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Introduction

Over the past few decades, much of the world has continued to experience economic development largely due to rapid growth in technology. Despite this progress, there are still areas that remain untouched by advanced technologies. Haiti is the poorest country in the Western Hemisphere and one of the poorest nations in the world with 80% of the population living under the poverty line and 54% in abject poverty (CIA, 2013). Many Haitians have no clean running water, about 21% have access to electricity, and almost 50% of the country is illiterate (Bank, 2012). The intense levels of poverty have resulted in lack of investment in human capital and lack of educational infrastructure.

The Information and Communication Technologies for Education (ICTE) initiative in Haiti is a "Project of Hope." ICTE can facilitate the acquisition of basic technological skills, while simultaneously contributing to poverty reduction and human development. In order for Haiti to succeed in the 21st century, students, young adults, and teachers need to develop technological knowledge and skills. Developing technological literacy and computer familiarity will help young Haitians participate in the digital economy and/or obtain jobs.

Research Questions

The Haiti ICTE research project aims to address challenges of developing computer literacy in Haiti. Three research questions are addressed in this research:

1. Determine how ICTE can facilitate technological access, computer familiarity, and information literacy among students, young adults, and school teachers.
2. Determine what training solutions can be developed to assist young Haitians to learn basic computing knowledge and attain technology familiarity.
3. Evaluate ICTE solutions for their suitability in achieving educational goals in the Hinche province of Haiti.

Methods

Design Science: Develop the ICTE Artifacts
1. Computer on a stick (COS): Edubuntu operating system with persistent storage capability
2. Internet in a Box (IIAB): Consolidate approximately a terabyte of free information on an external hard drive that can be connected to workstations using local area network (LAN) or via wireless. Access to 5000 hours of Khan academy videos, Wikipedia , 40,000 e-books, world map zoom-able to street level, and a repository of open source educational software.
3. Tutorials: Microsoft Word, PowerPoint, Paint, Calculator, Tux Math, Tux Paint, Geography

