

ADVANCING HUMANITY IN CAMBODIA

Learning Community

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DETERMINING THE EFFICACY OF MCMASTER INTERDISCIPLINARY LEARNING COMMUNITIES AS A PEDAGOGY: AN INTERIM REPORT

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The McMaster School recently articulated the need for evidence to determine the impact of participating in the McMaster Scholars Program. During the 2008-2009 academic year, the first year of a 2-year study was initiated with undergraduate students at Defiance College selected as McMaster Scholars. These scholars participated in the Belize Learning Community, the Cambodia Learning Community, or the New Orleans Learning Community. Data collection instruments were developed in collaboration with Dr. Catharine O'Connell former academic dean and vice-president at Defiance College and Professor Jeffrey Weaner, professor of and social work developed by the Association of American Colleges and Universities (AAUP), within their initiative, Liberal Education and America's Promise (LEAP), the Defiance College learning outcomes and the aims of the McMaster School for

Advancing Humanity. A mixed methods approach was utilized. The purpose of this article is to introduce the study, provide an overview of the research design, and discuss initial findings.

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The mission of the McMaster School for Advancing Humanity is to educate students for responsible citizenship, to produce global citizens who understand the importance of democracy and individual liberties in improving the human condition world wide and to encourage graduates to be civically engaged within the profession that they choose. Clearly, to work toward the fulfillment of the mission of the McMaster School, students must be provided with the opportunities to learn and practice specific skills, and develop capacities and knowledge which will allow them to be productively, civically engaged as they embark on their professional careers.

A pedagogical model has been developed and refined within the McMaster School to address the skills, knowledge and dispositions that students must obtain and practice in order to fulfill the mission. This model consists of the creation of an interdisciplinary learning community comprised of student scholars, faculty fellows and community partners. It is within this framework, that students engage in what the Association of American Colleges and Universities (AAC&U) describe as high impact practices. These practices include undergraduate research, collaborative assignments and projects, diversity/global learning, community-based service learning, common intellectual experiences, and learning communities.

Student engagement in these high impact practices result, as reported by students on the National Survey of Student Engagement (NSSE), in gains in learning and personal development. In addition, the NSSE data suggests that students engaged in high impact practices tend to persist at higher levels than non-participating students. (Kuh, 2008, Brownell & Swaner, 2009). There is also evidence to suggest that students, engaged in high impact practices during the undergraduate experiences tend to be more involved in civic activities when entering their chosen professions (Strayhorn, 2009).

Additionally, Kuh (2008) reports the high impacts practices result in deep learning as opposed to surface learning. Deep approaches to learning are important because students engaged in deep learning tend to have higher academic achievement, are able to generalize and transfer information more readily than students engaged in surface learning.



In reviewing the literature pertaining to the proven outcomes of high impact activities, Bronwell and Bailey (2009), report that the data from the research indicates that engaging students in high impact practices which are carefully designed and implemented result in potentially greater impact on student learning and success. According to Kuh (2008), institutions have been unsystematic in the implementation and utilization of high impact practices.

The McMaster Interdisciplinary Learning Community Model has been the pedagogical tool systematically utilized to engage students in high impact activities while meeting the aims of the McMaster School for Advancing Humanity at Defiance College. These aims include to critically examine the root causes of human suffering through academic and applied research of systemic factors (religious, political, social, educational and/or environmental) that impede human progress; to give students the knowledge and capacities to be active world citizens and to view themselves as members of the world community; and to contribute actively - through sponsored scholarship and service to the improvement of the human condition worldwide.

The McMaster School has been intentionally designing and implementing, what the AAU&C describe as high impact practices. Within the Belize, Cambodia and New Orleans Learning Communities students are actively engaged in community-based undergraduate research with faculty mentors,

work with peers and faculty on collaborative assignments, share common intellectual experiences and integrate all of the above within diversity/global learning. The purpose of this study was to determine if student participation in these interdisciplinary learning communities, built around high impact activities, result in achieving desired outcomes. Specific research questions guiding the investigation included: (a) What influence does participation in a interdisciplinary learning community have on acquiring the capacity to conduct undergraduate research? (b) What meaning do McMaster Scholars make of their participation in McMaster Learning Communities? (c) What is the conquence between the aims of the McMaster School for Advancing Humanity and the actual learning as perceived by McMaster Scholars? and (d) How do McMaster Scholars understand their experiences with community-based research?

METHODOLOGY

Research Context

The McMaster School for Advancing Humanity is the home for the signature fellows and scholars program at Defiance College. It was established with a gift from the McMaster family in 2002. The School “serves as a catalyst for innovative, interdisciplinary, community-based work by creating and supporting opportunities for teams of faculty, students, and staff to use their academic and professional skills to address community needs” (Defiance, n.d.).

Participants

Twenty-six undergraduate students were invited to participate in the first year of this study. Each student had been selected to be a McMaster Scholar during the 2008-2009 academic year and were either of member of the Belize, Cambodia or New Orleans Learning Community.

Student scholars participated in high impact activities within the learning community structure during the fall and spring semester of the 2008-2009 academic year. Each learning community was lead by faculty selected as McMaster Fellows for this academic year. The participants were ranked as sophomore, junior, and seniors and were distributed among ten academic majors. Twenty-one of the participants were female and five were males.

Data Collection

Data was collected using two researcher-designed instruments, the McMaster Scholar Capacity Measure (MSCM) and the McMaster Scholar Reflective Narrative Instrument (MCFI). The McMaster Scholar Capacity Measure (MSCM) consists of a 21-item likert scale. The 21-items are statements pertaining to undergraduate research, intercultural competence, civic

engagement, teamwork, and democratic practices. The McMaster Scholar Reflection Narrative Instrument (MSRI) asked participants to respond to four guiding prompts aligned with their research and learning community activities. These prompts were meant to elicit a narrative response from the scholars addressing their perceptions of intercultural competence, values associated with civic engagement, values aligned with community-based research, and teamwork. The MSCM has both form A and form B, as does the MSFI. Scholars completed form A of the MSCM and the MSRI at the beginning of the fall semester during their initial experiences within the interdisciplinary learning community and prior to implementation of their community-based research projects. Scholars completed form B of the MSCM and the MSRI during spring semester following the implementation of the community based research at either an international or domestic research location.

Procedures

During week five of the fall semester, I met with the six McMaster Fellows who were leading interdisciplinary learning communities during the 2008-2009 academic year and explained the purpose and focus of this study. They agreed to participate in the study by assuming the responsibility for administering the instruments with the scholars in their learning communities. They were provided with a script to read prior to distributing the data collection instruments and a set of directions for collecting the completed instruments. The script contained directions for completing the instruments and indicated that the scholars were not to place any identifying marks on the instruments. Scholars were to complete form A of both the MSCM and the MSRI. The McMaster Fellows were directed to deliver the completed instruments to an identified department administrative assistant in the envelope provided. The outside of the envelope was to remain free of any identifying marks.

DATA ANALYSIS

Data from the McMaster Capacity Measure was analyzed using descriptive statistics. The mean and standard deviation were calculated for each item on the survey as well as for the participant group.

Data from the written reflection were read and themes were established using the constant comparative method (Straus & Corbin, 1998) with a focus on the utilization of content analysis. The written responses were reread and each response was categorized under a particular theme.

DISCUSSION

Upon initial analysis of the data from the McMaster Scholar Capacity Measure and McMaster Scholar Reflection Instrument, several trends and themes have emerged. These trends and themes appear to address the resulting influences of participation, perceived levels of actual learning, and perceived developed capacities as a result of participation in McMaster Interdisciplinary Learning Communities. The data appear to suggest that scholars perceive themselves as less than competent within their disciplines prior to be engaged in the actual research process. The data also suggests that scholars perceive themselves as more competent following the implementation of their research projects at the research sites. Furthermore, the data collected following the scholars' two-semester participation in the interdisciplinary learning communities suggests that students can see themselves as being active in service to others when they entered their professional lives. Themes of increased intercultural competence and the increased value of teamwork also appear to be emerging from the data.

In the AAC&U, *High-Impact Practices: What They Are, Who Has Access to Them, and Why they Matter*, Kuh (2008) reviews the decades of research that indicates that participation in certain high-impact practices impacts students in the areas of academic performance and personal development. The McMaster Interdisciplinary Learning Communities meets the criteria of a high impact practice and at the juncture of this study the preliminary data supports that participation in a McMaster Interdisciplinary Learning Communities impacts McMaster Scholar academic performance and personal development.

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APPRECIATING DIFFERENCES AND MANAGING CONFLICT: APPLYING THE MBTI AT THE CAMBODIAN WOMEN'S CRISIS CENTER

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The purpose of this project was to provide the staff of the Cambodian Women's Crisis Center (CWCC) with strategies for addressing problems that may arise when conducting personnel evaluations. The need evolved from previous work conducted by McMaster Fellow Jeff Weaner through his project on staff evaluation. A concern was expressed by agency administrators as to how to best address an employee's disagreement with an evaluation and how one should respond to other forms of conflict. The challenge thus became to find culturally relevant techniques for conflict management and resolution that can be presented in a training session for CWCC supervisors and administrators.

LITERATURE REVIEW

A review of the literature supported the usefulness of the Myers-Briggs Type Indicator (MBTI) as a tool for identifying personality and leadership style differences that could be sources of conflict and tension among staff. Jacob & Shoemaker (1993) state, "the use of personality types applied to interpersonal relationships at work can help improve those relationships, reduce stress and increase both teamwork and productivity". In fact the *MBTI Manual* (Myers, McCaulley, Quenk, & Hammer, 1998) explains "knowledge of individual differences will help teams identify the particular talents and gifts that each member brings to his or her task; and this knowledge can help reduce conflict by reframing potential sources of misunderstanding as natural individual differences".

Additionally, studies of cultural differences in conflict resolution revealed that while individualistic cultures, such as the U.S., Canada, and Australia prefer "direct and assertive methods when resolving conflict" (Holt & DeVore, 2005, p. 170) members of collectivistic cultures, "such as the east Asian nations, ...are more likely to favor obliging or avoiding conflict management styles using indirect speech codes" (Brew & Cairns, 2004, p. 333). The research indicated that "individuals in collectivistic cultures prefer strategies that 'save face' ...compromising, in which one gives up some of one's needs, ...given that the needs of the group supersede one's own....[and] prefer problem solving more than individualistic cultures" (Holt & DeVore, p.182.) Further investigation of the Myers-Briggs Type Indicator as useful across cultures revealed that the instrument has been utilized in about thirty

countries and is available in twenty-one languages (The Myers & Briggs Foundation, 2009). However, Khmer, the primary language of Cambodia, is not one of the translations. Studies indicate that across cultures, the personality type preferences are “appropriate and applicable.”

People in different cultures report that the descriptions of the individual preferences make sense to them. They find value and usefulness in using type concepts in various ways, for example to improve interactions and communication between diverse individuals and within groups. (The Myers & Briggs Foundation, 2009).

Thus, application of the Myers-Briggs Type Indicator as a tool that could lead to effective problem solving and conflict resolution, while operating within cultural norms and practices, appeared promising.

Methodology would prove challenging. The Myers-Briggs Type Indicator is a lengthy inventory, as Form G consists of 126 questions. An alternative to the MBTI is the Keirsey Temperament Sorter which consists of 70 questions and is self scoring (Keirsey & Bates, 1984). This alternative was selected as more practical for ease of translation. The test was administered to seventeen (17) staff members at the Phnom Penh office of the Cambodian Women’s Crisis Center and to fourteen (14) staff members at the Siem Reap office. While a trial administration of the translated test was taken by the CWCC executive director and interpreter, both requiring approximately thirty minutes, their experience did not prove to match those of the CWCC staff. Administration and self-scoring ranged from 30 to 65 minutes and seemed to reflect the varying levels of education and literacy among the employees.

Interpretation of the scores was conducted with the use of a power point presentation and accompanying handouts that had been translated to the Khmer language. The staff was instructed as to the four dimensions of the MBTI:

- 1) Extravert/Introvert (E/I) which describes one’s preferences for interacting with their environment and from where one draws energy.
- 2) Sensing/Intuitive (S/N) which indicates one’s preference for taking in information, from their five senses or their sixth sense.
- 3) Thinking/Feeling (T/F) describes how one makes decisions, with objective analysis or based on personal factors and values.

- 4) Perceiving/Judging (P/J) is the dimension that determines one's preference for approaching the world, flexible and spontaneous versus structured and organized. (Myers, et.al, 1998; Jacob & Shoemaker, 1993).

Upon observation, the participants appeared to understand the interpretation of the scores. There was laughing as well as side conversations that seemed to indicate that the personality descriptors were accurate. When the individuals who were laughing were asked through the interpreter, "does that describe you?" the answer was a resounding, "yes!" The participants were then encouraged to share their typology with each other and to consider the implications of the differences for working together. "Once you know and validate your type, you can begin to extend your type exploration to examining other people, their preferences, and their types. The insights you gain into how others think and act can be invaluable" (Jacob & Shoemaker, 1993).

Examples were given as to how similar types may "click" and seem to reach an agreement or understanding more readily. Opposite types may tend to disagree more frequently and struggle to reach an understanding or consensus. Decisions, however, may be best made when varying perspectives are considered and discussed. "Diversity enhances performance because the team can exercise a balance in their approach that greatly



improves their success...although diverse perspectives are needed, they can and often do lead to conflict" (Clinebell & Stecher, 2003, p. 369). Thus appreciating and capitalizing on the diversity of the staff was encouraged.

A quick survey of the Siem Reap office staff found that their typology differed from statistical data of the general population. Of the fourteen staff, 8 (or 57%) were Extraverted and 4 (29%) were Introverted. Two were "X" or equally balanced on the dimensions. (Taking the longer form of the MBTI might distinguish the preference more clearly.) Keirsey and Bates (1984) report that 75% of the population is Extraverted and only 25% are Introverted.

