

BUILDING CONTEXT TO IMPROVE EDUCATIONAL OUTCOMES IN CURUNDU, PANAMA

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Panama has the highest per capita income in Central America, but the second worst income distribution in Latin America. Approximately one-fourth (25.8%) of the Panamanian population lives in poverty (The World Bank, 2015). Common to many urban centers, the Curundu neighborhood of Panama City is plagued by poverty, high unemployment, crime, and limited resources (M. E. Marquez de Rivera, personal communication, March 6, 2015). Although urban problems are noted in the community, the area is with hope of better things to come through the education of their youth. Central Educativo Marie De Poussepin (“CEMP”) in Curundu is affiliated with the Dominican Sisters of Charity—an order dedicated to helping disadvantaged youth worldwide. This school currently serves approximately 600 children ranging from preschool to the twelfth grade. There have been great strides in programming opportunities and in the number of individuals served by CEMP since it began in 2004. The needs within this barrio continue however, thus initiatives need to continue and expand to ensure the improvement in quality of life for the children and their families.

In March of 2015, during a visit from the Defiance College Honors Group, the principal of CEMP—Sister Rubiella—requested a survey of the families served by the school. The purpose of the survey would be to assess the ongoing needs of the community, focusing most especially on those needs pertinent to issues that may affect students’ academic achievement. Through collaboration with CEMP questions were written that would garner information about employment, income, the educational levels of members of the household, housing, health and nutrition, safety, access to books and educational materials, and characterization of the challenges people face as residents in Curundu.

While on site in Panama I interviewed adults representing eleven households served by CEMP. Each interview took one to two hours with translation from our liaison Maria Elena Marquez de Rivera. A majority of the interviews took place at CEMP before or after school hours, with two occurring in public housing adjacent to the school grounds. Of the eleven households interviewed five represented nuclear families, four were blended or step families, and two were female-headed single parent households. Moreover, of the eleven families there were an average of 5.5 people and three children per household.

The educational levels of the adults within the homes ranged from elementary to college with approximately one third having graduated high school or beyond, and with the average overall being the ninth grade. Educational levels did appear to impact full-time regular employment within households. Regardless of employment history or educational level all eleven adults interviewed had wishes for their children that surrounded completion of high school or higher education and employment. All parents/guardians viewed CEMP as their children’s gateway out of poverty and praises for the school surrounded reputation, continual growth, individual attention and appropriate discipline, close proximity, security, teaching English, snacks/lunch and uniforms. Although “likes” far outweighed the “dislikes” concerns involving CEMP mostly centered on the costs of supplies and books, as well as lack of programming for children with developmental disabilities.

Regarding health a majority of household members had seen a doctor within the past few years, with only three families having indicated an absence of regular health care. A wide variety of health issues were reported regarding the children of these households with the most common involving asthma, ADHD, and “bone” problems (lack of calcium). It was reported that the Children’s Hospital of Panama City provides excellent care for uninsured children on a sliding fee including a wide variety of specializations and services surrounding developmental disabilities, however transportation and schedules of working parents often times becomes an issue as children are dismissed from care after two or more *no show* appointments.

Often impacting a child’s health is nutrition. While protein appeared to be a staple within the households interviewed concerns were reported surrounding daily consumption of vegetables and fruits for essential vitamins and minerals. Of the households interviewed three families reported eating vegetables on a daily basis, four having vegetables 1-3 times a week, and four families never having vegetables. One adult interviewed commented vegetables were expensive, and another stated fresh produce was enjoyed only when brought to the home from rural relatives.

A variety of responses were received regarding the community strengths and problems and impact on education. Questions assessing home reading indicated a desire to increase the number of books available to children. Likewise programs providing creative ideas on how to increase reading between guardians and their children were also welcomed. In addition to reading many households mentioned the need for an increase in children’s after school programming.



The results of the survey were shared with the CEMP and as a result the school secured some donations for some immediate needs surrounding furniture for one household and latchkey programming for another family. Additionally the results will serve as an impetus for future possible collaborations between CEMP and McMaster Scholars regarding student retention through high school graduation, home reading programs, nutrition education, gardening, programming for developmental disabilities, and safe community programming for youth to name a few. CEMP has requested a continuation of the interviews in spring of 2017 to look for patterns that strengthen previously identified needs and to address any new trends that may arise that could serve as an obstacle to the school's future goals, interventions, and achievements.

