Jesuit Higher Education: A Journal

Volume 9 | Number 1

Article 7

11-15-2019

The BlueBox Practicum: Integrating Technology, Culture, and Academic Service-Learning

Charles Braymen
Creighton University, charlesbraymen@creighton.edu

Dustin Ormond
Creighton University, dustinormond@creighton.edu

Follow this and additional works at: https://epublications.regis.edu/jhe

Part of the Bilingual, Multilingual, and Multicultural Education Commons, Business Analytics Commons, Business Intelligence Commons, Entrepreneurial and Small Business Operations Commons, Finance Commons, Finance and Financial Management Commons, International and Comparative Education Commons, International Economics Commons, Latin American Studies Commons, and the Spanish and Portuguese Language and Literature Commons

Recommended Citation

The BlueBox Practicum:
Integrating Technology, Culture, and Academic Service-Learning

Charles Braymen
Associate Professor of Economics and Finance
Creighton University
charlesbraymen@creighton.edu

Dustin Ormond
Associate Professor of Business Intelligence and Analytics
Creighton University
dustinormond@creighton.edu

Abstract

Advancing education in marginalized communities has been more difficult compared to more privileged communities due to the lack of infrastructure, which in part results in an absence of educational materials. *The BlueBox Project* was created to minimize this divide by bringing a wealth of information to these communities. Using a small digital computer, faculty, staff, and students across many disciplines built the BlueBox, a stand-alone digital library which hosts an array of books, articles, educational games, and videos to inspire learning in a variety of subjects including science, technology, math, music, and literature. The BlueBox is powered by solar energy, battery, or power outlets and is accessible without the need for Internet access. An academic service-learning practicum course was developed as part of *The BlueBox Project* to enhance students' discipline-specific knowledge and create a dialogue surrounding development, poverty, culture, social injustice, and service. This innovative course has led to many partnerships and technological enhancements that will improve the project and ultimately change the lives of people around the world.

Introduction

In the Fall 2018 semester we embarked on the initial Creighton University offering of an interdisciplinary, hybrid campus-based and travel course titled "Practicum in International Development." Our course was the first within the Heider College of Business to receive the University's Academic Service-Learning designation and was cross-listed in the fields of economics, business intelligence and analytics, finance, entrepreneurship, and Spanish. This semester-long course provided an opportunity for students to engage in active, mission-focused research as part of *The BlueBox Project*. A highlight of this course was to travel to the Dominican Republic over Fall Break to deliver the BlueBoxes to marginalized communities. We structured the course to blend discipline-specific skills in a goal-focused interdisciplinary environment with a dialogue of development, humanitarian efforts, poverty, privilege, and social justice. In this article we provide background on *The BlueBox Project*, the structure of the practicum course, and describe our objectives, experience, and outcomes of our initial offering of the course.

The BlueBox Project

The BlueBox Project is an initiative of Creighton University seeking to bring digital educational materials to communities without access to the Internet or where data was prohibitively expensive. A core component of the project is the BlueBox, which is a small, low-cost device that can be used to host websites, videos, documents, and online courses by functioning as both a WiFi hotspot and webserver. The BlueBox allows users to wirelessly connect phones, tablets, and laptops to the device to obtain access to educational materials in environments where internet is not available via physical or wireless (3G/4G) connections or is otherwise prohibitively expensive. For sites without electricity, a solar version of the BlueBox is available that also provides USB-ports for the charging of mobile phones and tablets.

A classroom from a BlueBox site in the Dominican Republic

The BlueBox seeks to provide materials of both academic (elementary and high school) and applied nature. The use of electronic resources, often accessed via tablets,[1] have been shown to improve outcomes in educational environments in developing countries where many schools lack classroom texts and other reference books.[2] *The BlueBox Project* currently provides site-specific, local language content for partner schools based on school demographics. The typical BlueBox contains 128GB of educational resources that includes open-source textbooks, Khan Academy videos (tutorial videos in math, science, and many other subjects), Wikipedia for Education, Project Gutenburg (thousands of books), RACHEL and OER2Go materials from World Possible (educational games, reading, music, and much more), and the learning management system Moodle (locally designed online courses and training).[3] In the case of one high school, a BlueBox with foreign language content was provided at the request of foreign language teachers. *The BlueBox Project* is also working with several partners to facilitate the translation of open educational resources into additional local languages. Additional information on The BlueBox Project can be found at http://bluebox.creighton.edu/. Our numerous conversations with teachers and community leaders have confirmed the findings of a recent survey by The Pew Center[4] that there is a strong belief in developing countries that access to the internet benefits education. The BlueBox seeks to provide such educational materials in areas that may otherwise be hindered by the lack of internet or electricity.[5] The BlueBox also addresses another concern identified by both our conversations with partners and the Pew survey: non-educational (social media, etc.) and inappropriate material is not on the device and, therefore, inaccessible to students who might otherwise gain access if they were connected to the internet.