There were 7 Sensing (50%) and 6 Intuitors (43%), with 1 "X". It is estimated that 75% of the general population are Sensing and 25% are Intuitors (Keirsey & Bates, 1984). Three (3) were Thinking (21%) and 10 were Feeling (71%), with 1 "X", or balanced. The general population is 50-50 on this dimension. And finally, there were 12 (or 86%) Judging and 1 (or 7%) Perceiving, with 1 "X". "Estimates are that about 50-60% of the population prefers Judging while the rest prefer the Perceiving function...Some samples reported... more than 90% Judging, but none more that 70% Perceiving" (Jacob & Shoemaker, 1993, p.3). In this dimension, the Siem Reap staff seemed to reflect the 90% Judging group. The small sample may account for the differences, but the literature also suggests culture may influence typology. "Each culture defines appropriate acceptable ways for people to express themselves, including ways to express their type preference. Cultural norms and expectation guide the expression of type. As a result, preferences may not look the same in different cultures" (The Myers & Briggs Foundation, 2009)

In conclusion, it appears that the MBTI can be a useful tool for the staff of the CWCC. As one begins to understand type, the ability to communicate about differences and understand the unique contributions of the varying types will serve to enhance relationships and productivity in the work environment. However, "the MBTI is not meant to be a panacea. We do not believe that the MBTI alone can explain all personality preferences, differences, strengths, and conflicts. We do believe that it is an easily learned tool that can help provide a greater understanding of the human dimension" (Jacob & Shoemaker, 1993)

The CWCC employees now have a means in which to discuss areas of tension and conflict. Supervisors also have a tool to utilize in staff evaluation as a non-judgmental way to address areas for potential growth and development. Each individual can be challenged to be more aware of

himself/herself as they interact with others and, perhaps, learn to modify and adapt their behavior accordingly. In addition, further training could be offered to apply the Myers Briggs Type Indicator in teambuilding, leadership development, and for matching employee gifts and preferences to agency needs and programs.

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PROPERTY RIGHTS AND LAND SECURITY IN CAMBODIA

Nicholas Weber, McMaster Scholar

INTRODUCTION

During the 2007-08 school year, the McMaster Cambodia learning community began a project to discover the quickest and most cost effective method of building huts in Cambodia. As a returning McMaster Scholar who was involved with this program last year, I decided to continue this task and see it through to completion. For my project I planned to construct two huts in Cambodia for the purpose of studying their construction from beginning to end. This information would then be compiled into a manual for use by future McMaster Scholars. During the course of this project, I also became interested in discovering why there was a need for cost effective housing in Cambodia. My research led me to an interesting problem which has resulted in a growing crisis and a rising cause of homelessness in Cambodia. Disputes over land ownership and the confiscation of private property by the national government and corporate entities has become a major crisis. For the 2008-09 Cambodia learning community, I decided to continue the hut project, making the issue of property rights and landownership my academic focus.

LITERATURE REVIEW

Traditionally, property rights in Cambodia have been based on a community ownership method. Farming alone and adding improvements to a patch of land entitled one to ownership (Williams, 2008). The Khmer Rouge rise to power completely changed this system. During its reign, all records of property ownership were destroyed and a forced evacuation of all citizens to the countryside began (Williams, 2008). After chasing Pol Pot's regime from power in 1979, the Vietnamese began an 11-year occupation of the country. Many of the previous property owners either fled the country or had been one of the over 1.5 million to die in Pol Pot's bizarre social experiment thereby leaving the property ownership system in complete disarray. The switch from one communist regime to another made little difference concerning property rights. Under the occupation, the best tracts of land were awarded to the wealthy and powerful. As most Cambodians could not afford to participate in this land system which favored the affluent, an unofficial squatter system developed alongside it (Asian Development Bank, n.d.).

While far from perfect, this simple system allowed those who had been displaced to find new land and settle it with little difficulty. The 1992 Land

Law was established in an attempt to inform the public about the rights and obligations of property owners. This law declared that those who had lived on a swath of land and developed it for a minimum of five years were able to apply for legal ownership with the national government (Williams, 2008). While a step in the right direction, this legal action would later serve to create almost as many problems as it had solved. Ambiguous wording and legal loopholes in this law would be exploited in the coming years for the purpose of stripping Cambodians of their land. In 1993 Cambodia became a constitutional government, bringing stability back to the country. This stability made the country much more attractive to business interests around the world that now looked at Cambodia as an emerging business opportunity. These business interests, both foreign and domestic, had a common need: land for development. This was the beginning of the property rights and land crisis that plagues the country to this day.

Government officials accused of corruption have used their positions of power to exploit the system in favor of foreign business interests (Levy & Scott-Clark, 2008). While the 1992 Land Law became the foundation of Cambodian property ownership, it also created new problems. This law is charged with disenfranchising the thousands of refugees returning to the country in the 1990's (Levy & Scott-Clark, 2008). Many Cambodians cannot afford the registration fees and still many more are unaware of their rights as property owners or even of the 1992 Land Law's existence. When Cambodians are asked to show proof of their land ownership the vast majority are unable. As a result they must forfeit their land to the government. This property is then sold to foreign and domestic business interests who will use the land to build businesses, restaurants or resorts.

More and more, Cambodians are left homeless each day as a result of increased land confiscations. As their property and livelihood are taken from them, many are left with one of two options; move farther into the countryside to find new land or relocate to one of the urban centers in the country in order to find work. In either case the displaced people typically find they no longer have access to schools, hospitals, income or even political representation. In effect, they have become non-citizens in their own country. It is an unfortunate reality that Cambodia's newfound prosperity has created more victims and widened the gap between the rich and poor. Cambodia, it seems, has become a country for sale to the highest bidder.

METHODOLOGY

During the 2007-08 McMaster Cambodia Learning Community trip, Scholar Candice Schmitt started an instructional hut building manual as a part of her project in order to determine how to most effectively carry out hut construction. This manual was to serve as a reference material for any students who wished to continue this project in the future. As I was involved with this project last year, I wanted to see this project through to completion. In an effort to expand on her work, I planned to build two huts; one just outside of the capital city of Phnom Penh and the other in the rural village of BaPrey. The purpose of this was to evaluate the cost of materials, local structural needs, and building style of the two homes and determine the differences between them. This information would then be used to update and complete the previous manual for the purpose of creating a simplified guide that showed step-by-step instructions for hut construction that even a lay reader could understand the process. Examining the subject matter in this manner would greatly simplify this project, allowing future McMaster Scholars to continue the project.

When I first began this task, I divided the methodology into two separate elements. The first would focus on information related to the building of the huts; the other would be my academic research concerning property rights. Separating the research in this way allowed me to work toward clearly defined outcomes. It was my hope that as the project progressed, my research into both subjects would eventually overlap, allowing me to see how one factor in the project affected the other. This method shed light on the



cause and effect relationship between building the huts and the disputes over land and property rights.

Candice Schmitt's original hut manual provided a solid foundation for my project. In it she had compiled all the data she gathered regarding hut construction. This manual contained a wealth of useful information, but at the same time, there were areas where important information was missing. Difficulties in communication outside her control during the project last year resulted in confusion, which prevented the project from going forward as she originally planned. For example, since the group did not directly obtain or purchase the building materials, they were forced to ask one of the construction workers about the supplies used and their approximate costs. In addition, the hut size was unclear which complicated the process of using the information from the previous project and applying it to mine. It was my hope that after my project was complete that I could fill in the previous manual's missing information and further refine it.

The other half of my methodology involved researching the ongoing problem of land disputes and property confiscation. This work was largely academic in nature with a great deal of effort spent investigating the various laws and documents (such as the Land Laws of 1992, 2001 and the Cambodian Constitution signed in 1993) that guarantee the rights of Cambodian property holders, as well as how these same documents are being used by those in power to justify property seizures. Through this research, I had learned that property disputes were most frequent and severe in growing urban areas, where the need for land for expansion is the greatest.

This research on property rights had an unexpected effect on my final project. After our community partner from the Southeast Asian Children's Mercy Fund learned about my work regarding land seizure and forced evictions, concerns were raised about building one of the huts outside of Phnom Penh. Specifically, it was feared that this hut might be built on disputed property, which in Cambodia can simply be land that is not properly registered with the government by the owner. It is very common for a family to live on disputed or unregistered property for years without ever knowing they do not have proper legal ownership of it. As a result, the individual who actually holds the government title to the property might step in and reclaim the land. If this happened, that person would own the new hut built on their property, and would either evict the residents or charge them rent to live in the home built for them. If this happened, we would actually be doing more harm to the family than good. After carefully evaluating the situation, I made the decision to build both huts in the rural village of BaPrey.

DISCUSSION

One of the most important lessons that I learned in my undergraduate years was that planning a project and actually carrying it out are two completely different things. During my 2008 trip to Cambodia I realized that no matter how carefully or thoroughly one planned their project before the trip, circumstances almost always changed when they arrived on the ground. It is the ability to adapt to changing circumstances that becomes the determinant factor of a project's success or failure, and this year was no exception. For my part, I tried to do as much preparation as possible in the months leading up to the trip. In order to more completely assess the process of building these huts in Cambodia, I assumed complete responsibility for all the financial costs of this project. This helped in gaining a greater understanding of where, and for what, money was being spent on. Placing the financial responsibility for the project on myself also served as a healthy incentive to do a full and complete accounting of how the funds were allocated.

Before leaving for Cambodia I created a budget, as well as a list of required construction materials, based on the information found in last year's hut manual. In order to make sure these estimates would work for my project, I created diagrams of the huts that would be built, leading me to conclude that a 4x5 meter hut was the most practical model. After designing the construction plans, I met with interested parties, gave presentations, and in general tried to generate interest among local builders and organizations to raise the money necessary to complete the two huts. Talks with the owners of the local Lowes and Menards resulted in the donation of tools for the project. In addition to the tools, I managed to raise over \$1400 to fund the purchase of building materials.

All of these preparations served to make the project run much more smoothly this year. However, there were still plenty of unexpected surprises that would test my ability to adapt on the ground. The first change to my project involved finding the construction materials for the huts. The original plan was to buy the supplies in Phnom Penh and then hire a truck to take them to BaPrey. However, what I had not planned for was the sharp increase in the cost of construction materials as a result of increased business investment and development. This forced me to take an almost two hour detour out of town to acquire these items at a more reasonable price.

Obtaining these materials was only half the challenge. I was made aware by my driver that ensuring this equipment actually arrived in BaPrey was a problem itself. I had thought it was going to be a relatively simple matter of hiring a truck and driver to transport the supplies to the village. Unfortunately, the political realities in Cambodia may have prevented this

from happening. There was concern that the supply truck would be stopped by the police on the way to the village. As illegal logging has become a major environmental problem in Cambodia, a truck full of lumber would very likely attract unwanted attention from the police. In an attempt to combat this problem, police pull over suspicious lumber trucks to make sure their cargo is legitimate. However, my driver also informed me that in some cases, trucks and their cargo have been confiscated by the police and later sold for personal profit. Knowing there would be little we could do if the police got involved, we followed our supply truck out to BaPrey, just in case we had to explain our situation to anyone.

The construction site would also provide a set of new challenges for me. It was my hope that my preparations and the lessons learned from last year would help to greatly expedite the building process this year. Unfortunately, on the first day a miscommunication regarding leveling the foundation caused a relatively simple task to take six hours, costing us nearly an entire day worth of work. Thankfully, this was the only major setback during the construction process. Other smaller problems came up occasionally, but were usually solved quickly by either drawing a diagram or using an interpreter. The supplies we purchased were very close to what was required to build both huts, the only exception being the need to buy a few more 2 x 4 boards and sheets of tin roofing.

Despite all of my planning and preparations, the first hut was not completed by the time our group left on the third day. I was hoping to at least have the first hut completed so that I could take pictures and have something to show from all the work that was put into this project over the course of the last year. All that was needed was to weave and attach the thatch walls to the hut to finish it. It was frustrating, having been so close to being done, yet not being able to finish this one hut. Even though the huts would eventually be completed, the next day we would be returning to Phnom Penh and I would not be able to return to the building site.

I had a long time to reflect on what I perceived to be a failure on my part during the three hour car ride back to the hotel. I blamed myself for the hut not being completed, and ran through a long list of things I could have done differently that might have sped up the building process. Later, I began to realize that I was being overly critical of myself. My experiences building this hut had actually taught me several things about myself and my personality. I am a person who tends to micromanage projects, and sets specific deadlines for objectives to be met. This was not the mindset of the more carefree, easygoing Cambodians. This was truly a cultural clash and I had not

considered how much these cultural differences would impact my project. It was not that one party or the other was wrong; we just had different ways of doing what needed to be done.

Upon further reflection, I also realized I was looking at the end results of the project incorrectly. The goal of this project was not necessarily to get pictures of the completed huts. Rather, it was to record all of the information relevant to building the huts in order to rewrite and update the manual. When the results are looked at from this perspective, the starting goals of this project had been met. Directing this project from start to finish allowed me to sketch out the designs before we left, provided me with the opportunity to take detailed notes, diagrams and pictures on the ground, and in the end, I had all the information necessary to complete and rewrite the hut building manual. Perhaps what really helped me put this experience in the proper perspective was an experience I had as I was preparing to leave BaPrey on the third day. One of the village men working on the hut came over to me, smiled, and said something in Khmer. When I asked my interpreter what he said, he laughed; "he says, you build hut very fast." I smiled and thought to myself; "yeah, we did do a good job, didn't we?"

CONCLUSION

Throughout the course of this project I had learned a great deal about myself and project planning. Never before had I been in charge of creating a project of this magnitude, raising funds for it, and doing all the planning from beginning to end. I also worked with community partners, some of whom previously worked with the McMaster School, and some who have not. Perhaps the most dramatic part of this entire experience was being able to meet the families that were to receive these huts. In both cases I was able to see the homes where they lived. The structures lacked support poles to keep them off the ground and flooded during the rainy season. Through their kind smiles and words of thanks, I realized the importance of this project. While I will never be able to solve the larger issue of property confiscation that my project examined, I realized that I had made an incredible difference in the lives of these families.