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EARLY CHILDHOOD EDUCATION IN PANAMA

Taylor Gillig, McMaster Scholar, Panama 2015 – 2016

The objective of my project was to positively influence the self-esteem of children in the primary grades of two areas of Panama City. As a future early childhood teacher, I have learned it is important to find classroom activities that build the self-images of students, while creating a respect for individual differences and future goals (Lawrence, 2006, p. 101). High self-esteem correlates positively with the academic achievements of students (Kaniuka, 2010, p. 184). Community partners indicated the need to help children build positive self-images while promoting the academic goals of primary grade students. Our community partners have indicated that they believe such an initiative will serve to lower the drop-out rates in schools within impoverished areas of Panama City. In addition, the Biblioteca of Mananitas, and Centro Educativo Marie Poussepin (“CEMP”) of Curundu have supported initiatives to increase home reading as a means to increase academic success. Lastly, community partners have expressed a desire to introduce children to English words at an early age to increase future employability across various economic sectors in Panama. In furtherance of all of these objectives, I developed a lesson plan that encouraged children to create an *All About Me* book in both English and Spanish for the early primary grades of students in Mananitas and Curundu.



Students in kindergarten through the third grade at the Biblioteca of Mananitas, as well as the kindergarten and first graders of CEMP, created a book about themselves and what they wanted to be when they grow up. The first page of the book displayed a photo of each child taken on the first day of my project at each location. An individual student would tell me what they wanted to be when they grow up, I would write it in Spanish and in English on the blackboard, the student would stand in front of it, and we would take their photograph. On the second page students documented their likes and dislikes. The third page contained a fingerprint activity, where students could use their thumbprint to create a person and draw an image of what they wanted to be when they grow up. The next page consisted of an “I Feel...” assessment; and the last page focused on how students felt about school, family, home life and friends using “yes” or “no” questions with happy and sad smiley faces. I had included questions such as, “Do you like school?” “Do you like being at home?” and “Do you hear ‘I am proud of you’ from family, friends and teachers?” By asking these questions, it allowed me to see how students felt about their home and school lives.

The students were able to express to me what they would like to be when they grow up. A sampling of some of the students’ responses were doctor, policeman/woman, fireman, taxi driver, and ballerina. All students were provided the opportunity to complete the *All About Me* worksheet of Likes/Dislikes, “I Feel...” worksheet, and self-esteem smiley face assessment. Some students were also able to complete the fingerprint activity with individual artwork. In furtherance of the community’s expressed desire for increased English education, I replicated and distributed copies of the *All About Me* book in English.

The purpose of the *All About Me* book was to increase the students’ self-esteem by encouraging students to stay positive and reach for their goals. All the students completed the photograph and likes/dislikes pages. Some students were unable to complete the fingerprint activity pages due to time constraints. Additionally, the comprehension levels of some younger students impaired some of their abilities to fully complete the “I Feel...” assessment page. Moreover, some students did not want to complete the “I Feel ...” worksheet, or had completed it and placed it in their book bag prior to my request for return. As for the smiley face assessment, a majority of the students indicated they liked and enjoyed school, home and their friends/family. There were some results that were not accurate because—depending on their grade level—some students would just color in the smiley faces. All students were provided with the take home English pocket book.

Community partners indicated that they believed that this project effectively contributed to the articulated needs based upon the students’ pleasure in having their own book to take home. The CEMP school of Curundu requested in future years the project be expanded to upper grades to help all students focus on academic goal setting and staying in school. The data

gathered in this project will be of assistance to future McMaster Scholars who endeavor to bolster the self-esteem of children in these communities while promoting and increasing academic achievement.

