the theme of this book by focusing on the XO-laptop specifically, its design, transfer and diffusion. The culmination of this work is an introduction of a model of technology adoption that promotes a participatory and proactive approach to technology diffusion in low-income communities of the world.

This chapter is an excerpt of a doctoral dissertation study that investigated mode of Western countries' technology transfer to developing nations using the One Laptop Per Child (OLPC) project as a case. In essence, the study was a formative evaluation of the OLPC XO-laptop project, an educational technology initiative that provides laptop computers to elementary school students in low-income communities. The original mission of this non-profit organization based in Cambridge, MA, was to improve learning and scholastic achievement of elementary school children in developing countries by introducing a revolutionary pedagogical style of constructivism. Later, OLPC's interest expanded to incorporate low-income communities of developed countries.

The study evaluated two cases, the OLPC project at the LEA Primary School Galadima in Abuja, Nigeria, which was initiated in 2007,[3] and the OLPC project at Kanda Primary School, Accra, Ghana, one of the two elementary schools in Ghana that have participated in the OLPC pilot projects since 2008[4]. The focus of this research is primarily on the planning and implementation phases of both projects and to a lesser degree, the learning outcome of both projects because of the short duration. This study was not only imperative but timely because, evaluation of educational programming is new for Africa. It was only in May 1990 at Cote d'Ivoire that the first evaluation seminar in Africa was conducted, and a proposal suggested setting up evaluation needs that would reflect the African perspective. Also, an African Evaluation Association was promulgated in 1999 and the African Evaluation Guidelines were finalized in 2002. Evaluating educational programs in Africa is paramount because technology is transforming Africans' style of life, especially education delivery, both in teaching and learning. Multilateral institutions, institutions of learning, ministers of education, and countries at large are vigorously investing in educational technology in their quest to meet the demands at the global market. In fact, scholars have opined that investments in science and technology will not only ensure sustainable development for Africa, but will also greatly help with the obstacle facing its education system, and greatly further its achievement of the UN's Millennium Goals of Universal Primary and Secondary Education (Shrestha, 2000; Leach, 2008). For several centuries, communication technologies have played a vital role in education enhancement, from the invention of paper through papyrus, books, chalkboard, radio,