I have learned that things will not always go as planned, and that in order to carry out a truly successful project, one must be prepared to adapt to changing circumstances as the situation merits. As with several other projects that McMaster Scholars carried out this year and the last, the end result did not always resemble the one which they had initially planned. I learned that just because a project does not go as originally planned, this does not make it any less successful.

REFLECTION

While I have examined how this project has related to me personally, I must also look at how it relates to the goals and mission of the McMaster School. The McMaster School seeks to teach its students the root causes of human suffering, to create community partnerships and teach students to be active citizens in the world community. In Cambodia, the confiscation of property from the poor by the wealthy is a result of both poverty and lack of education. Those who lose their property have neither the financial ability to fight back, nor the education required to understand their own rights or what rights they are missing. While solving these social problems is far beyond the power of the students of the McMaster School, the projects that they carry out each year serve to further empower the people of Cambodia, allowing them to take control of their destiny. I have also had the privilege of working with community partners, both old and new, all of which have been enthusiastic about being involved with this project. By contributing financially, donating materials or offering advice, these community partners have been invaluable. Without their support, this project very simply would have never succeeded. Perhaps most importantly, I have learned to think and act as a global citizen. As a student of International Studies, I realize that we are all citizens of the international community, and as such, it is our duty to act. No longer are we able to ignore human suffering because of national boundaries. We are all citizens of the world, and the future leaders of our professional fields. If there is to be positive change in the world, than it must begin with us.

My involvement with the McMaster School over the last two years has helped me to grow and develop, both personally and professionally. Personally, I have learned a great deal about myself, about my strengths and weaknesses, my aspirations and potential, as well as my limits and capabilities. Reflecting on these issues has helped me to figure out who I am what my role is in the world. Professionally, I have learned about the realities of the world, and that change comes about slowly over time. Being a graduate in the field of International Studies I hope to build upon my experiences in Cambodia as apart of my career. The McMaster School gave me an incredible opportunity to work in Cambodia for two years, and it is my sincere hope that one day I will be able to return to this beautiful country and continue my work toward social justice as a professional.

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DOCUMENTING TRADITIONAL HERBAL MEDICINES IN CAMBODIA

Rebecca Zebrowski, McMaster Scholar

In the 1970's, an uprising of anti-Western militants gained power in the Southeast Asian country of Cambodia (Chan, 2004). According to scholars, these militants, the Khmer Rouge, manifested their determination to rid Cambodia of all Western influence in the unprecedented destruction that they enacted upon their fellow citizens (Hughes, 2008). Villages were evacuated as people were placed into work camps, books were burned, teachers were executed, and Western doctors were wiped out (Ui, Leng, & Aoyama, 2007). What started as the removal of Western tendencies from traditional life soon escalated into an all-out genocide as paranoia swept the country. Even people with glasses were targeted simply for *looking* educated or somehow elitist (Santini, 2002). Though the Khmer Rouge is no longer a threat today, the devastation left in their wake still grips Cambodia and the survivors of this regime (Kemp, 1985). Every facet of society was touched by the Khmer Rouge's fury, and as Cambodia attempts to rebuild, varying needs for concentrated scholarly effort begin to crop up. One such need to surface was the investigation and verification of traditional herbal remedies. While not specifically targeted by the Khmer Rouge, subjects like these were detrimentally impacted by the regime's distaste for Western-style scholarship and preservation techniques (Ui, Leng, & Aoyama, 2007). Born out of the need to formally document and research Cambodian herbalism, the following project attempted to complete the first phase of data collection: assessment of herbal medicine as it exists in the Phnom Penh, Kampong Cham, and Siem Reap regions.

REVIEW OF THE LITERATURE

In order to facilitate research in the field and to create a frame of reference in which to place the project, an investigation into preexistent scholarly work on Cambodian herbalism was conducted before departure for Phnom Penh in May of 2009. Western texts are sparse concerning Cambodian herbalism or "traditional medicine" as it may sometimes be referred to, especially by those who emphasize culturally-specific spiritualism as well as herbalism in Cambodian medical practices (Shimada, Jackson, Goldstein, & Buchwald, 1995). Information on Cambodian culture, however, is readily available from researchers working with refugee populations in places like the United States. Drawing from these texts and a Cambodian resource on herbs, a general context in which to place herbal medicine was created. Such a context including Cambodian history, cultural mores, communication styles,

healthcare beliefs, and methods of medical treatment, was essential to the growth and evolution of this project.

Due to a lack of education, many Cambodians tend to be ill-informed on basic health care (Kemp, 1985). Concepts such as the need for sanitation or personal hygiene can often seem totally foreign, especially to rural populations who may not even have access to clean water, let alone hygienic supplies (Ratnaike & Chinner, 1992). Many Cambodians also tend to have little understanding of the science of the body or the medications designed to assist it (Shimada et al, 1995). The body's processes can often be regarded as a direct result of *spiritual* rather than *scientific* occurrences, which leads many Cambodians to interact poorly with a very scientific Western medical system (Jackson, Rhodes, Inui, & Buchwald, 1997).

Cambodian spiritual or cultural beliefs play a huge role in the way healthcare plays out in Cambodia. Firstly, cultural issues such as boundaries between men and women make gynecology nearly impossible to practice (Brown, Godden, & Sopheak, 2006). Secondly, varying problems arise in basic diagnosis due to things like the spiritual stigma surrounding touching/ examining the head and removal of blood for testing purposes (Kemp, 1985). According to certain researchers, given this emphasis on spiritualism, Cambodians may also be of the conviction that illness only occurs when a



spiritual problem exists and manifests itself through symptoms. This belief encourages many Cambodians to seek spiritual healing before attending a Western clinic and makes it difficult for these facilities to prescribe regimens that require medication during asymptomatic periods (Shimada et al, 1995). Such regimens cannot be guaranteed, however, even if followed properly; counterfeit medication is not uncommon in Cambodia, nor is a high tolerance to potent prescriptions, which are readily available over the counter in Cambodia (Dondorp, Newton, Mayxay, Van Damme, Smithuis, Yuen, Petit, Lynam, Johnson, Hien, McGready, Farrar, Looareesuwan, Day, Green, & White, 2004). Added to common misdiagnoses and the unique cultural demand to be issued a medication (even if a patient does not need one), these beliefs and practices make Cambodian use of Western medicine in certain cases potentially more detrimental than beneficial (Pilszczek, 2001).

Because Cambodian culture and Western medicine contrast in such a costly way (both fiscally and medically), a scholarly look into herbalism has become an urgent issue. Not only is this form of medicine already widely used (Shimada et al, 1995), but it is also readily available, low in cost, and in perfect harmony with the spiritual practices of many Cambodians.

Initial exploration of these herbal remedies began with the only known text written by Cambodians on the subject: *Cambodia Medicinal Plants*. Produced by Cambodia's Ministry of Health: National Center of Traditional Medicine, it is a rough resource briefly describing what may be medicinal plants growing in Cambodia. The book's English translations are imprecise, however, and it appears to contain no recognizable system of organization (Ministry of Health, n.d.). Because it also lacks scholarly research (or any citation thereof), the book makes further investigation difficult. It does, however, provide scientific names for nearly 250 plants along with photographs of each and indications on their proposed use. Regardless of the questionable nature of this information, the resource proved pivotal as a catalyst for the questions needed to obtain crucial data on the ground in Cambodia.

METHODOLOGY

Using the Cambodian text on herbs, a field guide was created to assist in data collection while in Cambodia. The guide included a profile sheet for each herb listed by the Ministry of Health. Complete with high-resolution photographs, the profiles detailed each herb's indications as included in the Cambodian text along with any available scientific information that might be published in reputable resources outside of Cambodia. With space provided for notes, these profiles became the cornerstone of my research in Cambodia.

On the ground, interviews using the field guide profiles were conducted with various individuals to gather information about herbs and their indications. Families would present nearby-growing plants with which they were familiar and describe their potential uses; in rural Kampong Cham, a number of these families shared such herbal knowledge. In Phnom Penh and Siem Reap, however, the most valuable resources on this information proved to be market vendors. Almost all of these individuals, however, found it difficult to draw information from memory regarding any plant not present during the interview. The field guide profiles, however, helped to facilitate direct conversation about herbs indicated as being especially potent or beneficial by the Ministry of Health. Aided with a visual image of the herb, interviewees often responded very quickly and were eager to share either their knowledge of potential uses or the fact that they did not believe that the particular plant should be used medicinally.

In order to avoid guiding an interview, questions were very carefully designed. Plants were never referred to as “medicinal” or “herbal” unless an interviewee indicated that they could be used as such. Yes or No questions were rarely asked, leaving the interviewee open to disclose any information they felt was pertinent regarding any plant they believed to be useful. If an herb was listed in the profiles yet not confirmed by an interviewee as medicinal, questions to reveal the plant’s nature, such as: *“I know some doctors- what could they do with this plant?”* were used. Often, these questions led to recollections of the rare healing properties possessed by certain plants. If no herbal association with a specific plant could be made, however, interviewees would often indicate that a doctor could simply do what anyone else could do with that plant: make a salad or decorate a house.

Though interviews were a significant portion of research on the ground, the most beneficial data for this project surfaced through visual observation. The field guide profiles were used to identify herbs growing wild along roadsides, in domestic yards, and those being sold in the market. Even sites not predicted to be highly important to my project, such as a visit to temple ruins, proved invaluable due to the Cambodian tendency to place scientific name plaques on decorative trees or plants in public places. Excursions to locations like the Cambodian Women’s Crisis Center or local clinic in Phnom Penh also provided countless opportunities to document, photograph, and take notes on the myriad of potentially medicinal tropical plant life growing wild. Venturing into the food section of the markets also enabled unprecedented data collection and assessments concerning the availability of some less-exotic herbs not visually confirmed to grow abundantly in any one area.

DISCUSSION

While no distinct healer or herbalist could be found in any of the villages or markets, almost everyone approached with questions about traditional remedies seemed to have some working knowledge on the topic. Each family seemed to pass down its own recipe for curing something, which produced problematic results. The information gathered during these interviews was often contradictory either to previous statements by other interviewees or to an herb's legitimate scientific indications. Herbal medicine was also very commonly described as a uniquely spiritual endeavor, not necessarily a potent physical healing method. Superstition also seemed to coincide with efficacy of an herb; many plants were cited as effective treatments for things like cowardice and nervousness before a wedding, while others were solely noted as components of intricate decoctions for good luck after giving birth.

Serious illnesses were rarely mentioned as having herbal remedies. This is directly contradictory to the Ministry of Health's information on certain herbs (Ministry of Health, n.d.), but it does coincide with literature explaining Cambodians' rate of herbal usage. According to some researchers, as much as 83% of a Cambodian population could rely on herbal remedies, but close to half of those using these remedies would not fully trust them or understand how they worked (Shimada et al, 1995, p. 372). Because both herbs and knowledge on how to use them is so readily available and inexpensive, it is no surprise that Cambodians are familiar with this kind of medicine, but their hesitancy to employ it for serious life-threatening conditions also seems natural. Although it is commonly used, the lack of reputable information on herbalism causes an air of suspicion over this healing approach, especially in urban areas where cultural traditions seemed to have ebbed in importance. What has manifested, therefore, is a situation in which traditional herbal medicine exists as a societal undercurrent rather than a recognized medical option. Some see it as a questionable medicine without standard, created out of necessity and practiced only when Western clinics are too expensive or inaccessible. Others view it as an important part of Cambodian culture that contributes vastly to a person's spiritual wellbeing, which in turn makes them physically healthy. Regardless, it is clear that a great deal of research is necessary in order to legitimize any professional implementation of this approach to medical care.

Due to traditional medicine's permeation throughout Cambodian culture, many of our community partners were highly interested in this project's future research and its attempt to lend some scientific knowledge to an otherwise largely spiritual genre of healing. Doctors at the clinic in Phnom Penh were aware of herbal remedies, but were unable to utilize them without scholarly documents proving their efficacy. Outside research from Western

doctors would be necessary as proof to their patients that these techniques were reputable and worthwhile. Women at the Cambodian Women's Crisis Center (CWCC) were also excited about investigation concerning traditional medicine; herbs indicative in cases of feminine issues were readily available near the shelter, but the women were unsure of their exact uses or effects. Both organizations were hopeful that research would enable the use of prevalent natural resources and important cultural practices in addressing their clients' poorly funded medical needs.

CONCLUSION

From the observations made on the ground, it is clear that Cambodian traditional medicine is indeed in a precarious position. The original need expressed by the community was mere documentation of herbal remedies to prevent losing that information if older individuals passed on. Investigation from the onset of this project, however, has indicated that more than just written record of these remedies is necessary for traditional medicine's continuance. Given the inaccuracies present in the Ministry of Health's text on herbs, the varying beliefs concerning any one herb's indications, the ubiquitous nature of utilizing questionable remedies, and the urgent need for cheap and *culturally cohesive* medical care, it would be irresponsible to produce a text of pure documentation alone. Interviews also revealed that families wishing to pass on specific herbal remedies do so very effectively through oral tradition; there is little interest in obtaining a written record of what many consider to be very sacred and intimate (albeit potentially inaccurate) herbal knowledge. Cambodians do not risk losing the knowledge of traditional medicine, whether herbal or spiritual, with an aging population. Rather, they risk losing the *value* of this important cultural practice by failing to ensure that it is both effective and safe.