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CONFLICT RESOLUTION IN PANAMA

Kenneth Miller, McMaster Scholar, Panama 2015 – 2016

Community partners in Panama have indicated that many Panamanian youth do not have the tools to handle conflict or peer pressure in their urban and impoverished communities. In an environment where gangs and illicit drug activity are prevalent, handling conflict through positive avenues and the avoidance of peer pressure are critical skills for Panamanian youth (Lambert, Roos, & Rinilla, 2010, p. 27). Contributing further to such issues is the incidence of domestic violence within the home, and inadequate supervision of minors (Lambert, Roos, & Rinilla, 2010, p. 4). Moreover, alcohol and tobacco are easily attainable for many Panamanian youth, as approximately 41% of minors between the ages 12-18 have used alcohol, tobacco, or other drugs (Gonzalez, et al., 1999, p. 11). For these reasons programming surrounding conflict resolution, peer pressure, and alcohol and tobacco avoidance was important to our community partners of the Biblioteca in Mananitas, and the Centro Educativo of Marie Poussepin (“CEMP”) in Curundu. My project was to provide students in these urban areas of Panama City with conflict resolution skills and tools to abstain from negative peer pressure so as to foster positive relationships and healthy life choices.

In Panama, I worked with fourth-through-twelfth grade students at the Biblioteca and CEMP. Together we discussed steps to positively resolve conflicts, including: understanding the situation, finding the common ground, and implementing a solution. To demonstrate these themes we utilized different activities such as an anger ball toss, and an arm wrestling activity. In the anger ball toss activity, I started with the phrase “I feel angry when...”, then the next student had to repeat my statement and make their own. The student would then toss the ball to anyone he or she desired, and the process started again. This activity helped students work on active listening skills, and helped students understand problems from other people’s perspective. The arm wrestling activity helped students work on finding the common ground and problem solving. In partners, students had thirty seconds to see who could win more arm wrestling competitions to earn points. It was presented this way to make this activity seem like a competition, rather than an opportunity to collaborate for a positive solution. Then, another McMaster scholar and I demonstrated how we could take turns winning each arm wrestling competition to manipulate the game in a way that benefited both of us. Further, I undertook an educational initiative to teach students about the health risks associated with alcohol abuse and tobacco. Finally, I provided tips on how to handle peer pressure by making an excuse or having the courage to separate themselves from the situation. In the aforementioned activities, students were presented with real life situations, and the opportunity to use their newly learned skills.



This project provided the students in two communities of Panama City with a framework on how to handle conflict and peer pressure. Faced with the significant threat presented by gangs, illicit drug use, and domestic violence, this project is intended to serve as a foundation upon which to help eradicate such issues, and provide children in Panama with the opportunity to live safer and healthier lives. Strategies to avoid peer pressure can be used to combat a variety of problems that may face

youth within impoverished urban areas of Panama. Additionally, it is my desire that students will demonstrate their newly-learned conflict resolution skills in a manner that promotes a positive cultural change beyond the scope of the schools within which we work. Finally, the data gathered in this trip will assist community partners and future McMaster Fellows and Scholars as they endeavor to further serve this community.

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PROMOTING READING IN PANAMA

Catlyn Pavel, McMaster Scholar, Panama 2015 – 2016



According to the principal at Centro Educativo Maria de Poussepin (“CEMP”), Curundu currently lacks a culture that promotes the importance of reading. Additionally, many children’s parents only possess a second or third grade reading level. Accordingly, our community partners at CEMP have expressed a desire for parents to become more involved in their children’s education, and the implementation of an in-home reading program. Through these initiatives, CEMP aims to improve the community’s interests and skills in reading, as reading is the foundation for educational achievement and has the potential to improve the community’s quality of life.

The first part of the project was to excite children’s reading interest while also improving reading skills through in-home techniques used by parents or guardians (Bridges, 2015, pp.

44-45). Indeed, through reading, children improve upon their vocabulary, communication and writing skills, memory, focus, and their ability to reason and think logically about situations (Bridges, 2015, p. 152). Additionally reading fiction helps children with imagination and empathy (Bridges, 2015, p. 110). Secondly, this project sought to build parental reading skills as a result of assisting and practicing with their children, as even “parents with low literacy skills benefit from engaging in literacy activities with their children” (Larrotta & Ramirez, 2009, p. 629).

This project consisted of a presentation about the benefits of reading, the skills that reading involves, and strategies to help children based on research; as well as providing activities that parents could do with their children to enhance reading skills. Through these initiatives we hoped to instill within young children a curiosity and excitement for reading, along with the development of reading skills by providing parents with tools to be used within the home.