Extant research also notes that the development of "life skills, food production skills, and self-employment skills"[6] is an important component to increase the standard of living of rural communities in developing countries. Our conversations with community leaders have supported the findings of existing research[7] that agricultural education is challenging but also crucial for development in rural areas. Several BlueBoxes have been deployed in areas accessible to community members (such as churches) that have provided content more applied in nature such as topics in agriculture, hygiene, and personal finance. Community members are able to access the material via cell phones, which are much more prominent than personal computers,[8] and provide a familiar interface for the users. This "community

Figure 1: The BlueBox Homepage

library" approach builds upon the work of Mitra et al.[9] who examined the use of a computer located in a wall by rural children and was highlighted in the recent TED talk.[10] *The BlueBox Project* is currently developing additional partnerships to help facilitate the development of videos and courses on applied topics such as health and hygiene, entrepreneurship basics, safety training videos, and virtual experiences related to the local culture and environment. A key component of *The BlueBox Project* is a research program designed to examine what educational resources are used at a site in an effort to better serve the users in the future. Our ongoing research examines the characteristics of site-level usage based on the demographic (school grades, urban vs. rural, etc.) and economic characteristics of a location. These statistics will enable us to update the existing devices, provide more applicable materials on devices hosted by new schools and other sites, and encourage our partners to develop additional materials that meet the needs and interests of a given demographic.

BlueBoxes have been deployed in schools and other sites in the Dominican Republic and over a dozen other countries around the world. *The BlueBox Project* was highlighted as an "Innovation that Inspires" by the Association to Advance Collegiate Schools of Business (AACSB) at its

2019 International Conference and Annual Meeting.

The Dominican Republic and Haiti

A primary component of the practicum course was an eight-day trip during the mid-semester break in Fall 2018 to Santiago de los Cabelleros, Dominican Republic where Creighton University's Institute for Latin American Concern (ILAC) is located. Creighton's ILAC has held a relationship with Centro de Educacion para la Salud Integral (CESI) for decades. The Dominican Republic is a middle-income economy previously dominated by agriculture, but is increasingly seeing growth in tourism, mining, and free trade areas focused in textiles. The urban and tourist-oriented coastal areas are well-developed relative to the rural areas where populations are largely supported by agriculture. Our experience in the country suggests that internet via wireless cellular and other means is limited in the rural, mountainous areas of the country and cellular data is expensive relative to income levels, which limits the usage of large data transfers such as such as PDF files and videos in these areas. A key portion of our course trip was focused on deploying BlueBox technology to schools in these areas. Our trip also involved numerous visits and BlueBox deployments to non-governmental organizations working in Haiti or with Haitian immigrants and those of Haitian descent on the Dominican side of the border. Current U.S. State Departmental travel advisories and university policies restricted our group from traveling across the border into Haiti.

The historical foundations of both the Dominican Republic and Haiti, which share the island of Hispaniola, is essential to understand the context of the practicum course. Spanish control over the island began with Columbus and ended with the Spain surrendering the island to France in 1697.[11] The independent nation of Haiti was founded in 1804 in the western portion of the island following a slave revolt that put an end to French rule that had resulted in the import of hundreds of thousands of Africans slaves to the island of Hispaniola for the primary purpose of cultivating sugar.[12] The threat of a return of colonial powers led to an eventual Haitian effort that seized control over the Spanish-speaking eastern side of

	Dominican Republic	Haiti
Population (millions)	10.5	10.7
GDP per Capita (USD)	6535	815
Access to electricity (% of population)	99	38
Life expectancy at birth, total (years)	74	63
Lifetime risk of maternal death	1 in 400	1 in 90
Children living with HIV (ages 0-14)	1 in 2000	1 in 500

Table 1: A Comparison of the Dominican Republic and Haiti
All data from 2015. Data Source: World Bank Development Indicators

Hispaniola from 1822 until Dominican independence from Haiti in 1844.[13] Fears of additional hostilities led to a Dominican request for Spanish rule that occurred over the eastern side of the island beginning in 1861 until a final independence in 1865.[14] This colonial and immediate post-colonial period began a sequence of events that have shaped the attitudes between these neighboring countries to this day.