The community's interest in herbalism, therefore, is not the documentation of specific interviews, but rather the *verification* of herbal remedies that could be used to help offset the costs and detrimental implications that sometimes accompany Western medicine's clash with Cambodian culture. Organizations capable of using their traditional skills regarding health are anxious about future scholarly research on these methods along with any other information that could be used to help the people they serve. The Cambodians who facilitated the data collection in this project exhibited a strong desire for self-sufficiency and a pride in the traditions they have maintained through herbalism. Further research and implementation thereof is subsequently appropriate in response to this drive for cultural respect and independence. Research guided by the information collected in this phase of the project could produce invaluable texts that legitimize safe, reputable, virtually costless, and most importantly: *sustainable* methods of healing

unique to Cambodian culture and history. Such a result would empower this population, giving them the ability to heal themselves free of charge in ways that do not ask them to sacrifice any part of their culture or spirituality.

REFLECTION

The McMaster School enables students at Defiance College to apply their unique talents to tasks greater than earning a huge salary after graduation. The problems that these scholars must tackle do not affect them directly, nor are they dire issues on the global circuit. These problems are difficulties that small, underprivileged populations face in the struggle toward creating a better life for themselves. The projects we create as scholars address the direct results of the negative ways in which human beings have treated each other and the implications that global indifference has had on those already subject to such cruelty. In Cambodia I watched my fellow scholars grow in their fields, learning how to become better teachers, more effective communicators, and more culturally aware social workers. Each project was designed to alleviate some form of suffering otherwise overlooked, and I marveled at the way our group adapted to unpredictable circumstances and learned to face adversity without flinching.

As individuals attempting to “advance humanity,” we made a promise to do everything in our power to end indifference concerning a particular need. We promised to become experts on a specific topic and refuse to overlook those who asked for our assistance. We promised to dive into Cambodian life headfirst and connect on the most basic human level with *people*...not organizations, not figureheads... but with *people* who recognized their needs and the possibility that strangers, totally different than themselves, might be able to teach them something. As a member of the global community, it was an honor to take on the task of assisting those individuals with the resources and skills that I had at my fingertips. It was an *absolute honor* to spend endless nights researching cultural intricacies, herbal indications, and medical practices in Cambodia. Never have I been more floored, however, than by the realization that in my scholarly endeavor to alleviate suffering in a foreign and neglected country... I completely overlooked the fact that I was still a 20 year-old college student with a lot to learn. Cambodia was a place where I was an expert on a very important topic, but one that held no bearing on whether or not a family had food for the night. My expertise could not help a sex trafficking victim overcome the horrors she had faced, nor could it alleviate the suffering of a family on the verge of losing their daughter to massive postpartum hemorrhaging. All the academic study in the world could not reverse the damage inflicted by the Khmer Rouge’s heartless genocide, and in the midst of a nation gripped by suffering, I stood in my assumed “infinite herbal wisdom...” and I was humbled.

We, as McMaster scholars, attack issues of injustice in foreign countries. We cannot, however turn back time or fix the problems of the world overnight. This project helped me to grow as a scholar and researcher, but it also helped me to accept for the first time that I am member of a community who cannot control everything that happens. No member of a partnership is more valuable than another, and in the McMaster partnerships as well as in any human relationship, every partner has something valuable to contribute and every partner is responsible in some way for the eventual outcome of their interactions.

In Cambodia I offered my knowledge and talents in communication, herbal medicine, and cultural preservation. Cambodia, however, offered me a picture of the human condition; a picture of what it means to get carried away by differences or imagined barriers between people, and what it means to forget that we need each other. While we may not be able to offer each other the solutions to every one of our problems, we are indeed equal contributors to the experience we share as people. By offering each other something as simple as respect, we begin to witness the beauty and value of one another and of every individual with whom we come in contact. If we can harness that energy, that passion, that dedication to each other, then we can tap into what it means to be a human *family*, and together we can work not to advance those we judge as underprivileged or in need of our intervention, but rather to advance *all* of humanity, allowing ourselves to bear witness to the innumerable lessons that every person has to teach. After all, none of us have all the answers.

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THE DANGERS OF CRYSTAL CLEAR WATER: TESTING CAMBODIA'S DRINKING WATER FOR HIGH LEVELS OF ARSENIC

Rachel Flad, McMaster Scholar

One of the most important aspects of becoming a McMaster scholar is to find a project that aligns the scholar's passions and disciplinary interests. A scholar's project should demonstrate their strengths, not weaknesses, and the destination should be taken to a country that a scholar has a strong interest in and is interested in learning about the culture of that country. Since my senior year in high school, I have been looking for an opportunity to travel to Southeast Asia to see firsthand how Cambodians have rebuilt their lives since the reign of Pol Pot and the Khmer Rouge. My academic background in the sciences led me to finding research that had been unknown to both McMaster fellows and community partners for the five years that scholars and fellows have traveled to Cambodia.

My project focused on the problem of arsenic contamination in many sources of drinking water in Cambodia. The most disturbing part of this research is that most, if not all, Cambodian families have no knowledge of this problem that may lie right in their front yards. During my trip to Cambodia, I tested various water sources to determine if the level of arsenic in the water was above the recommended guidelines.

Literature Review

There are many misconceptions about arsenic and arsenic contamination in drinking water. It is assumed that arsenic contamination is the source of foreign warfare or industrial wastes. However, these assumptions are false. Arsenic is found naturally, and it is the 20th most abundant element found in the Earth's crust (Valberg et al., 1997). Arsenic can be released into water and soil through various methods depending on the conditions in nature. Drinking water gets contaminated when oxygen levels in water decrease, and iron and manganese, found in certain soil types, absorb the arsenic and then transfer it to the water. Contaminated drinking water is the most common way that humans are exposed to arsenic (Chou & De Rosa, 2002).

The World Health Organization (WHO) has determined that a person may ingest water with up to 10µg/l, or 10 parts arsenic per 1 billion parts water, and still be out of danger for significant health risks (Smith & Smith, 2004). The largest health risk associated with arsenic poisoning is various types of cancers. The three most common types of cancer associated with this

problem are skin, lung, and bladder cancer (Smith & Smith, 2004). Arsenic poisoning can also lead to gastrointestinal and renal disorders and diabetes (Buschmann et al., 2008). The most visible sign of arsenic poisoning is the changing of skin pigmentation but diminished use of the cardiovascular and nervous systems are other common symptoms (Berg et al., 2007).

Arsenic is found in groundwater at shallow depths and can also be found at over a hundred meters underground. Arsenic is commonly found in the floodplains of the Mekong River, not just in Cambodia, but also in Vietnam and Laos as well. Arsenic is more commonly found where the floodplain is wider, and the arsenic deposits are most commonly blamed on the Mekong River (Stanger et al., 2005). There are multiple ways to remediate the arsenic problem in Cambodia, but first, tests must be run to make sure that the drinking water is contaminated.

METHODOLOGY

The water samples that were tested were selected randomly. They were taken from various locations in the country and from differing sources, both natural and processed. In total, ten water samples were tested. The arsenic test that was used was purchased from the HACH Company which could provide arsenic readings from 0 parts per billion all the way up to 500 parts per billion, and allowed for results to be produced only 20 minutes after the testing began.

During our travel in the rural villages of Cambodia, I identified wells to be tested for arsenic. After identifying the wells, I pumped a 50 mL sample of water into a water-tight container. A predetermined amount of sulfuric acid and zinc are added to each water sample. On the top of each container is a small hole. An arsenic testing strip is placed, reactor-side down, on top of the hole. The water, sulfuric acid, and zinc mixture is swirled to mix the water with the reagents and begin the reaction. The mixture then sits for twenty minutes, while also being swirled two additional times, but making sure that the water mixture does not come in contact with the testing strip. After the time has elapsed, the testing strip is removed and the color that appears is compared to the color legend to determine the amount of arsenic present. The absence of color on the strip corresponds with an absence of arsenic in the water, while a darker yellow or red corresponds with a higher arsenic level.

The best feature of this particular arsenic testing kit is the range of results that it can produce. The water samples can show the results of arsenic levels at 0 ppb (parts per billion), 10 ppb, 25 ppb, 50 ppb, 100 ppb, 250 ppb, and 500 ppb. The test strips are simple to read and each arsenic level is distinguished



by a specific color so there can be no discrepancies in the results reading. After the water sample was secured, I recorded environmental and geographic data pertaining to each site. The data was recorded as field notes on a spreadsheet. I noted the surroundings of the well, including plant life, proximity to animals and humans, GPS location, and whether the well was located in a rural or urban area. I also spoke with the homeowner to determine the use of the water from the well and how it may be processed before use.

DISCUSSION & CONCLUSION

No water samples that were tested were found to have any traces of arsenic. This however, does not mean that there is no arsenic present in any part of the country. The research that was used to write the literature review may have focused on other parts of the country that we did not travel to on this trip. Another explanation to the lack of arsenic in the water samples could be because other groups or Non-Government Organizations (NGOs) may have come to remediate the problem before we arrived.

Although no arsenic was detected in my water samples, I realize that I did contribute to the academic discourse pertaining to the issue of arsenic contamination of water in Cambodia. I have identified sites that, at the time of my testing, were arsenic free.

Many things can be done to improve and continue this project. As is with continuation of any McMaster project, research is a key component. Research can be done to pinpoint the specific locations in the country where arsenic is the most prevalent. Contact should be made with Non-Government Organizations who may be doing the same work as Defiance College in the area, so a partnership can be made and all Cambodians can one day have drinking water that does not contain arsenic. Contact can also be made with the Kingdom of Cambodia to determine if any steps have been taken to address this issue. As I continue to develop this project for next year's trip to Cambodia, I will look back at my results and compare them to the research that I have found. My results could agree with the research, thus making for a more solid argument that there is not arsenic in some parts of the country. For my trip next year, I hope to assist with an NGO already established in Cambodia to pinpoint a more condensed area to where arsenic can be found.

REFLECTION

The opportunity to travel to Cambodia has helped me grow both personally and academically. I am now confident that I will be able to continue my travel internationally, even after I graduate from Defiance College. I also have a stronger interest in working for an NGO or a government agency to enhance the well-being of others. Throughout the entire trip, I learned what the true sense of community truly is to people who have a different lifestyle than my own. Everywhere we traveled, we were greeted by numerous Cambodians who wanted to get to know us and find out why we were there. While in the rural village of Bah Prey, we distributed rice to local families. The elders of the village stood outside for hours, in the heat and the sun, to receive a bag of rice from us and to thank us repeatedly.

It is discouraging to know that since the reign of Pol Pot and Khmer Rouge, Cambodians have struggled to know about information and technology, regarding their health, medical care, and nutrition that could improve their quality of life. Through Sophie Stagg, our translator for the majority of the trip, I communicated to families about the purpose of my project. It was very disheartening to see the reactions of the people as they did not know that arsenic poisoning was a serious problem. Every time that I tested a well, I had the opportunity to reassure the families that their water was safe from arsenic contamination. In the future, I hope that testing continues and if any arsenic is found, steps can be made immediately to one day eliminate this problem.

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WORKING TO REDUCE TUBERCULOSIS IN CAMBODIA

Nigel Hogan, McMaster Scholar

My interest in tuberculosis (TB) and its impact on Cambodians was sparked by McMaster Scholar Kelsey Huff's presentation during the 07-08 academic year. As a molecular biology major intending to study medicine, I realized that this experience would have an impact on my future study. In addition, it provided me with the opportunity to observe the practice of medicine in a setting very different from the United States while allowing me to be of assistance to the global community by providing medical research to health professionals who might not have access to the information. It is my hope that the work and research I have completed will assist future scholar projects and address the issue of TB in Cambodia even more effectively.

LITERATURE REVIEW

During the 1970's, the healthcare system in Cambodia was virtually destroyed during the reign of the communist Khmer Rouge from 1975-1979. Doctors and nurses were identified and killed, and at one point there were only a handful of doctors still alive in the entire country (Hill & Eang, 2007). As a result, many health centers in Cambodia are staffed by doctors and health-care workers who lack basic medical knowledge and resources (Nakahara et al., 2009). This lack of information and resources present a significant challenge, especially in regard to tuberculosis (TB), an airborne disease caused by the bacteria *mycobacterium tuberculosis*. A serious problem, Cambodia has one of the highest rates of TB in the world with 500 cases per 100,000 (WHO World Report, 2009). As reported by the Embassy of the United States in Phnom Penh (2008), two-thirds of Cambodians are currently infected with latent tuberculosis although only 5-10% of those will acquire active TB. The same report stated that TB claims the lives of over 12,000 Cambodians every year. To compound this health crisis, current research also seems to indicate that Cambodians have a genetic susceptibility to this disease (Delgado et al., 2002). In Cambodia, tuberculosis carries with it a special stigma that most other diseases do not; family members fear isolation from their relatives and community if diagnosed with TB (Jackson & Kwan-Gett, 1990).

The treatment and procedures that Cambodian doctors currently use to fight TB are not very clear either in the literature or as explained during meetings with the Cambodian doctors. Although the generally accepted method of treating tuberculosis consists of a 6-month regimen of oral antibiotics, the literature I have found is silent regarding what actually takes place in Cambodia. Recently, in an article in the Phnom Penh Post (2008), the director

of the National Centre for Tuberculosis and Leprosy Control, Mao Tan Eang stated that Cambodia has had the necessary resources to combat tuberculosis for years. The article indicated that Cambodia has been enjoying the benefits of new drug mixtures to treat TB and improved training among health-care workers. This information appeared to be in conflict with the data that stated that medical resources at Health Centers and Referral Hospitals in Cambodia were insufficient and the staff was in need of training in medical techniques (Nakahara et al., 2009). Strasberg (2006) stated that in the rural province of Kep, health care workers lack basic medical knowledge and resources. This seeming contradiction in the literature may highlight a stark contrast between urban and rural health care settings. It may also point to the lack of standardized health-care training and procedures.