Quantitative Research: Data Gathering and Analysis
1. Survey
2. Census and Survey Processing System (CSPro)
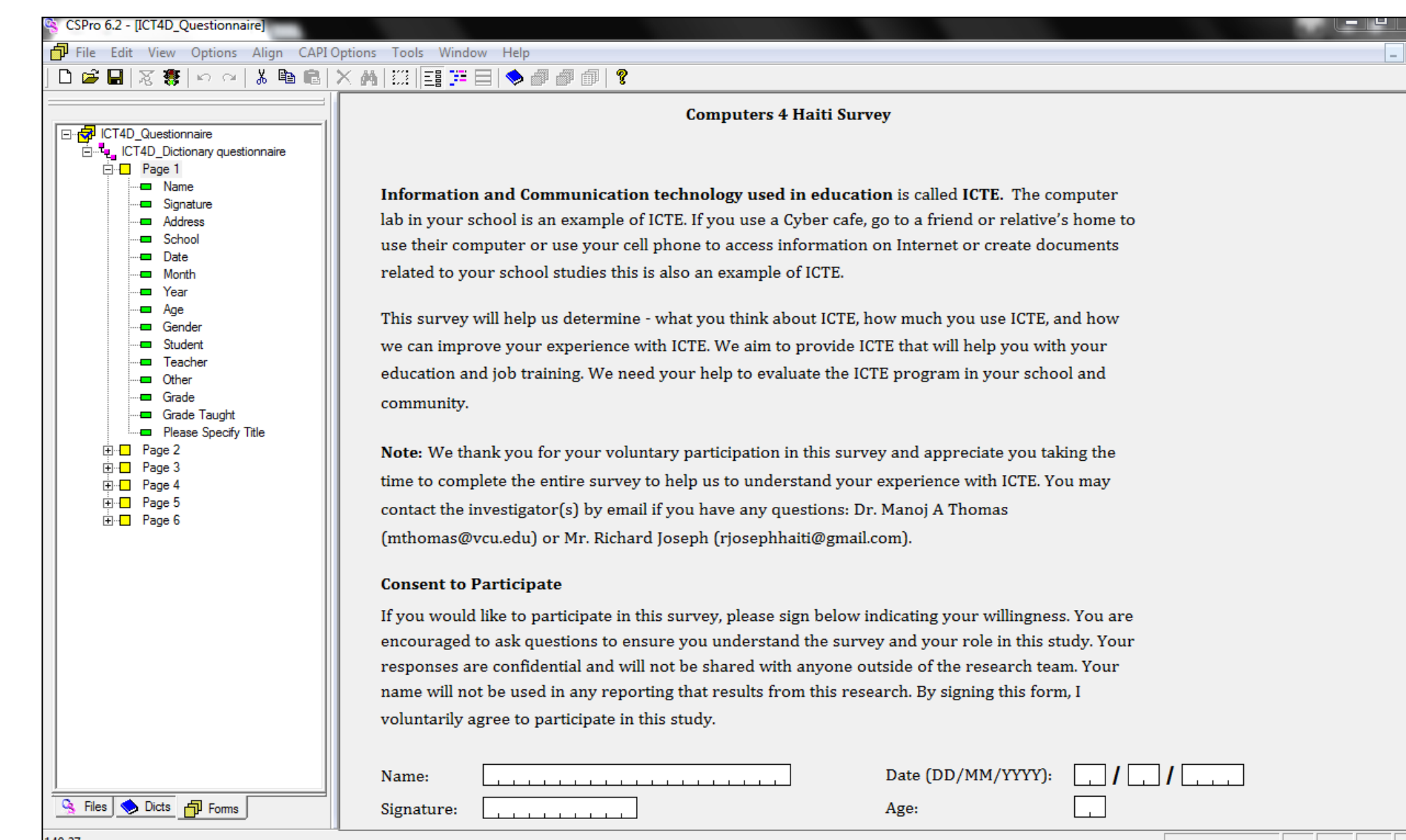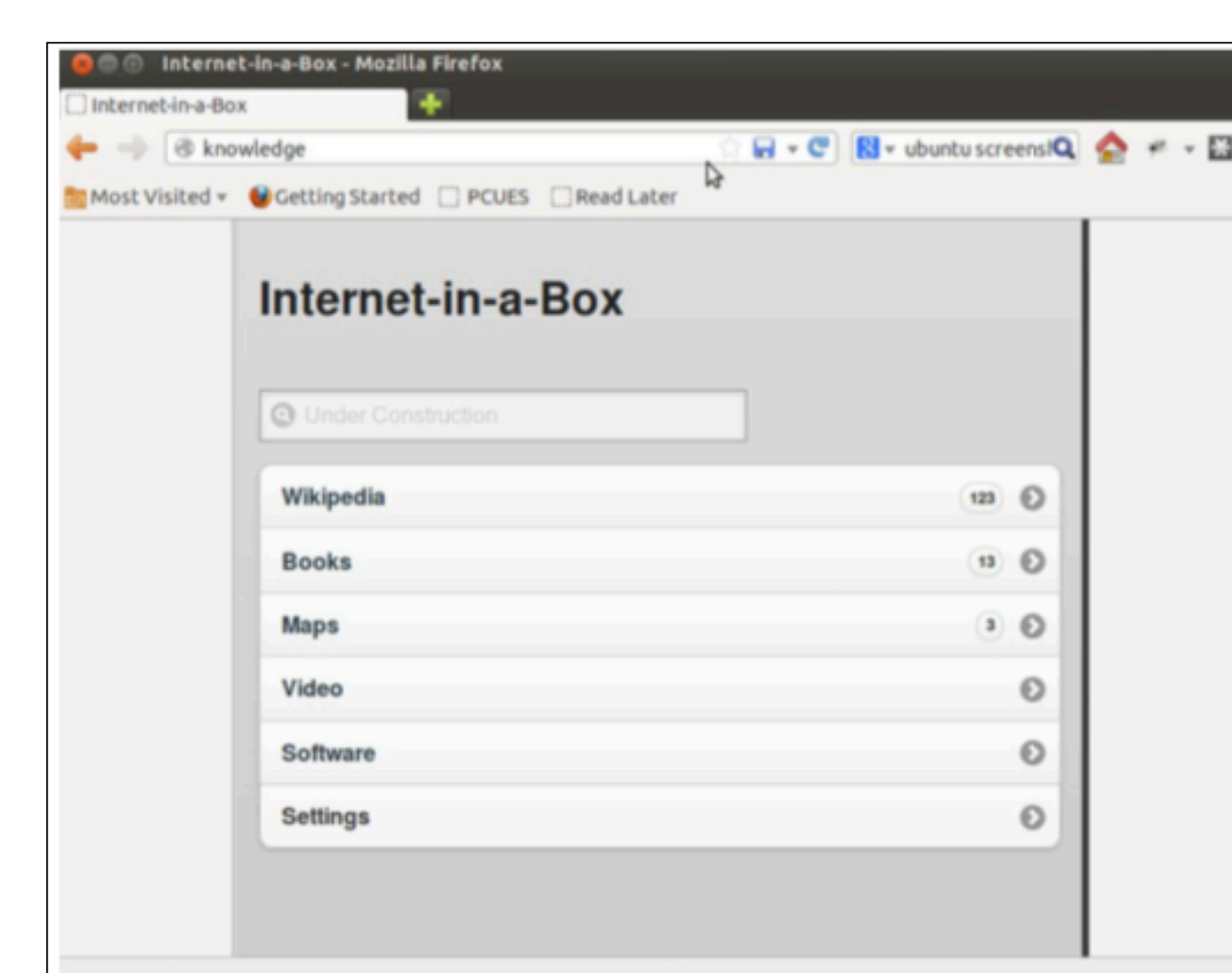
Results

Qualitative:
Infrastructural and informational barriers include lack of internet connectivity, lack of skilled manpower, lack of digital educational content, and inconsistent electrical supply. This paired with inadequately trained teachers and limited financial resources for ICTE deployment creates huge obstacles.
This resulted in the inability to deploy COS and IIAB. The focus shifted towards teaching tutorials. Students and teachers desired to learn. Our trainings showed impressive improvements related to computer familiarity and literacy for novice users of technology.

Quantitative:
311 students and teachers trained over the course of five days (275 Students and 36 Teachers). Collected 200 surveys combined with 39 surveys from 2015 which are currently being analyzed.

Conclusion

This research aimed to understand and address the challenges faced by Haitian students and teachers related to computer literacy and familiarity. The results showed the countless obstacles faced by students and teachers on a daily basis. ICTE serves as an enhancer for capabilities and a producer of opportunities, but without the correct infrastructure there cannot be long term progress. In order for Haiti to succeed, investment in technology has to become a priority and the Internet has to become a commonality. The Haiti ICTE research project will continue to facilitate the basic technological skills needed for students and teachers.

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