Despite anti-Haitian sentiment, a large number of Haitians entered the Dominican Republic in the early 20th century, which totaled 52,657 persons in the 1935 Dominican census,[15] to meet the demand for labor on primarily U.S.-owned sugar plantations. These migrant sugar cane workers formed communities in the Dominican Republic called "bateys," while thousands of other Haitians lived along the border as traders.[16] Generations of ethnic-Haitian workers persisted in the sugar fields of the roughly 500 bateys until the collapse of the Dominican sugar industry that was driven by changes in U.S. trade policy and falling prices of sugar.[17] Today, these descendants, many of which have never set foot in Haiti, exist in the bateys, but without employment or documentation of their status.[18] On the Haitian side of the border, others continue to be pulled into the Dominican Republic by hopes of a better life or were driven from Haiti by poverty or violence. In present day, a flood of Haitians also cross the border twice a week for Market Day, desperately seeking to sell Haitian goods and purchase Dominican goods for potential resale or consumption upon their return to Haiti. Throughout our visit the divide between Dominican society and ethnic Haitians was apparent, despite remaining on the Dominican side of the border. Table 1 shows key indicators of

social development for the Dominican Republic and the disparity with its lesser economically developed neighbor Haiti.

The Practicum Course

Overview

Traditional business courses are often segregated into a single subject matter and restricted to students in the business school. This innovative course sought to break these "boundaries" not only in the business school, but also across campus. Therefore, the 15 students who were accepted into the course had various backgrounds in finance, economics, technology, ethics, Spanish, and other disciplines. The course generated substantial interest, and the number of students applying exceeded the capacity of the initial class.

Although students were assigned to specific tracks to enhance their own discipline-specific knowledge, they also gained knowledge and skills in additional subject material traditionally considered outside their discipline. The interdisciplinary nature of the course was critical to the success of building the BlueBoxes and deploying them in the Dominican Republic. Key aspects of the course were to work with interdisciplinary teams and engage with technology, Spanish-language training, and analysis of the project and environment. Students also engaged in coursework designed to examine the motivation, logistics, and measurement of individuals and organizations seeking to foster social progress in the world.[19] Prior to travel, students developed a historic, cultural, economic and social background of the Dominican

Republic, which is an essential prerequisite for any international academic service-learning course.[20] This allowed students to examine cultural and economic realities of life while in the rural Dominican Republic, and they utilized feedback, dialogue, and observations from these community visits to promote personal reflection. Following travel, students proposed and developed extensions to The BlueBox Project and practicum course. Below is the guiding set of learning objectives of the entire course (note: learning objectives for specific tracks are highlighted further below):

General Learning Objectives:

1. Students will recognize and articulate key motivating influences for engaging in philanthropic endeavors.
2. Students will seek to understand the lives and opportunities of the poor and marginalized and the variation in opportunities that exists across different populations.
3. Students will appreciate international, cultural, and economic diversity and recognize the challenges and opportunities that diversity creates.
4. Students will recognize the need for dialogue, interaction, and observation in creating and implementing development efforts.
5. Students will recognize their specific knowledge and opportunities afforded to them can be employed to positively impact the marginalized of the world.
6. Students will develop the ability to engage in critical reflection of society and human development.
7. Students will understand and engage in academic and product development research and recognize the ethical issues related to human subject research.
8. Students will experience and appreciate working within interdisciplinary groups and the opportunity that such an approach creates.

The Tracks

The students in the course were initially divided into three tracks based upon their majors: business

and economics, technology, and Spanish. Three Creighton faculty members drawn from the Heider College of Business and Creighton College of Arts and Sciences served as track instructors for the course. The track structure of the course allowed students to develop discipline-specific knowledge and skills, which are addressed in the track-specific learning objectives below. Each class period preceding travel was split into two sessions: a working session with the students divided into tracks and presentation sessions where one or more groups would present relevant information from their track to the class as a whole. These pre-travel activities are described below.

Pre-Travel Activities of the Business and Economic Track

The Business and Economics track possessed students from a diverse group of majors including economics, finance, marketing, and business ethics. The primary focus of this track was to develop an understanding of key issues in development. The readings for the course included those relating UN Sustainable Development Goals to economic and other indicators[21] and the role of education in development.[22] Students in this track prepared presentations for the larger class covering the economic environment of the Dominican Republic and Haiti and ethics in photography during service trips. Students also designed a survey of publicly observable measures of community-level development that underwent the IRB process at Creighton University. The key learning objectives for this track are below:

Business and Economics Learning Objectives

1. Students will understand key economic issues in economic development.
2. Students will gain experience accessing and presenting economic data.
3. Students will design and create surveys related to economic development.
4. Students will gain knowledge related to the role of education in economic development.
5. Students will propose potential solutions that have an economic impact in developing countries.