Current research regarding treatment of tuberculosis depends on whether the patient has active tuberculosis (with symptoms) or latent tuberculosis (without symptoms). Treatment of active TB involves a regimen of 3-4 first line oral antibiotics over a period of 6 months. The first 2 months usually involve aggressive combination of all four drugs while the final 6 months of treatment involve only 2 drugs (World Health Organization, 2009). The idea is that by using a combination of first-line TB drugs, the risk of developing drug resistance is decreased. The most common first-line TB drugs are isoniazid, rifampin, pyrazinamide, and ethambutol (International Standards for Tuberculosis Care, 2006). Also, patients are encouraged to take the medication in the presence of a health-care worker in order to ensure that it is being taken properly and regularly. Treatment of latent TB is usually limited to a daily dose of INH over a period of 6-12 months with periodic checkups.

Recent research indicates that new drugs are needed in the fight against tuberculosis (Moran, 2005). The primary need for new drugs is due to the weakness of the current TB drugs, which require a six-month treatment course. This long treatment time is one of the main obstacles to the fight against TB globally. When patients have to undergo lengthy treatment, they are less likely to complete it in its entirety (Moran, 2005). If treatment is inadequate or incomplete, there is a high risk of developing multi-drug resistant TB (MDR-TB). Due to the difficulty in treating MDR-TB and the technology required to diagnose it, treatment costs can go all the way up to US \$15,000 dollars per case, making it extremely difficult for people to afford (Doctors Without Borders, 2005). From 2005 to 2007, the estimated number of Cambodians with MDR-TB jumped 2 % (WHO World Report, 2009).

The literature reviewed indicated that one of the best methods to combat tuberculosis is through early detection which requires accurate diagnostic tools. Several studies indicate a high level of anergy among Cambodians to

the tuberculin skin test (Delgado et al., 2002). In other words, PPD (purified protein derivative), the main component of the tuberculin skin test, is unresponsive in much of the Cambodian population and should not be used as the main diagnostic tool. One method of TB diagnosis used in Cambodia is the sputum smear, a relatively cost-effective alternative to the PPD test. The problem with smear microscopy, however is that it becomes increasingly ineffective at detecting tuberculosis in HIV-positive patients (Moran, 2005). This is a serious issue because Cambodia has been hit hard by HIV. Thus, it is important for Cambodian healthcare workers to know what tests are accurate for diagnosing TB and which are not.

In closing, the review of literature indicated that tuberculosis presents a unique challenge to Cambodians due to a unique genetic susceptibility to the disease. Also, the high level of unresponsiveness among Cambodians to the tuberculin skin test, and the deficiencies of smear microscopy in diagnosing TB in HIV infected patients, indicate the need for new diagnostic tools. The review of literature also revealed conflicting opinions regarding Cambodia's current ability and level of resources to combat tuberculosis effectively. This may point to a contrast between urban and rural hospital settings, which could be caused by a lack of standardized treatment procedures and medical training.



METHODOLOGY

The goal of my project was to educate doctors and healthcare workers in Cambodia about the most recent research regarding tuberculosis diagnosis and treatment. This was accomplished by presenting information at two hospitals, one in Phnom Penh and another in a rural village, pertaining to the effective diagnosis of tuberculosis, including review of symptoms, medical history, and clinically proven diagnostic tests. Since early detection is one of the keys to keeping tuberculosis under control in a population, this information is important for any healthcare worker. I also provided them with the most recent information on tuberculosis treatment, including the regimen and duration of anti-tuberculosis drugs that have been shown to be most effective at treating the disease. Finally, I gave them copies of medical journal articles citing all the information in my presentation. My hope is that my presentations provided them with helpful information that they can reference in the future.

RESULTS

My presentation to the doctors in Phnom Penh was well received. Many of them took notes and asked questions, which led to an engaging discussion, leaving the healthcare workers with a better understanding of how to diagnose and treat both pulmonary and extra-pulmonary tuberculosis. My presentation included power point slides, which we were originally going to have translated into Khmer but could not because of the difficulties translating medical terminology. I found it extremely helpful to have the help of Mrs. Krystal Miller, a healthcare worker from the United States, when it came time to field the more technical questions. I am also indebted to Dr. Nathan Griggs who provided me with valuable help in preparing for my project. In the rural village, I presented through an interpreter to a group of about 16 healthcare workers and only one doctor. For this presentation, because of the lack of available medical resources, I focused less on the technical aspects of diagnosing tuberculosis and more on ways to prevent the spread of TB. For example, in Cambodian culture it is customary for families to share a communal bowl at mealtimes, and TB can be easily spread from one family member to another in such situations. Overall, the clinicians seemed interested, although not as engaged as the group in Phnom Penh.

REFLECTION

Looking back, this project has allowed me the unique opportunity to experience medical practices in another part of the world. As I pursue my goal of becoming a doctor, I will never forget the conditions of the resource-limited hospitals that we toured. At the same time, however, I was struck that these Cambodian doctors do the best they can with the resources

available. For that, I respect them. In the rural village, I was pleasantly surprised at the knowledge of several healthcare workers regarding tuberculosis. One man in particular, who was not a doctor but was in charge of the TB department, demonstrated a very good understanding of diagnostic techniques and treatment options. Another observation that I made was the high level of respect and genuine appreciation from doctors as I was giving my presentations. Overall, I think the project was a success and I feel very blessed to have been a part of this McMaster trip.

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DEVELOPING A CAMPUS-BASED MICRO-LENDING STRATEGY FOR CAMBODIA

Sarah Plas, McMaster Scholar

The banking system in Cambodia was ravaged by the actions of the Khmer Rouge from 1975-1979. The Cambodian profile from the Asia Resource Centre for Microfinance describes the history of micro-lending in Cambodia in the following way: "Microfinance started in the early 1990s as Cambodia came out from a long period of conflict. Microcredit was first provided by NGO's [Non-Government Organizations], to fill gaps left by the banking sector" (Asia Resource Centre for Microfinance, 2003).

As a returning McMaster Scholar, I was able to expand on the project that I carried out in Cambodia in 2008. The main focus of my first project was to acquire information about micro-lending in Cambodia by making contact with these types of institutions. When researching this topic last year, I focused on micro-lending history and how it is being implemented in Cambodia.

I learned that Nobel Peace Prize winner Muhammad Yunus gave the first micro-loan in Jobra, Bangladesh in 1972. Originally, the concept of micro-lending began as a way to encourage villagers to plant more crops. Yunus eventually expanded his idea into the formation of the Grameen bank. He developed the process of giving loans to groups of people and working with these groups to pay back the loans over a set amount of time (Yunus, 2003). The model he created has expanded to many other economically disadvantaged countries. Women are an important demographic for micro-lending. *From Microfinance to Macro Change: Integrating Health Education and Microfinance to Empower Women and Reduce Poverty* is an article by April Watson, microfinance specialist and Christopher Dunford, President of Freedom from Hunger that touches on this topic. Watson and Dunford (2006) explain that, "Income directly and positively affects the health of family members when controlled by women and earned in small and regular amounts."

Micro-lending agencies focus on giving loans to women because these loans have a greater chance of impacting a family than loans given to men (Watson and Dunford, 2006). The institutions I was able to visit and collect information from last year include: Cambodian Entrepreneur Building Limited, Cambodia Microfinance Association, Thanakea Phum, Angkor Mikroheranhvatho Kampuchea, Seilanithuh, CREDIT, and Hattha Kakasekar Limited.

The purpose of my 2009 project was to continue the research that I began in 2008. Learning about micro-lending and gaining firsthand experience of this process of micro-lending has shown me that beginning a Defiance College micro-lending agency has many challenges. I have analyzed the data from the research and together with my first hand information gained from traveling to Cambodia, I have created an outline for a 10 year plan to be considered for use by Defiance College and the McMaster School in the future.

In 2009 I worked with the Cambodian Women's Crisis Center (CWCC) to improve its micro-lending program. The CWCC, as described on its website, was created in 1997 to provide services and shelter to those that had been affected by domestic violence or sex trafficking. These services include medical assistance and literacy training as well as legal representation. Phnom Penh, Bantea Meanchey province and Siem Reap province are the three locations of the CWCC.

LITERATURE REVIEW

I learned several key concepts pertaining to micro-lending in preparation for my project last year. The loan process is something that Yunus created and he describes it in *Banker to the Poor*, "It can take anywhere from a few days to several months for a group to be recognized or certified by Grameen Bank. To gain recognition, all the members of a group of five prospective borrowers have to present themselves to the bank, undergo at least seven days of training on our policies, and demonstrate their understanding of those policies in an oral examination administered by a senior bank official" (2003). After passing the test the member asks for a loan and Yunus describes this moment, "This is the beginning for almost every Grameen borrower. All her life she has been told that she is no good, that she bring only misery to her family, and that they cannot afford to pay her dowry...But today, for the first time in her life, an institution has trusted her with a great sum of money. She promises that she will never let down the institution or herself" (Yunus, 2003). Understanding how this process was developed, and the thought process behind it, was beneficial to my project this year. As I thought about how to assist the CWCC with their program, I tried to use characteristics of Yunus' plan.

During the 2008-2009 academic year, I used personal conversations with Kristin Ash, senior staff assistant, from WomensTrust as a reference to inform my work. Ms. Ash works with WomensTrust as a bridge between the staff in Ghana and the office in New Hampshire.

Ash provided me with background information on WomensTrust and what they focus on before beginning a micro-lending venture. WomensTrust, Inc. is an organization located in Wilmot, NH created by Dana Dakin an investment marketer that was searching for a way to give back. Since then WomensTrust has acquired 2199 clients in this area with 900 of them being active. Once the women have formed a group (a group is required to receive a loan) they receive \$55 U.S. and are charged 13% interest for each four-month loan period. WomensTrust mission is "...to support social and economic empowerment for women and girls living in poverty through microenterprise, education, and healthcare, and to inspire others to use our model" (WomensTrust, Inc., 2009). Ash also made reference to a book that gave a good foundation for starting a micro-lending program (K. Ash, personal communication January 12, 2009). The book is titled *Microfinance Handbook – An Institutional and Financial Perspective* (Ledgerwood, 2000) Ledgerwood describes factors to consider when implementing a microfinance program, and provides suggestions for loans in poor, rural areas similar to the rural areas in Cambodia. Her list of disadvantages to lending in rural areas includes that in a rural area many people are usually involved in the same trade (such as farming the same crop) and that a climate disorder can have a significant impact on all clients causing a great burden to the micro-financing institution (MFI). Also, poor infrastructure and lack of financial institutions in the area are also great obstacles. "MFIs must ensure that communication with clients is appropriate to their level of understanding, particularly if clients are anxious to access financial services and do not fully understand the implications and responsibilities of doing so" (Ledgerwood, 2000).

All of the points that Ledgerwood makes are important to consider for Defiance College as it considers establishing its own micro-lending program. The following is a tentative 10 year plan for Defiance College to develop and facilitate a micro-lending program. It is based on the work of Yunus (2003) and Ledgerwood(2000).

A TEN-YEAR PLAN

Below I lay out a ten-year plan for Defiance College's Micro-Lending Program.

1st Year: Meeting with micro-lending agencies and learning about how they operate.

This was performed last year and I found that there was a gap in coverage in the extremely poor villages that we visited. It seemed that most of the loans

were being given out in the urban areas of Cambodia. Seeing that the seven micro-lending agencies I visited have the infrastructure already in place to facilitate and conduct a micro-lending program, Defiance could use these contacts to get ultimately connect rural villagers with micro-lending services.

2nd Year: After learning about other micro-lending agencies in the Cambodian area, a brochure could be created. The main goal of the brochure would be to inform potential donors about the micro-lending process and Defiance College's goal of reaching the rural villagers. In year two, a plan should be developed for how to handle the donations once they have been received (such as a savings account, mutual fund, CD etc...). It is suggested that a Defiance graduate that works in the finance industry or a finance professor might be interested in being involved. For the first part of this process, Defiance College would be working through an already established micro-lending agency to distribute loans and that lending agency needs to be selected. The selection should be based on the area that the agency covers and if it is willing to expand to include the rural areas DC is trying to target. The student traveling to Cambodia will need to be able to present Defiance College's plan to the micro-lending agency and explain that the project will be beneficial to the agency as well as those in poverty. Defiance College will bring funds from donors to the micro-lending agency and work with them to target a specific area. This area should be well documented so it can be used in future brochures even though it might not be possible to get loans to this



area immediately depending on where the micro-lending agency DC works with can reach.

3rd Year: The student taking on this project will have to begin with updating marketing tools (brochures, PowerPoint). Fundraising is very important every year so that more loans can be distributed. This money will have to be invested (similarly to what was done in year two) and distributed to the MFI that has been chosen. Since the first round of loans is actually being distributed during this year, the creation of a website would be a way for donors to track the progress of their donation (similar to KIVA which allows lenders to donate money and get updates on how the loan is being repaid). A marketing class could be involved in the development of this site. When in Cambodia, the student traveling could actually travel to the field and see how the education and loan distribution is taking place. This information will be brought back to the education department where training materials could be created to take to Cambodia in the future.

4th Year: Updating marketing tools/website is important for donations. The marketing/education departments could get involved in creating training materials using the information from the third year student's research. The creating of training materials about basic financial concepts (interest, payments, and principle) is something that the fourth year student could take over to Cambodia. While in Cambodia the documentation of this process should be a priority so that this can be shown to past and future donors.

5th Year: Updating marketing tools/website is important for donations. A semi-annual mailing or email to the donors could be created. While in Cambodia the student should strive to become more involved in the micro-lending organization and processes. This could lay groundwork for DC to facilitate own independent micro-loans in the future. A constant review of the micro-lending process is important as well as staying current to new trends or developments in the industry. This allows Defiance College to stay educated on what other micro-lending agencies have to offer those seeking credit.

10th Year: After careful observation and research, along with the invaluable contacts made by working closely with established micro-lending organizations, DC can create a micro-lending agency of their own and actually run it independently of the other organizations. By employing and educating Cambodians to do the field work, not only is DC giving loans, they have created jobs.