To further this objective, we held a workshop in which each parent or guardian was provided a packet of home reading activities. The packets contained rhyme cards consisting of words and pictures, a series of books, post-it notes for labeling items in the home, a screen to create texture while writing, and word sorting activities with pictures on one side and the word on the other. There were also alphabet flash cards within the packet accompanied with yarn to add a texture to the letters. At the end of the workshop, the parents chose an activity and discussed how they would potentially use the activity with their children. Then, I explained the purposes for each of these activities and emphasized the importance of encouraging reading with their children.

At the end of the workshop surveys were administered to determine: if parents and guardians felt comfortable assisting their children with reading at home, if they read for fun at home, and if they planned on using the activities within the packets with their children in the future. In those surveys, parents reported that they felt comfortable helping their children with

reading, and the majority of parents reported that they were currently helping their children read, and reading themselves. I then provided parents with a list of activities that were in the packet, and asked them to circle which ones they would use and which ones they would not. The parents indicated a preference favoring the rhyme cards and word sorts over the screens and post-it notes.

Overall, I found that parents who attended the workshop were eager to learn strategies to help their children improve their reading. In the future, I believe that having age-appropriate, innovative, and fun in-home strategies to motivate reading similarly with older children. It is my desire that this project helped remedy the needs expressed by our community partners, and promoted reading among children and their parents alike. The data collected in this initiative will assist community partners and future McMaster Scholars as they aim to increase academic achievement in Panama in order to expand the opportunities of our community partners more generally.

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WATER QUALITY TESTING IN PANAMA

Susanna Stoepfel, McMaster Scholar, Panama 2015 – 2016

According to the World Health Organization, as of 2015, more than eleven percent of rural Panamanians lacked access to improved drinking water (World Health Organization / United Nations Children’s Emergency Fund Joint Monitoring Programme for Water Supply and Sanitation, 2015). Improved drinking water is defined as “one that, by nature of its construction or through active intervention, is protected from outside contamination, in particular from contamination with fecal matter” (World Health Organization / United Nations Children’s Emergency Fund Joint Monitoring Programme for Water Supply and Sanitation, 2015). This is a problem because many health conditions can result from unsafe drinking water. Worldwide, unsafe drinking water results in transmission of diarrhea, dysentery, hepatitis A, and typhoid (World Health Organization, 2015). According to the CIA Factbook, the most prevalent food or waterborne diseases in Panama are from bacterial diarrhea (Central Intelligence Agency, 2016).

The purpose of my project was to create a baseline of information regarding water quality in two locations in Panama. Tests were conducted using Hach surface water test kits to detect levels of ammonia, phosphates, free chlorine, nitrates, and bacteria. During the project, we tested water from the rural village of El Congo, Cocolé, as well as from Centro Educativo Marie Poussepin—a school located in the neighborhood of Curundu in Panama City. We then conducted an analysis of the water samples at a work space at our hotel in Panama City. Finally, we compiled the results of our tests and delivered them to our community partners.



In Centro Educativo Marie Poussepin, three locations were tested, including a school shower, school handwashing station, and a community pump. The tests revealed that on that day all three sites tested negative for bacteria and that ammonia, phosphate, chlorine, and nitrate levels were normal. In the rural village of El Congo, fifteen sites were tested, including a school, the local creek, two ponds, a car washing station, and several homes. The tests revealed two positive bacteria tests and high levels of nitrates in six locations. Bacteria contamination is a problem because it can lead to diarrhea and other waterborne illnesses. Nitrate levels become problematic when they exceed 10 mg/L. Two locations were particularly problematic because they possessed nitrate levels as high as 17.6 mg/L. Two other locations had nitrate levels close to this threshold, testing at 8.8 mg/L. High nitrate levels are a problem because they can

lead to a condition known as blue baby syndrome, or methemoglobinemia which affects the transport of oxygen throughout the body, particularly in the elderly, infants and pregnant women. In addition, one household reported having worms in the water, although none were observed on the day of sampling.