6. Students will develop strategies to gain visibility for the Practicum in future years

Pre-Travel Activities of the Technology Track

The construction of a functional BlueBox and the understanding of the underlying technology was the initial priority of the technology track. As with any technological endeavor, the possibilities are limitless, but a prior understanding of the technology was necessary before future extensions could occur. Therefore, students began by learning foundational concepts prior to moving to more advanced topics.

To enhance the learning process, students first set up a repository to quickly share documentation and eliminate redundancies. Next, each student was given a Raspberry Pi (a small, low-cost computer) and was tasked to become familiar with its hardware (i.e., installing a clock module, mounting in a protective case) and software (i.e., the Pi's operating system and terminal commands). This required the students to learn how to remotely log in to the device and change many of the default configurations. Then, students began altering existing files and adding new files. These changes included (1) setting up a database and web server for the purpose of storing data and navigating web content on the BlueBox, (2) changing the home page to indicate the terms of use, (3) redirecting those who agreed to the terms of use to the content of the BlueBox, and (4) adding the educational content to the device. The technology students then migrated the content of their functional devices to many other BlueBox devices prior to distribution. Finally, the technology students also provided training for the BlueBox devices to the rest of the students in the course. Below is the guiding set of learning objectives used for the technology track:

Technology Learning Objectives

1. Students will create technical documentation to support the technology used throughout the course.
2. Students will be able to navigate a LINUX operating system (OS) and change files on the OS.
3. Students will enhance their knowledge about database and server administration and configure them accordingly.

4. Students will strengthen their knowledge of SharePoint, web design, and other technology related to communication and collaboration.
5. Student will brainstorm and propose solutions to enhance the technology used by different cultures and recognize differences technology knowledge across cultures.

Pre-Travel Activities of the Spanish Track

A core course component of the practicum was that students would be traveling to and working with technology in the Dominican Republic. Therefore, the Spanish track first developed a working vocabulary of technical words and phrases that would be highly relevant in communications, both written and oral, regarding the BlueBox and related technologies. Additionally, students in the Spanish track translated many of the materials that would be used (e.g., the terms of use page) on the BlueBoxes in the Dominican Republic.

Given that most students from the other tracks had little or no prior experience with Spanish, the Spanish track presented basic phrases so that students could travel effectively and politely. These presentations involved presenting vocabulary before the other students and coordinating language practice. Below is the guiding set of learning objectives used for the Spanish track:

Spanish Learning Objectives

1. Students will acquire knowledge about Caribbean culture and will learn how to impart this information with their classmates.
2. Students will acquire Spanish-language skills related to technology.
3. Students will actively engage in communication with teachers and local community leaders and facilitate interaction between them and non-Spanish speakers.
4. Students will learn the process of translation and written documentation technical information.

5. Students will gain a cross-cultural perspective and address key concepts in the proposal of a development-related projects in a Spanish-speaking country.

Travel

During Fall Break 2018, the students and the faculty of the course traveled to the Santiago de los Cabelleros, Dominican Republic, where the ILAC/CESI Center provided the primary accommodations during the eight-day trip. The ILAC/CESI staff were essential in the planning of the trip as well the selection of potential schools and other sites where BlueBoxes would be deployed.

The agenda of the trip was intentional in its structure to ease our students into viewing and interacting with poverty and otherwise marginalized persons. While most students in the group had previous international travel experiences, previous exposure to lesser developed areas was limited in the group. Students received a tour of the ILAC/CESI Center upon their evening arrival. The first full day in the country included attendance at a Spanish-language Catholic mass and a visit to a museum of national history and culture. The group also prepared the equipment that would be deployed at sites during the rest of the week. The day ended with a group reflection, and students then wrote the first of their nightly entries into their travel journal.

The next two days resulted in visits to rural schools where our group trained teachers and administrators on the use of the BlueBox and tablets. Spanish-speaking students and faculty (both of the Spanish track as well as native and fluent speakers of the other tracks) played an essential role in the training of the technology, but the entire group was involved in the process. Each evening a reflection occurred that included students voicing their emotions and uncertainties in a manner that is atypical for a traditional undergraduate business course, but yet essential in fostering the unity of heart, mind, and soul. Literature on the integration of Ignatian reflection in travel courses suggests developing trust within the group to facilitate effective group reflections.[23] Our previous campus class periods and a common objective surrounding *The BlueBox Project* provided catalysts for the development of this trust. Previous suggestions that silence is a useful component of reflections were accurate;[24] silence of a minute of more provided a stimulus for introspection as well as a synthesis of emotions with pre-travel academic readings on development, humanitarianism, history and culture. We note that the development of a framework to process emotions is important not only for personal development but also in a business setting, as has been noted in this journal:

