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# VCU

## Addressing the challenges of computer literacy among young Haitian adults

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### Objective

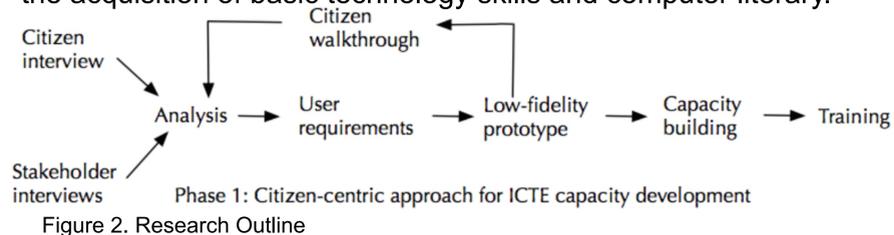
To identify and address challenges of capacity building required to facilitate technological competency among school students, young adults and teachers in Haiti through, a two-phase research plan. The first phase utilizes a citizen centric framework for Information and Communication Technologies for Education (ICTE) capacity development that integrates stakeholder needs, prototype development, capacity building, training, and evaluation. They include a sustainable computing platform, Computer on a Stick (COS), and teacher workstation with Internet in a Box (IIAB). The ICTE solutions are installed at six different sites in the impoverished Central Hinche province. The citizen-centric approach presented in this paper may be utilized to develop ICT solution in other countries that face similar barriers of infrastructure and financial resources.



Figure 1. Students in Haiti using built laptops

### Technology and Design

The study is planned in two phases. The research outline is shown in Figure 1. The framework provides a systematic approach to identify immediate and obvious needs of the users, gather feedback for improvement, and incorporate incremental improvements for the engineering of artifacts. In phase 1 of the study, we adapt the citizen-centric approach for developing locally relevant ICTE capacity (shown in white background in Figure 1). The ICTE artifacts developed in this phase leverages low-cost open source solutions to facilitate the acquisition of basic technology skills and computer literacy.



### Technology Solutions

- *Internet in a Box (IIAB, Figure 4)*: is an open source project that consolidates approximately a terabyte of world's free information in an inexpensive device that can be connected to workstations using local area network (LAN) or using wireless. IIAB provides access to essential internet based free information and operates without any internet connection, domain name services, or internet server configurations. The IIAB content includes more than five hundreds hours of instructional videos on topics such as science, math, art, history, and literature from the Khan academy, Wikipedia in 37 languages include Creole, MIT-Haiti STEM classroom initiative content, a library of 40,000 e-books from the Project Gutenberg archives (Gutenberg, 2014), detailed world map down to street level, and a repository of open source educational software.
- *Dafturn Ofris (Figure 3)*: Due to the shortage of readily available qualified technology support professionals, the computers have to be configured to prevent intentional or unintentional damage to the operating system and software environment. To ensure the stability of the operating system
- and file system, the laptops are configured with Dafturn Ofris open source software prior to their deployment in the computer labs. This configuration allows student to log on and use the laptop without impacting the computer configuration and application settings. Restarting the computer simply returns the system to its original state.
- *Computer on Stick (COS)*: COS is a complete computer system that boots from the USB port on a computer. The Edubuntu operating system with persistent storage capability is implemented on the COS. It is a mature computing environment that will also enable the users to store their personal files, applications, books, music and movies on the lightweight low profile USB thumb drive-based computer operating system.

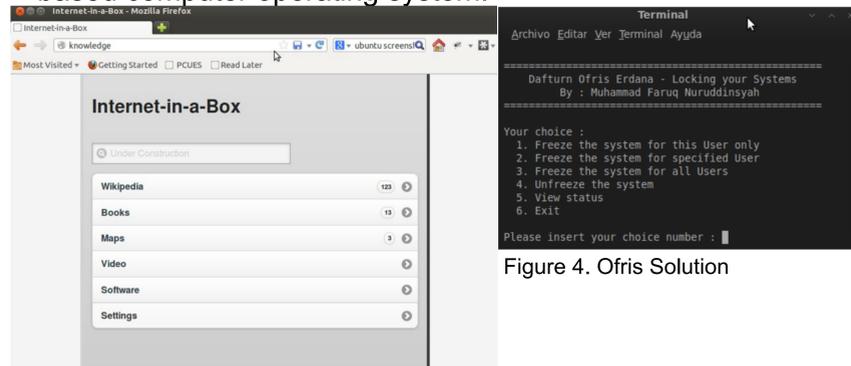


Figure 3. Internet-in-a-box Solution

### Use in Haiti

The target audience for this research is the students, teachers, young adults, and school administrators. Laptops and COS's were built for the target children and set up in six sites in Central Hinche. Students will learn basic computer skills from the teachers after proper training.



Figure 5. Students in Haiti using built laptops

### Results

Access to technology and digital information content remains a desire for a vast majority of the Haitian youth. Although ICT may serve as an enhancer of capabilities, and producer of opportunities, the country will remain stagnant unless the doors are opened for the Haitian youth to access technology and information. What we have given the children in these sites is temporary, until better training solutions and access to technology can be provided to Haitian youth.

### Acknowledgements

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### Sources

Gutenberg. (2014). Project Gutenberg Archves. 2014