METHODOLOGY SECTION

As an Accounting major I have a personal interest in finance and learning about global practices on a firsthand basis. This project fit well with my interests and the McMaster focus on improving humanity worldwide. The ability to use my education to help the CWCC improve their processes and gather information for the future of this project was a great motivator when choosing what project to work on. While locating information on micro-lending, I focused on journal articles and text pertaining to developing and creating a micro-lending process within an institution. These resources gave me a variety of suggestions and ideas to consider while formulating ideas for the future of this project.

While in Cambodia I was unable to arrange a meeting with the Cambodia Women's Crisis Center (CWCC) staff member who works closely with this program. I did have a conversation with Vathany Say, the director of the CWCC, and learned that the re-integration program was in need of a model to follow. I created an outline for an eight step business module based on the information that she provided. The steps included in this module are Determine Interest, Conduct Market Research, Develop Business Plan, Client Assessment/Award Loan, Implement Business Plan, Monitor Loans, Repayment/Default. Hopefully this will give the CWCC a foundation to use for their re-integration program. In addition, it is suggested that the McMaster scholars involved with this particular project during the 2009-2010 academic year develop this outline into instructional modules.

DISCUSSION

I had difficulty obtaining concrete answers about how micro-lending works at the CWCC, and was unable to receive answers to the research questions I had prepared prior to this trip. These questions were essential to understanding how the CWCC currently implements their re-integration program and would have been very valuable in creating a future plan for the shelters. These questions focused on understanding the demographic of women that are assisted by the CWCC, how the loans are structured, the number of women who participate, what kind of action is taken when loans go into default and how these loans are tracked. What I can conclude from my discussions with the CWCC director is that a good foundation is essential to running a micro-lending program. One point from my literature review that was briefly spoken about with Vathany Say was the pressure women are under when they receive these loans. She made the point that it is tempting for these women to take their loans and spend them on immediate family needs (food or medical assistance) instead of using it for their business. I did not find this in my literature review and thought it was an interesting insight

into the pressures women in this culture are facing. It appeared that CWCC was in need of guidance and structure about micro-lending and that the organization might benefit from Partnering with Defiance College. Vathany Say mentioned that the CWCC has already partnered with an existing micro-lending organization, AMK (Angkor Mikroheranhvatho Kampuchea). This organization is one that I had an opportunity to meet with during my trip last year, and the students working on this project for the 2009-2010 academic year can learn more about how this organization functions with the CWCC.

CONCLUSION

The work I was able to complete while in Cambodia gave me insight into what the CWCC would benefit from next year. Training on micro-lending concepts as well as a structured program is the need that was expressed. With two students taking over this project next year, these goals can be accomplished and a quality program created for this very deserving organization. It is imperative that these students have contact with the staff and clients at the CWCC so that their training will be beneficial.

REFLECTION

Through my research and experiences with my project I have achieved the McMaster School goal of examining the root cause of human suffering and contributing to the improvement of the human condition. I have met these goals by researching the process of micro-lending and understanding how these relatively small loans can have a great impact on their recipients. Studying how Yunus began this process and using my knowledge to create a module for the CWCC is a way that my project has begun to have an impact on relieving human suffering. What is neat about this project is that once these loans are repaid, the money can be re-used to assist another person. It is a cycle that has the ability to touch many lives and hopefully relieve much suffering.

My reflection, after being fortunate enough to travel to Cambodia these past two years, is that it is imperative to have a fellow or community member involved in the trip who is personally interested in your project. Without the help and support of a person in that position, it is very hard to create time and opportunities for a project. During my first trip to Cambodia I was very fortunate to have Nancy Preis, an expert in the accounting and entrepreneurial fields, along to accompany me and assist with my project. We were able to attend seven meetings with different micro-lending agencies and gather an immense amount of information. This past year I did not have that type of support and was unable to obtain answers to prepared questions I had about the CWCC's reintegration program. Though I was able to create

a module for the CWCC to build from, I believe my plan lacks depth and more detail would have been possible through an interview with the staff member that works closely with this project.

Prior to traveling this year I was anticipating extended communication with the CWCC staff directly connected with the re-integration program. Time was spent in the preparation of interview materials to be used directly with the staff members associated with this program. The time I was able to spend with Vathany Say was informative, but in no way did it answer the questions necessary to make this program a success. The time not spent on my project I directed to supporting other student's projects. The lessons I learned about patience and how to help others succeed will be valuable to me personally and professionally in the future. Taking direction, being flexible and learning to adapt to various situations is something I was exposed to every day. Though I was disappointed with my project, I gained great respect for my colleagues work and still find myself affected by it today. I will never forget the time I spent interacting with the Cambodia National Volleyball League Disabled.

It was interesting to note the changes in myself traveling to Cambodia a second time. International travel seemed to become a little bit easier the second time and I felt much more relaxed. Exploring the city came more natural during this trip and I had more motivation to try new experiences. There have been noted changes in my professional life as well. After my first trip to Cambodia, I began an internship at a CPA firm. I was terrified to try anything new for fear of not doing it correct. Now I am employed by this same firm, and the comment I got on my first review was that I am always enthusiastic to take on new tasks. This was the best compliment I could have received and I believe my international experiences have helped me overcome my fear of failure.

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EVIDENTIARY PHOTOGRAPHY: A TOOL FOR JUSTICE IN CAMBODIA

Niki Bare, McMaster Scholar

The purpose of this project was to implement scientific techniques of evidentiary photography at the Cambodian Women's Crisis Center. This would allow staff to have the necessary tools to collect evidence for the prosecution of domestic violence and sexual assault crimes. The photographs taken could then be used as evidence in the prosecutions of domestic violence and sexual assault crimes, and could help victims seek restitution for the wrongful acts committed against them.

LITERATURE REVIEW

In Cambodia's patriarchal society, women live as second-class citizens and face multiple forms of "discrimination and absolute poverty" (Cambodian Women's Crisis Center, 2007). Cambodia's women are amongst the most vulnerable due to their deficit in "education, health care, nutrition, employment options, protection, and a voice in decision making" (Cambodian Women's Crisis Center, 2007).

The three most frequent forms of violence against Cambodian women are domestic violence, rape, and human trafficking (Cambodian Women's Crisis Center, 2007). Under-prosecuted crimes can leave victims feeling helpless and hopeless, but the Cambodian Women's Crisis Center "encourages government bodies to hold perpetrators accountable" for crimes against Cambodian women and girls (Cambodian Women's Crisis Center, 2007). In 2004 alone, the Cambodian Women's Crisis Center filed 1,300 cases of domestic violence (Cambodian Women's Crisis Center, 2007). When violent crimes against women are prosecuted, survivors are empowered to regain control over their lives.

Cambodia's women gain hope as justice is served through the court system. The three most common forms of evidence used in prosecuting domestic violence and rape crimes include the victim interview, the suspect interview, and the medical certificate. The 2006 Cambodian Women's Crisis Center global report states, "Our victims had limited knowledge of how to keep the evidence after rape" (Cambodian Women's Crisis Center, 2007). Using evidentiary photography is yet one more very important tool for providing survivors with the physical evidence necessary for violent crimes prosecution.



Evidentiary photography emphasizes sensitivity, legality, and proper evidence collection. Sensitivity of photography focuses on taking photographs of trauma to the private areas of the body. It is suggested that, if possible, a female staff member photograph a female victim, and a male staff member photograph a male victim (Robinson, 2007). This sensitivity-based technique is aimed at preventing re-victimization from being examined by the opposite sex. In the text, *Crime Scene Photography* (Robinson, 2007), it is suggested that faces not be included in the photographs of sensitive areas of the body, and that the victim be encouraged to cover body parts that are not being photographed. These

techniques allow for the victim to maintain dignity during the collection of photographic evidence.

Legality of evidentiary photography is aimed at protecting both the staff member collecting the evidence and the victim. It is suggested that a neutral third party be present during the evidence collection. The third party serves as a witness, and can assist the survivor with emotional support, while also protecting the survivor from experiencing re-victimization during the evidence collection process (Robinson, 2007).

METHODOLOGY

The first task of this project was to collect donations to purchase digital cameras for the staff at the Cambodian Women's Crisis Center during the time of presentation. Fundraising began by writing letters to multiple digital camera companies and requesting the donation of new digital cameras. After receiving multiple letters of rejection from various companies, Polaroid donated three cameras. The \$1,000 in monies raised from area religious establishments, family, and friends were also used towards purchasing a fourth digital camera and supplies needed to use and maintain the digital cameras.

A Power Point presentation was then created and translated for presentations to the Cambodian Women's Crisis Center staff on the scientific techniques of

evidentiary photography. According to the educational training by Sexual Assault Nurse Examiner Melodie Brooks, RN, BSN, it is crucial to include an identifier card in all evidence photographs (Brooks, 2005). The identifier card includes a scale to size up the injuries, as well as an area to record the victim's name, the date, and time the photographs were taken, and an area for the staff person taking the photograph to sign. This form of evidence collection has been shown to increase guilty pleas and decrease trial time (Brooks, 2005). The survivor is then asked to hold the card and two pictures are taken to record the identification of the survivor. One photograph is taken from the frontal view, and the second from the side view. When staff members photograph the evidence, they are instructed to take at least two pictures of all injuries. The first photograph is taken with the identifier card held horizontal, and the other held vertical. This allows for each injury size to be accurately documented.

DISCUSSION/CONCLUSION

Discussion with the Cambodian Women's Crisis Center staff about evidence used in court verified my research. The staff reported that the victim's testimony, the suspect interview, and the medical certificate are collected for use in the court, and also confirmed that evidentiary photography is now being accepted and used in the judicial system. All staff present at the Cambodian Women's Crisis Center located in Phnom Penh were familiar with the digital technology and some brought their own cameras with them to the training to practice. This was not, however, the case at the Siem Reap location where the beginning of the presentation was focused on the basics of the digital cameras. The staff at both locations described their need for donation of more digital cameras, commenting that the cost of cameras in Cambodia ranges from \$300 upward, a price confirmed at a camera shop in Phnom Penh. With limited income, the Cambodian Women's Crisis Center is not equipped with monies to purchase additional digital cameras, making our donations much appreciated.

Following the presentation of evidence collection techniques, the staff commented on the use of identification cards. Previously, they had not been exposed to this tool, and stated they would like more cards, which we then created. The staff also commented that this tool for evidence collection would be helpful and stated that in the past they had not measured the injuries. The staff reported the desire for a video recorder that would allow the staff to capture the essence and details of the case, while also showing the victim how he or she was upon arrival to the center.

One of the largest needs discovered during the training was the need for an organized system in which to save and store the pictures. We showed the

staff how to upload photographs from the camera system to the computer for storage and suggested that staff rename the photographs and create files for each victim.

REFLECTION

Experiencing life in Cambodia led to daily reflection. I was astonished to see the extent to which women and children were affected by domestic violence and sexual crimes, and moved as survivors shared their life experiences while the learning community listened. Some women told of more horror occurring in one day of their life than many of us could imagine in a life-time. We reflected frequently on the strength of the survivors who not only take joy in living, but also help other survivors find life again. The community of amazing women at the Cambodian Women's Crisis Center has shown us the strength of the human spirit.

Upon returning home and examining the work both my fellow scholars and myself completed, I frequently thought about the impact the evidentiary photography project might have, not directly like some of the projects, but rather indirectly. Our learning community may never know the survivors whose lives will be made better by prosecuting violent crimes and may never hear testimony of the work the donated cameras have aided. While I am grateful that the trusting relationship between Defiance College and the Cambodian Women's Crisis Center made this project possible, the potential impact of evidentiary photography now lies in the hands of the CWCC staff.

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BASIC CONVERSATIONAL ENGLISH FOR CAMBODIANS

Tyler Dunham, McMaster Scholar

The purpose of my project was to research, create, and conduct an English language workshop for Cambodians so that participants might be better fit to obtain better jobs in the region's English-speaking industries such as food and tourism. I learned about the necessary terminology for these industries as well as how to create and conduct successful workshops to teach specific English words and their meanings to those individuals who use Khmer as their primary language.

RESEARCH QUESTIONS AND LITERATURE REVIEW

In recent decades, as Cambodia has struggled to recover from its vast economic losses, tourism has been one of the fastest growing industries. A document compiled by the Cambodian Ministry of Tourism (2008) reports that since 1993, the number of visitors arriving in Cambodia has increased from just over one hundred thousand to over two million annually. Of those visitors, tens of thousands arrive from the primarily English-speaking countries of Great Britain, France, the United States, and Australia. This large number of English-speaking tourists provides many career options for Cambodians struggling to find work, especially those who have even a basic understanding of English as a second language (Ministry of Tourism 2008).

TRADITIONAL CAMBODIAN TEACHING METHODS

In past decades, Cambodian teaching methods have been rightly described as "passive" learning techniques. Susan Needham (2003) writes in an active learning study that traditional Cambodian teaching methods focused in the past primarily on choral recitation rather than active learning. Though these traditions exist, active learning is also becoming a more widely-used method of education in the southeast-Asian region. A well-balanced approach to any educational workshop would include both passive and active learning strategies in order to reach all participants in the Cambodian Women's Crisis Center where this workshop will be conducted (Needham, 2003.)

To enhance this project from its previous version, one of the primary objectives was now to create a review document to be presented to workshop participants. This document, a set of laminated, weatherproof note cards on a metal ring, contained the most vital information presented in the workshop. The cards also displayed the words in their Cambodian spelling and pronunciation, and employed the use of pictures.

METHODOLOGY

Preparing for this project required a great deal of careful planning. Having received the knowledge that I would be working with two different crisis centers in Cambodia, it was immediately evident that any materials to be prepared for an English-teaching workshop must by necessity be flexible in structure. Having very little foreknowledge of the participants' grasp of the English language, all materials – which included games, puzzles, crafts, worksheets, etc., - had to be prepared to appeal to both those with a somewhat strong grasp of English fundamentals and also those with no experience whatsoever with the language. This was accomplished by bringing materials that could be taught in different ways. For example, if participants were already familiar with the numbers one through ten, the lesson could be modified to include simple addition or subtraction to bring the workshop's relative difficulty to an appropriate level.