> Leaders today are confronted by daunting challenges: globalization of the economy, rapid changes in technology, and shifting business and education models—all at an ever increasing rate of change. Whether an organization proves agile enough to survive and thrive will depend on the degree to which its leaders can manage their own emotions in the face of escalating change.[25]

The first two days of school visits were followed by visits to two different bateys where nonprofit organizations were working to meet the needs of the community populations via an after-school educational and hunger relief program. The level of poverty in these areas far exceeded that of prior communities and held a profound impact on our students. Even with the poverty and social injustices in these areas, our students recognized the hope, joy, and love within the communities. The work of these nonprofit organizations highlighted that small-scale organizations can have a life changing impact on those that they serve.

BlueBox preparations in the Dominican Republic

We proceeded to the Dominican-Haitian border for the remainder of our trip where students visited several sites and organizations that highlight the disparity in income between the two countries that share the same island. Students were also able to experience Market Day where Haitians would cross the border to sell products such as food, clothing, toiletries, trinkets, toys, etc. and buy goods produced in the Dominican Republic. This further indicated the extreme poverty and resulted in a wide array of emotions (e.g., sadness, anger, and guilt). Many students indicated that they wanted to help but had no idea where to start. However, the delivery of BlueBoxes to a Jesuit organization, visits to organizations assisting those in need, and further reflections reinvigorated the belief that small steps can inspire hope. Additionally, while visiting with one organization, we were able to foster a relationship to begin translating some open-access educational materials from Spanish to Haitian Creole.

Course Projects

Through its existing research program, *The BlueBox Project* strives to continuously improve the content available to those in marginalized communities throughout the globe. The results of our research, feedback from partners, and constantly changing technology require that improvements to the BlueBox be made to stay current and deliver the most relevant content to those communities. Therefore, after traveling, students were tasked to identify ideas and projects to improve the current implementation of the BlueBox and the practicum travel course. The remainder of the semester following the travel period was devoted to the development and implementation of these projects. The list of ideas was substantial and the below is a representation of the projects

1. The creation of *The BlueBox Project* website, currently located at http://bluebox.creighton.edu .
2. The installation of the open-source learning management system Moodle on the BlueBox device and the creation of a server on campus for course development on the Moodle platform.
3. The planning and development of the initial portions of an Android app that will work with BlueBoxes.

4. The creation of PDF and video instructions in Spanish on how to use the BlueBox.
5. The fostering of a partnership to facilitate the translation of elementary school reading materials into Haitian Creole.
6. The development of a BlueBox with French and English language materials designed for foreign language instruction in the Dominican Republic.
7. The creation of a video that will be used in the recruitment of future students. The video is currently posted on the Practicum Course website.[26]

Course Outcomes

#1 Our students recognized that an understanding of the culture and reality of those that they wish to impact is an essential component of development efforts. While short-term, relief-focused aid can be essential in the alleviation of poverty due to natural disasters and conflict, such aid can be detrimental to the community if it fosters dependency rather than future self-sufficiency. Furthermore, such efforts should be approached as partnerships, a concept described succinctly by Corbett and Fikkert: "Development is not done *to* people or *for* people but *with* people."[27] Our group indicated that the knowledge attained by interacting with the local communities far exceeded their expectations.[28] Furthermore, our students also recognized the importance of focusing on further project development in a manner that provides benefits to the host population well beyond the end of the service trip.

#2 Our business students recognized the potential role of their educational background and skills outside of a "for profit" setting. Several students volunteered to develop a marketing strategy for one of the nonprofit organizations visited in a batey during the trip to the Dominican Republic. Other students have also continued their work beyond the semester course to help develop the project website and to provide training to another travel course that will be deploying the BlueBox technology in a school.

#3 A key learning objective of the course was to transform views of poverty by our students. Those in developed countries can often view poverty as inevitable and driven by the personal deficiencies of the poor.[29] The interaction with the local communities transformed many of the views of our students into recognizing the roots of poverty are based in systematic failure and social injustice. Furthermore, the students' recognition of their own privilege became apparent during course travel and reflection. Students experienced an emotional transformation while processing these concepts during evening group reflections, travel journal entries, and a final course reflective essay. Initially, the transformation for most students began with emotions of sadness, anger, and guilt, but then evolved into one of hope and responsibility.