Based on the results of the tests, our team was able to give recommendations to the community partners for how to utilize the results. In Centro Educativo Marie Poussepin, none of the water tested high in any of the areas that were tested. We distributed this information to our community partners and recommended that no changes be made to the water. In the rural village of El Congo, however, high levels of nitrates and bacteria were found in some locations. With regard to the nitrates, there is not currently a low cost method to remediate the water so that it can be considered safe to drink. Accordingly, in locations where the nitrate levels were high, we recommended that alternate sources be utilized. Many of these locations also tested positive for bacterial contaminants. Therefore, we further recommended that the water not be consumed. One of the issues with water that has high nitrate and bacteria levels is that it is difficult to remove one without increasing the other. A very typical method of eliminating bacterial contaminants is to boil the water, which kills the bacteria. The problem with boiling water that is high in nitrates, however, is it further increases the level of nitrates (McCasland, Trautmann, Porter, & Wagenet, 2012). As a result, there were three locations from which we advised the village to abstain from collecting water. Moreover, we advised community partners to continue to abstain from consuming water from creeks or ponds.

In addition to these recommendations, we were able to report to our community partners that on the day we tested, we did not find issues with more than five of the locations that were tested. Coincidentally, an outside organization had offered to replace the village water tower if it could be shown that the water could be consumed. Because a majority of the sites had tested normal, our results gave the organization the information they needed to move forward with their decision to replace the water tower.

Because the purpose of this project was to provide a baseline water analysis, continued research will be necessary in order to observe trends in the quality of the water. It is the desire of the team and our community partners to continue testing in all previously tested areas as well as adding new testing sites. In the future, it will be of particular importance in the village of El Congo to track the bacteria and nitrate levels to monitor any changes. Moreover, if abnormal levels persist, we must further explore the possible sources of contamination. In addition to continued testing, it is also the desire of the team and the El Congo Village to educate the community members about the dangers of high nitrate and bacteria levels as well as the importance of sanitation. Continuing research and introducing an education component will likely reduce the prevalence of waterborne illness in Panama.

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CPR AND FIRST AID TRAINING IN PANAMA

Alexis Walker, McMaster Scholar, Panama 2015 – 2016

After traveling to Panama and talking to the community partners, it was apparent that the rural areas of Panama did not have accessible and adequate emergency health care service. Moreover, community partners expressed a need for an educational initiative with respect to emergency response techniques. Accordingly, my project provided training for Cardiopulmonary Resuscitation (“CPR”) and First Aid for these communities. I provided information on CPR and first aid—including wound care, bug bites, heat related illnesses, splinting and immobilization—to the village of El Congo, the Centro Educativo Marie Poussepin of Curundu School, and the Biblioteca in Las Manitas. In preparing for my project, I learned that ischemic heart disease is the leading cause of premature deaths in Panama followed by stroke. Moreover, I learned that many heart attack victims do not receive CPR because of a general unfamiliarity with the technique. The goal of my project was to educate our community partners about these emergency response techniques so that they will be prepared in case of an emergency.



Because this was the first McMaster trip to Panama, it was important to work closely with our community partners. I first researched common health issues and diseases in Panama and their relevance to this project. After researching those conditions, I surveyed the communities within which we work to gain an understanding of the injuries and conditions that they experience. Through this process, community partners suggested that I provide information on basic fire safety precautions. I undertook specific efforts to make my lessons interactive, in order to overcome the difficulties inherent in communicating with those who speak a different language, and so that the information would be better retained. In the sessions, I demonstrated how to perform CPR on an adult and child, the Heimlich maneuver, and the basics of assessing a person’s consciousness when providing care. I also demonstrated how to care for more severe wound cases, heat related illnesses, bug bites, and other acute injuries such as sprains and fractures. I also demonstrate how to immobilize and splint sprains and fractures.

I presented my training at the Biblioteca in Las Manitas, the Centro Educativo Marie Poussepin School of Curundu, the Village of El Congo, and the Centro Educativo Marie Poussepin School of Curundu. I conducted multiple sessions with students ranging in age from kindergarten to the twelfth grade. To measure the participants’ retention of the information I presented, I provided post-tests that reflected what was taught at the specific locations. Because I served individuals ranging from kindergarten children to adults, sessions were designed based on the needs of the audience. Results from the assessments demonstrated that the participants in the training sections successfully retained a large majority of the information I shared.

I maintain that through this project I was able to successfully lay a strong foundation for future McMaster Scholars to build upon. Because the rural areas of Panama tend not have accessible and adequate health care, future McMaster Fellows and Scholars will be challenged to continue to devise community-based strategies to fulfill the needs of our community partners. Although this project serves as the foundation for this initiative, it is important to continue to implement this project and build upon it, and to continue to share this vital information with our community partners.