While in Cambodia, I followed a structure similar to that of the previous version of this project. Working with the Cambodian Women's Crisis Center in both Phnom Penh and Siem Riep, I presented English words and phrases through games and other activities. The materials that had been prepared were an instant success, and participants quickly grasped the words presented.

The most effective element of this project – an addition that did not appear in the original project – was the construction of a small memory device intended to preserve the workshop's usefulness indefinitely. Fifteen of the most useful English words were chosen from the lesson materials, which subjects included numbers, colors, hotel words, and restaurant words. These words were accompanied by Khmer translations and pictures that could be used as a small, durable dictionary when needed. This was again well received by participants who immediately demonstrated their understanding of its intended use – the pursuit of work in the growing hospitality industry.

RESULTS AND DISCUSSION

The research and data that I had collected before going to Cambodia proved to be invaluable. Through my reading, I was prepared for the reality of the conditions in Cambodia, particularly in relation to its education structure. Passive learning techniques appeared to be still the dominant method as was demonstrated during our time in a school in the provinces. The hospitality industry is indeed growing at a rapid pace, with new hotels and resorts being constructed at many locations. The difference between those who could speak even a little English and those who knew none was quickly evident.



Because of this, I know that the project was a success. The participants in both workshop series gained valuable knowledge of the English language that can now be used to pursue higher paying jobs and a better life, in turn improving the overall condition of Cambodia as a nation.

REFLECTION

As a person, I learned the value of giving. Not giving in the sense of simply donating large amounts of money – as noble as that is. Through the McMaster School, I gave my time and effort, using what skills I had to bring benefit to those who needed it more than I. This project, as well as all of the other projects conducted by the 2009 Cambodia team, improved the human condition in Cambodia in all of the ways for which the McMaster School was intended. A house was built, doctors were given valuable information, and people were helped to raise themselves up in a struggling economy. It was a truly moving experience that has taught me a great deal about our obligation to humanity.

As a professional, I found my strengths and weaknesses as an educator. I came to see the power of language in a new way; the advantage held by those who could communicate over those who could not. Most importantly, I gained experience working in situations that were not always within my control, and I became filled with a desire to continue this kind of work wherever I can find it.

In the end, I only hope that those with whom I worked found as much benefit from these activities as I did. I hope that those in the Cambodian Women's Crisis Center are able to use the knowledge they have gained to find joy and prosperity in a nation struggling to rebuild.

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CAMBODIAN HEALTH CARE CRISIS

Kristi Kaiser, McMaster Scholar

Cambodia's current healthcare system is divided into districts of 100,000 to 200,000 people with one hospital per district and health centers for every 8,000 to 12,000 people in the district (Health Metrics Network, 2007, 10). Along with the creation of hospitals, training centers were developed to better educate the medical personnel. According to an article from the Department of Planning and Health Information Ministry of Health, "As of 2006, there were eight national hospitals, 77 operational districts, 69 referral hospitals" (Health Metrics Network, 2007, 10). Many of the hospitals offer testing and treatment of sexually transmitted diseases as well as general medicinal practices, but while services are offered at these places, many Cambodians cannot afford to receive medical treatment for serious illnesses, let alone Sexually Transmitted Infection (STI) testing. Because of this problem, my project worked specifically to teach Cambodian women who cannot afford treatment in the healthcare facilities about sexually transmitted infections. My hope is to teach women how to recognize sexually transmitted infections, how to seek proper treatment for any STI that they might have, and how to educate other women with valuable, factual knowledge about sexual health.

While sexuality can be an uncomfortable topic for any culture, especially the traditional Cambodian culture, the use of condoms has become a topic of discussion. A policy for sex workers operating out of brothels now states that they are to use condoms 100% of the time (Leng, Dallabetta, Wantha, Sopheab, Palla, Gorbach, Stuer & Saidel, 2000). For those sex workers not working out of brothels and other sexually active individuals, many places are now offering condoms, information, and education in hopes that individuals will utilize these resources (Leng, et al., 2000). However, it is common knowledge that if men are determined not to use condoms, the sex workers will not force them, especially if it means a substantially higher rate of pay.

Women play an important part of informing the public, especially high-risk women, about sexually transmitted diseases. Prior to trained volunteers providing information, most of the knowledge that women had came from friends passing on information even if it was not factual. Now there are women working as trained and supervised community health workers. (Suehiro & Altman, 2003). These volunteers are knowledgeable about reproductive health issues, including STDs, transmission of STDs and



contraception (Suehiro & Altman, 2003). It is important to have someone who can relate to being a Cambodian woman, teaching other women about sexual health. Unfortunately, because most of the training is done in larger cities, the rural women are left out and continue to have little information as to what can happen to their bodies as a result of STI's.

These challenges are important components of getting the HIV/AIDS and STD epidemic under control. Testing in hospitals may not be feasible for everyone, especially those living in rural areas that cannot get to a government hospital with the means to perform testing, which is why prevention through education is so important. When educating someone similar to oneself, it is easier for you to explain and for them to relate to. Volunteers are especially important. It shows people that because they are not getting paid to talk to you about these important issues, the volunteers must really care in order to spend their time doing this. When you feel that someone truly cares, you may be more receptive to taking into consideration and implementing these "safe sex" plans that they are presenting to you. This is a very important issue in Cambodia. While the government is doing something, they cannot do it all, and it is especially important for people to work together in educating everyone that they know.

Through a combination of literature review and interviews with Cambodian women, the need for education of women became clear. In response, a brochure was created listing six sexually transmitted infections along with

signs and symptoms, effects if left un-treated, and treatment options, both medical and herbal. Also with the brochure, a corresponding power point presentation was created consisting of vivid pictures of the female anatomy infected by each STI. This project is especially important to the women of Cambodia because the STI rates are particularly high in their country, and those are just the documented cases. One document said that 36.7% of sex workers that were surveyed in Phnom Penh tested positive for an STI (Leng, et al., 2000). Many other women could be unknowingly living with an STI because they cannot afford testing. The goal of this project is to educate the women about various STIs so that they may be able to recognize symptoms in themselves, but also so they can properly educate others.

DISCUSSION

This project was developed due to the need to educate women about STIs, and that need was demonstrated once the project was carried out. While talking to the women it became evident that the studies were very true. Many had questions about symptoms that they were having, which were all symptoms of sexually transmitted infections. In a group of about 20 women, at least four were brave enough to ask specific questions and talk about their symptoms. One was even able to give some symptoms that she had noticed in her husband. While the women may have known that their symptoms were abnormal, they did not know what could be happening to their bodies, or how to get help. Because of this project, these women now know what to look for as far as symptoms of sexually transmitted diseases and are now more likely to inform others and seek treatment. As a result, the rate of sexually transmitted infections is likely to decrease over time.

This project revealed the importance of educating women about STIs and other health topics, especially during this time of rebuilding. Because the women knew very little about STIs and asked a lot of questions, it was important that we were able to answer their questions and provide them with the informational brochure so they could recognize their symptoms as signs of infection. These women were very concerned by the possibility of infection, especially after hearing the long term affects if untreated. For pregnant women, the importance of treatment was that much more urgent. After presenting the information and talking with the women about what they noticed in their own bodies, they said that while some were able to afford treatment, many could not. They also shared that some had been to the doctor for treatment and that treatment was not effective. We were unable to conclude if the doctors were educated on the topic enough to give the correct treatment, or if they simply did not have access to the proper medications. Furthermore, women could also be re-infected by untreated partners. While these realities presented a problem, it was still

very important to get the information out to women so they could pass it on to others. While some doctors may not have been able to treat STIs, others may be able to. Next to giving the information about the infections, the most important part was stressing the use of protection when available, or to not be sexually active if one or more symptoms were present with either partner.

REFLECTION

Going to Cambodia and teaching women about something that is having a negative affect on many lives was one of the most important things I have ever done, and I hope my work helped improve the quality of life for someone. This project taught me the importance of reaching out and giving to others when they have needs, and helped me to step outside of my comfort zone and help a group of people that I otherwise would have never come into contact with. In addition, I learned the importance of patience and cultural sensitivity, especially when working with a language barrier. Doing things at a pace comfortable to the other person and being sensitive to Cambodian ways of doing things was key for me, especially as I begin a career in social work and will possibly be faced with the challenges that come from working with a different culture with a different language.

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REDUCING SEX TRAFFICKING THROUGH FAMILY EDUCATION

Chantille Millender, McMaster Scholar

My project in Cambodia aimed to help reduce sex trafficking and the incidents of child victims by strengthening family structures through education about possible dangers. This work required learning much about cultural differences between American and Cambodian family structures, and understanding influences on individual choices.

LITERATURE REVIEW

During the late 1970's, when the Khmer Rouge took the lives of more than 1.5 million people, Cambodian families were split up and torn apart. Khmer Rouge leader Pol Pot's "goal," as he put it, was to return Cambodia to 'year zero' and transform it into an agrarian Utopia," purging "educated city dwellers, monks, and minorities, while imposing a draconian resettlement program that uprooted almost everyone else. These measures led to the deaths of one-quarter of the country's population" (Brinkley, 2009).

This horrifying and mind numbing reality was driven home by Sophal Leng Stagg's book *Hear Me Now: Tragedy in Cambodia* (1998). Through Stagg, I learned how families were separated, some never to be reconnected, thus taking away from the family's ability to provide for each other and survive. The continued need to sustain basic living conditions causes Cambodian families to accept whatever work is available, even sex work.

In Cambodia I interviewed young girls and women affected by sex trafficking, either by being sex workers themselves or having family members/friends involved. They expressed their concerns both about the dangers of sex trafficking and the need to assist their families. In addition to formal interviews and conversations to better understand the issues surrounding sex trafficking, I also gave a presentation explaining what questions women should ask when considering sending a family member for employment. I distributed index cards that included questions to ask the person offering work and to ask other community members. I also distributed index cards that instructed young girls on what safety precautions to take to prevent being sold or stolen by a trafficker.

While I was in Cambodia, I learned firsthand about how women's value depreciates once their services have been used. *Sex Slaves: The Trafficking of Women in Asia*, by Louise Brown (2001), explains that virgins are more

appealing to customers and in great demand because the girls have no sex experience and therefore the men can lead them to do whatever they choose. Furthermore, virgins are appealing because they are less likely to have a sexually transmitted infection unless they were born with it. While in Phnom Penh, I spoke with a girl in her late teens who was sold three times, first for three million Reel (Cambodian currency) and the third time for 100 thousand Reel which is equivalent to 25 United States Dollars.

The literature also suggests that women living in poverty are approached more than others because Cambodian culture, unlike American, is very collective. Therefore, Cambodians are more likely to sacrifice the safety of one family member for the wellbeing of the entire family. David R. Hodge's (2008) article, "Sexual Trafficking in the United States: A domestic problem with Transnational Dimensions," states that "recruiters may point out how the money might be used to help existing family members while promising that their daughter will have access to a better life in a richer nation. Although untrue, such falsehoods can be convincing because of the pervasiveness of western media".

One woman shared the story of a village girl deceived by an American man who promised to take her to America to find work and a better life if her family gave him a down payment. However, once he received the money he was never seen again and the family found themselves more impoverished than ever.

Sormaly Mam, one of *Glamour's* 2008 Women of Courage, shared her story of how she, once was a sex worker in a Cambodian brothel, escaped. Mam's work now is to disguise herself and go into brothels to rescue girls. Since beginning her rescues, Mam has saved the lives of many girls and provided them with a home at a center. Unfortunately, all stories do not have a happy ending, as evidenced by a young woman I met in the shelter who was there to protect herself from domestic violence, which she endured at the hands of a drunken husband who attempted not once, but twice, to sell their twelve year old daughter into sex trafficking, without her mother's knowledge. This woman lived ever so gratefully for organizations such as the Cambodian Women's Crisis Center (CWCC) and even expressed thankfulness for those that support the CWCC through charity or assistance with social justice issues.

Clients like this woman helped me to recognize the importance of my work with human and sex trafficking issues, especially when she told of how a neighbor girl that was sold into trafficking by her mother, escaped a brothel and ran home. The girl's mother, along with village men, literally beat

her to death because of her escape. After hearing that story, I realized the importance of my project. Even though I may have been unable to share preventive measures with the young girls in the rural villages, I know that every girl and every family exposed to my information will be more knowledgeable about something that could save lives. The measure of my project's success will be each breath taken by a girl who escaped or avoided the Cambodian sex trade because of my information.

The perplexing problem of sex trafficking in Cambodia, while also an issue of education and criminal justice, is most difficult to address and overcome in the family structure. Although it was helpful to share preventive measures for parents and young girls, little can be done when parents, faced with the hard choice of sacrificing one for the benefit of many, intentionally sell their daughters to traffickers. In terms of education, the CWCC has a SMART program in which youth educate each other about the dangers of sex and human trafficking, while other agencies and NGO's are attempting to educate people about the impact of trafficking on the community through radio announcements. In my research, low literacy rates had a significant impact on education efforts that involved creating index cards for the youth and the parents.

A final complication in Cambodian sex trafficking involves the criminal justice system which contributes to the problem because of corrupt law



enforcement officers and staff. One of the girls I spoke with shared how she went through a trial to try and prosecute the man who sold her, but he was let off because of the unethical practices of law enforcement. To fully address Cambodian sex trafficking, problems in criminal justice, education, and the family structure all need to be addressed.