#4 The BlueBox Project seeks to embody a philosophy of partnership rather than paternalism,[30] which can be driven by "unequal power relationships."[31] This is an admittedly challenging objective for a project that seeks to provide new technology to schools and organizations. However, in addition to ethical and sociological reasons, this philosophy is also necessary for the practical purpose of successful program implementation. Our preliminary research has found that those schools and organizations that benefit most from the project claim ownership over their local implementation of the project via structuring access (i.e., allowing students to check out tablets at the school to access the BlueBox material after classes) and embedding the BlueBox material within their curriculum and assignments. Teachers and other administrators are encouraged to provide feedback such as requesting additional material to be added to the BlueBox. Likewise, local partners have driven the initiative to create additional content (such as translated materials or online courses) to be included on the device and/or be disseminated more broadly. A vital aspect of the course is to ensure the practicum students embrace this philosophy of partnership; this was evident in the nature of course projects that were proposed by the students.
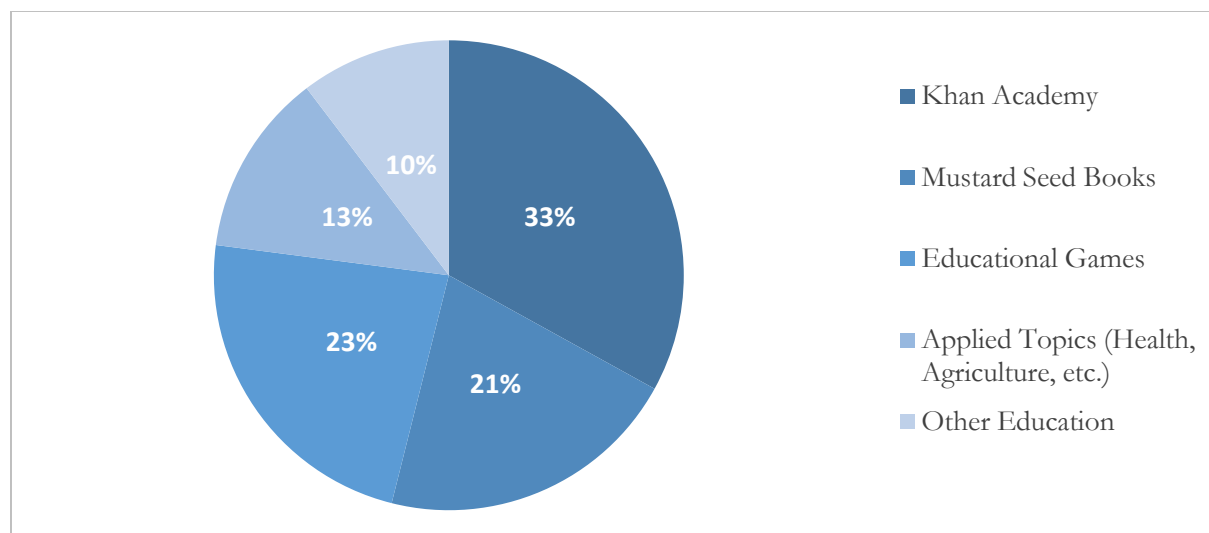
Figure 2: BlueBox Content Utilization

Preliminary Outcomes

A primary consideration of the BlueBox Project is the impact that the digital resources have on learning by students in schools where the device is deployed. While the measurement of the impact on learning is a desired objective, our initial research has focused on the frequency and type of utilization of the devices. More succinctly, a) are the devices being used by schools following the initial orientation and b) what content is most utilized by schools? It is our intent to use this information to further enhance the available content on the devices and develop a future study of the impact of the devices on student learning outcomes.

Although the data of the BlueBoxes distributed to schools by the Fall 2018 practicum course have not yet been analyzed, a BlueBox and ten tablets were also deployed to each of four Dominican primary schools the prior year in late November 2017. Two of these four schools were in rural areas of the Dominican Republic, while the third and fourth were in more urbanized settings. The usage data was recorded through the end of the school year in June 2018, which implies approximately six months of usage.

Our data show that 1508 different web-based resources were used across the four schools during this time period. These usage statistics include views of web pages and videos as well as the download of electronic books in Adobe Acrobat (pdf) format that could be viewed on the tablet devices provided to schools. Figure 2 shows the breakdown of utilization by primary content area.

Figure 2 shows that the most popular content types were Khan Academy videos and Mustard Seed Books. This usage was expected as Khan Academy's mathematics videos fit well with the primary school demographic of these sites. Likewise, Mustard Seed's set of e-books is well suited for primary schools.

The initial deployment of BlueBoxes contained a vast array of materials. It is our intent to begin to develop custom BlueBoxes fitting the demographics of each specific site. In the case of this initial deployment, an expansion of materials focused towards primary education will be a fruitful development. In particular, additional e-books at the primary "learning to read" level should provide additional choices and opportunities for the young students in the environment. Likewise, additional learning games have been requested by several teachers at these sites. Overall, numerous teachers and other community leaders have noted that the BlueBoxes and tablets provide a great resource to enhance the learning of students, which is an influence we hope to measure in future research.

Primary school usage is only one of many deployment scenarios for BlueBoxes. We have deployed BlueBoxes at secondary schools as well

as community centers. We again expect usage to vary based on the demographics of its users. Likewise, we have engaged in conversations surrounding future deployments of BlueBoxes that may host material on health-related training such as nutrition and disease management. Several partners have also expressed interest in a BlueBox-hosted, self-paced course on business fundamentals and entrepreneurship. Overall, we believe there is a broad spectrum of beneficial content that can be developed and deployed, and we look forward to working with our current and new partners to develop this material.

A Campus Effort and Beyond

A key component of the success of *The BlueBox Project* and practicum course has been the support for the project from numerous individuals across our campus. The efforts of the staff and student interns in Creighton University's RaDLab and other members of Creighton's Division of Information Technology and Library Services have been instrumental in developing the solar version of the BlueBox as well as providing additional server resources and technical expertise. Likewise, the development of a dual-college, interdisciplinary, academic-service learning course with an international travel component included numerous details and complications that were only resolved by the efforts academic deans, department chairs, the Office of Academic-Service Learning, and the Global Engagement Office. Staff members at ILAC/CESI were crucial in the planning of the course trip as well as creating relationships with local schools and communities. Most importantly, the students in our first practicum course have been essential in extending

the technological capabilities and outreach of The BlueBox Project.

Our primary objective of the practicum course was to enhance the discipline-specific vocational knowledge of our students in our practicum course while also creating a dialogue surrounding development, poverty, culture, social injustice, and service. Our ability to structure the course as an academic-service learning course was essential in meeting the objective of addressing these "non-business" topics. The use of formal reflection techniques including group reflections, travel journals, and a reflective essay was critical for our students to process their experiences and emotions during and after the trip. While evening reflections and reflective essays fall outside of the typical business curriculum, these elements were crucial for our students to extend their learning of these topics in manner that will influence not only their future business decisions but also their lives.[32]

The support for *The Bluebox Project* extends well outside of our university. Our project would not be possible without the numerous organizations that have chosen to allow the free distribution of educational materials such as World Possible, Wikipedia, Khan Academy, Project Gutenberg, Moodle, and many others. The enthusiasm for the project and the feedback by our partner schools and organizations have allowed us to further develop the technology beyond our initial expectations. We look forward to further improving the technology and content by expanding the participation of the project with the involvement of additional areas of our university as well other universities and partners. HJE

Notes

[1] Michael Trucano, Carla Jimenez Iglesias, and Robert Hawkins, "Ten Trends in Technology Use in Education in Developing Countries That You May Not Have Heard About," *Edutech*, accessed April 27, 2017, http://blogs.worldbank.org/edutech/print/some-more-trends.

[2] MANAUS Consulting, "Assessing the Use of Technology and Khan Academy to Improve Educational Outcomes in Sacatepéquez, Guatemala," accessed May 15, 2019, https://www.manausconsulting.com/publications/2017/11/23/assessing-the-use-of-technology-and-khan-academy-to-

improve-educational-outcomes-in-sacatepquez-guatemala; Heidi Kurtic and Paula Kellerer, "Liberia Afterschool Programs: A Pilot Study Using KA-Lite in a Remote Rural County: Year One Report" (Doceo Center, Northwest Nazarene University, 2016).

[3] For examples of content, see www.oer2go.org, www.kiwix.org, and https://moodlebox.net/en/

[4] Pew Research Center, "Internet Seen as Positive Influence on Education but Negative on Morality in Emerging and Developing Nations," accessed May 15, 2019, https://www.pewglobal.org/2015/03/19/internet-seen-as-

positive-influence-on-education-but-negative-influence-on-morality-in-emerging-and-developing-nations/.

5 Clayton R. Wright, "5 Key Barriers to Educational Technology Adoption in the Developing World," accessed April 27, 2017, http://edutechdebate.org/2014-ict4edu-trends/5-key-barriers-to-educational-technology-adoption-in-the-developing-world.

6 David Acker and Lavinia Gasperini, "Education for Rural People: What Have We Learned?" *Journal of International Agricultural and Extension Education* 15, no. 1 (2008): 25-34.