Of the McMaster School for Advancing Humanity's five goals, my research related to goal three which is "to contribute actively through sponsored scholarship and service to the improvement of the human condition worldwide." I believe that my project improved the condition of the Cambodian women. By preventing them from becoming victims of sex trafficking, they are spared physical, sexual, emotional, and psychological abuse. Furthermore, my project was done through sponsored scholarship and research that was later implemented as a service. This project has advanced humanity by empowering the women through education and providing them with a therapeutic outlet to share their stories.

In addition to helping the women, I was encouraged to see the women assist one another which showed that they endured a hardship yet were still able to come out strong. Professionally, this project had an impact on me because I was able to implement social work practice and use theories I have learned through psychology to help advance humanity.

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ACTIVE LEARNING IN CAMBODIA

Allison Johnson, McMaster Scholar

My project aimed to help Cambodian teachers implement active learning in their classrooms so as to align Cambodian schools with the country's current active learning rate while boosting student completion rates.

LITERATURE REVIEW

Between 1975 and 1979 the Khmer Rouge was responsible for the deaths of over 1.5 million people. Ayers (2000) stated that most educated people including teachers were killed or died during the reign of the Khmer Rouge (p 450-451), leaving Cambodia with the question of how to educate its students. According to Ledgerwood (2002), the Khmer Rouge destroyed "books, buildings, and other educational resources." In addition, "by 1979, between 75 and 80 percent of Cambodian educators were either killed, died from overwork, or fled the country. At least half of the written material available in the Khmer language was destroyed." Such events, followed by a ten year period of Vietnamese rule following the departure of the Khmer Rouge, left Cambodia with an impoverished educational system.

1979 to 1989 was a period of restructuring of the Cambodian schools which, according to Dy and Ninomiya (2003), meant grouping students together and



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providing instruction from anyone who could read. Sometimes this included finding school-aged children and placing them in various schools, even though the conditions of the schools were inadequate. Further, government officials asked all those who were literate to teach, regardless of training. During the early 1980's, all levels of schools from kindergarten through higher education were re-opened.

In Cambodia currently, approximately 48% percent of students complete primary school while only 21% percent of school age students complete lower secondary education (Dy and Ninomiya, 2003). Completion rates are so low in large part because almost one-third of the teachers are still untrained and their salaries are still around twenty American dollars per month. According to a recent study, 6% of Cambodian teachers have a primary education while 77% have attended lower secondary school. Only 14% have gone to upper secondary school and 3% have gone on to higher education (Ledgerwood, 2002). The article, *Education in Cambodia* asserts that, "Teachers are paid as little as ten dollars per month. Since they cannot live on such wages, they must supplement their income with other jobs, which often cuts into class times." In addition, many teachers must also charge students fees to attend their classes, or offer additional for-fee classes outside the regular class times (Ledgerwood, 2002).

My project's emphasis on active planning, defined by Meyers and Jones (1993) as anything that gets students involved in doing the things they are learning about, has great possibilities for Cambodian schools. When students become active instead of passive learners, they become part of the process and really begin to understand what they are learning about. Bonwell and Eison (1991) discuss how students must do more than just listen in order to be active learners. In other words, they must be reading, writing, discussing, or solving problems, all activities involved in higher order thinking such as analysis, synthesis, and evaluation.

METHODOLOGY

For my project I created a booklet that both provided support for active learning from various theorists and suggested specific active learning strategies. On the ground, I used the booklet for a training session with the teachers during which I discussed active learning and then demonstrated, with the help of other McMaster scholars, how to use active learning in the classroom. As a follow-up to ensure understanding, I concluded each lesson with a review.

DISCUSSION

My literature review and time in Cambodia gave me a clear picture of the Cambodian educational system. While the teachers need so much more than just active learning strategies, every piece of knowledge they can obtain is helpful. Furthermore, I learned that teachers want to use the best methods for teaching, including active learning, but lack the necessary resources for implementation. While the Cambodian government is trying to implement active learning into all schools, such a task is difficult. Still, on a small scale, my project was successful because the teachers were engaged and interested in learning methods to strengthen their teaching.

CONCLUSION

Cambodian schools are in need of a lot more than just active learning. They need the basics of an educational system such as trained teachers, supplies, money, and structure. Although training Cambodian teachers in active learning is important, because of the state of the system, most teachers, working more than one job, lack the time and the energy to create active learning lesson plans. Still, I believe that training and resources in active learning can have an impact.

REFLECTION

By teaching active learning strategies and theories to the teachers of Cambodia, I have helped advance humanity. These teachers are now better equipped to educate their students and also their colleagues so that active learning can begin to have a substantial impact. As a person, I learned the need for flexibility and the importance of learning to work with many different personalities so that much can be accomplished. As a professional, I have learned how to teach others while using a translator, how to conduct myself in a professional meeting, and how to understand different perspectives. I am grateful for the McMaster School for Advancing Humanity for this opportunity.

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REPRODUCTIVE HEALTH EDUCATION IN CAMBODIA

Amanda Losby, McMaster Scholar

After the civil war in the 1970s Cambodia's infrastructure was left in shambles with a lack of social resources. Between 1975 and 1979 the citizens of Cambodia underwent extreme changes, where nearly 2 million Cambodians were executed, died from starvation, or fled the country. Among those executed were the educated Cambodians, including medical professionals. This contributes to the reason Cambodia has not yet addressed the topic of reproductive health (Fordham, 2003). Therefore, the purpose of this project is to work with young women to understand the upcoming changes that their bodies will go through so that myths will be dispelled and Cambodian women will be better educated on the topic of reproductive health.

LITERATURE REVIEW

Currently, Cambodia does not have any policies related to reproductive health. The Ministry of Health does not recognize the need for reproductive health policies and instead focuses on "maternal and child health care and issues such as birth spacing and on safe motherhood policies.... There is a cultural emphasis on curative rather than preventative healthcare in Cambodian society" (Fordham, 2003). While services are not available in all areas of Cambodia (specifically the rural), non-governmental organizations play a large role in reproductive health programs (Ampornsuwanna, Tarr, Then & Mov, 2000).

In urban Cambodia 8.3% of adolescents are considered illiterate, compared to the 20.1% of adolescents considered illiterate in rural Cambodia (Knibbs, 1997). In a survey among Cambodians aged 11-20, rural and urban, it was found that those in the rural areas were "consistently less knowledgeable than their more urban peers, suggesting that location is a critical factor in access to learning about sexual health" (Knibbs, 1997).

Many Cambodian women do not know about menstruation until it happens (Fordham, 2003). Sexuality and reproductive health education are very important because there are many misconceptions about pregnancy, and much fear and reluctance to discuss such topics. There is also much confusion among women between what they hear and learn from the older generations and their peers. "Although most women know that sex can lead to conception, three-quarters of women respondents in the Ministry of Health KAP survey did not know when their most fertile period was" (Gorman, 1999). In another survey, "all the women recognized the

importance of the menstrual cycle, although there was no consensus as to when conception could occur" (Kulig, 1988). Local Cambodian beliefs suggest that "a woman's most fertile period [occurs] from a few days before menstruation to approximately one week after blood flow ceases, in direct contrast with modern reproductive physiology" (Sadana, 1999).

Through conversation with the former secretary general of the Cambodian Women's Crisis Center, it was discovered that women currently obtain information from parents and peers (Sreyroth Weaner, personal communication, February 17, 2009). In Cambodia, the social construction of the female gender identity is made up partly by innocence and ignorance (Gorman, Dorina & Kheng, 1999). Young girls typically try to answer their own questions because it can be embarrassing and a very private issue. Information regarding puberty and menstruation is not taught in school, even though the topic of conception is generally covered. Sex education is taught in high school and is limited to the sperm-can-produce-baby approach and what parts of the body produce this.

Many Cambodians believe that teaching young women about sexuality or having "sex education" will encourage them to engage in sex and more risky behaviors. "In schools, reproduction has been taught as part of the biology curriculum, but has often been restricted to plants and animals, and has



not touched on human reproduction” (Gorman, Dorina, & Kheng, 1999). If reproductive health is discussed in school it is usually done so in grades 7-12. This causes a problem because only 32.4% of adolescents in Cambodia finish primary school (Knibbs & Sophal, 1997).

In a survey of 120 Cambodian women, almost all claimed to know what condoms were, but had no experience with the method (Sadana & Snow, 1999). In the Ministry of Health’s KAP survey, “abstinence and the rhythm method were claimed to be the most common methods of birth control” (Gorman, 1999). While much is known about common contraceptive methods, few Cambodian women actively use one.

When Cambodian women were asked about how modern contraceptive methods work in preventing pregnancy, the answers were somewhat consistent.

The pill or injection (hormonal methods) appears to generate heat in the body and alters the balance of bodily elements, resulting in drying of the womb, other body parts and the skin, as well as the thickening of menstrual blood (Sadana & Snow, 1999)

This coincides with the Cambodian notion that a cool body temperature is required for pregnancy to occur. According to commonly held Cambodian beliefs, while taking birth control, a hot substance, conception is prevented. Herbal medicine is also used to prevent pregnancy and is effective because it increases the body temperature (Kulig, 1988). A method of birth control that Cambodian women are becoming more interested in using is called the Standard Days Method.

The Standard Days Method is founded on the idea that the average woman’s menstrual cycle is 26 to 32 days long. The Georgetown University analyzed 7,500 menstrual cycles to determine that “about 80% of all women have cycles of 26 to 32 days, and 95% of these women will ovulate and have their six-day fertile window somewhere between days 8 and 19” (Wellner, 2004). The cycles that fall in this range depend on the characteristics of the population, including age, breastfeeding status, and recent use of hormonal contraceptive.

The Standard Days Method can be explained by the following:
count the days of your menstrual cycle, starting with the first day of your period as day 1

days 1-7 : you are infertile

days 8-19 : avoid sex or use a barrier method

day 20 to the start of your period: you can have unprotected sex (Germano,& Jennings, 2006)

A convenient way for women to keep track of the days in their menstrual cycle is by using Cycle Beads. Cycle beads are a strand of beads women can wear around their neck to help track her menstrual cycle. Each day the movable ring is moved to the next bead and the individual is able to determine whether or not they are fertile, or likely to become pregnant, by the color of the bead. Cycle beads can benefit Cambodian women in many ways. First, cycle beads can help educate a woman when the most fertile time of her cycle is. "Only 12% [of women] correctly name the middle of the cycle as the most fertile time" (Northeast Cambodia Reproductive Health Program, 2000). For women that have limited access to or financial difficulties obtaining other methods of contraception, the SDM can serve as a cheap and natural way of preventing unwanted pregnancy.

METHODOLOGY

Using the knowledge gained through the review of the existing literature and personal communication with an American school nurse (Lana Newcomer, personal communication, May 2008), this project was structured to reflect how American schools currently present topics of reproductive health. A fourth grade curriculum was adapted to use with the older adolescent girls and women that were worked with in Cambodia.

A plastic replica of the female pelvis was provided to the Cambodian Women's Crisis Center (CWCC) along with translated information to accompany it at the CWCC. A presentation took place on the subject of the menstrual cycle and the changes a female body experiences. In addition to the information given to the CWCC and its' clients about reproductive health, the women also gained information about a natural form of birth control: Cycle Beads. A method of determining fertility from Georgetown University was adapted to create a necklace similar to the Cycle Beads. The Cambodian Learning Community ordered beads and made kits for each woman to create their own necklace. Each kit included a translated information sheet to remind each individual how the method works.

DISCUSSION

My literature review was very helpful in preparation and understanding the lack of knowledge Cambodian women have about their bodies and reproductive systems. I found that most women we worked with did not know when their most fertile period was, in agreement with my literature review. The majority of women we met with had already started

menstruation so it was hard to judge how much or what information they knew before it occurred.

In contrast to my literature review, I did not run into any women that strongly believed that body temperature had a direct effect on fertility. I was prepared to relate fertility to body temperature to help the women understand, but it was not necessary. My research states that eighty percent of women have a menstrual cycle between 26 and 32 days long. This statistic does not accurately represent Cambodian women that I worked with. In most cases at the CWCC and a rural clinic, women had very irregular cycles. This made it difficult to apply the standard days method and cycle beads as a natural birth control method for many of the women. The women with irregular cycles (more than 32 days or less than 26) brought up many relevant and important questions which would not have happened otherwise.

While we were first traveling to Phnom Penh, a returning scholar told me, "No project is a failure or waste of time. Even if it does not work out the way you planned, you still did good work." I did not know what this really meant in relation to our upcoming work in Cambodia at the time. Many of our projects were altered on the ground and that alone was very frustrating. I know that my work was successful, not just because I heard it from others on the trip, but from the women I worked with. My presentation sparked questions and discussions about private issues the women had never had the opportunity to discuss before. Did my project go exactly how I had prepared it? No. Was it successful? No doubt.

CONCLUSION

From the work I participated in and contributed to in Cambodia, I can only conclude that they need more involvement and help on the topic of reproductive health. Not only is it a critical topic on which to be educated, but the women are craving information. My information was given to a very small number of women and limited to my personal research and the time allotted for my presentation. One can only hope that those women take some information they learned to their communities for others. For the near future, the need for this help and information will not cease, making it very easy to see this project continuing on in the McMaster program for years to come.

REFLECTION

Advancing humanity is an idea that our learning community and many classes have been actively discussing for the past year. My project helped advance the humanity of women in Cambodia by providing information, education and the opportunity to ask questions about their bodies. This corresponds with one of the McMaster School goals, “contributing actively through sponsored scholarship and service to the improvement of the human condition worldwide.” I was able to take the knowledge I had gained through my research and better life for the individuals I educated.

Another goal of the McMaster School is “to give students the knowledge and capacities to be active world citizens and to view themselves as members of the world community.” My trip to Cambodia has helped me grow as an individual and a professional in the working community. I was able to experience poverty at its most extreme and realize the need for help in a community such as the ones we visited. I was also able to see how it is possible for me, one individual, to make an impact. I learned that nothing is impossible. No problem is too large to fight; no population is too dangerous to help.

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