7 J. Chittoor and S. Mishra, "Agricultural Education for Sustainable Rural Development in Developing Countries: Challenges and Policy Options," *Journal of Education and Learning* 6, no. 2 (2017): 119-132.

8 Pew Research Center, "Internet Seen as Positive Influence on Education but Negative on Morality in Emerging and Developing Nations."

9 S. Mitra, R. Dangwal, S. Chatterjee, S. Jha, R. S. Bisht, and P. Kapur, "Acquisition of Computer Literacy on Shared Public Computers: Children and the 'Hole in the Wall,'" *Australasian Journal of Educational Technology* 21, no. 3 (2005): 407-426.

10 Sugata Mitra, "Kids Can Teach Themselves," TED.com, accessed May 15, 2019, https://www.ted.com/talks/sugata_mitra_shows_how_kids_teach_themselves.

11 Laurent Dubois, *The Aftershocks of History* (New York, NY: Metropolitan Books, 2012).

12 Ibid.

13 Bridget Moseley-Williams and Richard Wooding, *Needed but Unwanted: Haitian Immigrants and Their Descendants in the Dominican Republic* (London, UK: Catholic Institute for International Relations, 2004).

14 In *The Aftershocks of History*, Dubois provides an insightful history of the Haitian side of the island. Mosely-Williams and Wooding document the origins and present circumstances of the Haitian and Haitian-Dominicans.

15 Mosely-Williams and Wooding, *Needed but Unwanted*.

16 Steven Gregory, *The Devil Behind the Mirror: Globalization and Politics in the Dominican Republic* (Berkeley and Los Angeles, CA: University of California Press, 2014).

17 Mosely-Williams and Wooding, *Needed but Unwanted*.

18 Steven Gregory, *The Devil Behind the Mirror*, provides a contemporary examination of the impact of globalization, Haitian identity, and politics in the Dominican Republic.

19 A primary reading for the course was Nicholas D. Kristoff and Sheryl WuDunn, *A Path Appears: Transforming Lives, Creating Opportunity* (New York, NY: Vintage, 2014).

20 Winston Tellis, "An International Service Learning Course in a Developing Country," *Journal of Jesuit Business Education* 2 (July 1, 2011): 31-46.

21 World Bank, "Atlas of Sustainable Development Goals 2017: From World Development Indicators," accessed May 15, 2019, https://doi.org/10.1596/978-1-4648-1080-0.

22 Gisela Cebrián, Marcus Grace, and Debra Humphris, "Academic Staff Engagement in Education for Sustainable Development," *Journal of Cleaner Production* 106 (November 2015): 79–86; Robert H. Bradley and Diane L. Putnick, "Housing Quality and Access to Material and Learning Resources within the Home Environment in Developing Countries," *Child Development* 83, no. 1 (2012): 76–91; Simon McGrath, "The Post-2015 Debate and the Place of Education in Development Thinking," *International Journal of Educational Development* 39 (November 2014): 4–11.

23 Joseph P. Shadle, Elaine Crable, and Hema Krishnan, "Integrating Ignatian Values into an International Executive MBA Immersion Experience," *Journal of Jesuit Business Education* 7 (July 1, 2016): 73-86.

24 Ibid.

25 B. Weis, "MGMT 5335/Leading with Emotional Intelligence" (Syllabus, Seattle University, Spring 2018). Cited by Nadèje Alexandre and Bill Weis, "Bringing Emotional Intelligence to the Jesuit Business Academy: A Program for Deepening the Conversation among Students, Advisers and Faculty," *Jesuit Higher Education: A Journal* 7, no. 1 (2018): Article 8.

26 See http://bluebox.creighton.edu.

27 Steve Corbett and Brian Fikkert, *When Helping Hurts: How to Alleviate Poverty Without Hurting the Poor . . . and Yourself* (Chicago, IL: Moody Publishers, 2014), 100.

28 Jo Ann Van Engen, "The Cost of Short-Term Mission Trips," *The Other Side* 36, no. 1 (2000): 20-3.

29 William Vaughan Taylor, "Short-Term Missions: Reinforcing Beliefs and Legitimating Poverty" (Master's thesis, University of Tennessee, 2012).

30 Kyeong Sook Park, "Researching Short-Term Missions and Paternalism," in *Effective Engagement in Short-Term Missions: Doing It Right!* (Pasadena, CA: William Carey Library, 2008).

31 Taylor, "Short-Term Missions," 118.

32 Maria A. Quijada, Catherine McGrath, and Aimee Wheaton, "Learning through Reflection in Management Education," *Journal of Jesuit Business Education* 7 (July 1, 2016): 119-136.