Creating Sustainable Education Projects In Roatán, Honduras Through Continuous Process Improvement

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ABSTRACT

The investigators worked together with permanent residents of Roatán, Honduras on sustainable initiatives to help improve the island's troubled educational programs. Our initiatives focused on increasing the number of students eligible and likely to attend a university. Using a methodology based in continuous process improvement, we developed tutoring programs, college preparation workshops, long-term plans for a local school, and solicited involvement by an island educational coalition. Lessons learned from these initiatives may be used to expand other efforts on the island and can be generalized to other programs in Central America.

Keywords: sustainability, education, action research, continuous process improvement, Central America, Honduras

1.   INTRODUCTION

R oatán, Honduras, is internationally known as a great location for tourism. The island is a tropical paradise for divers, beach aficionados, and those who just like to sit back and relax. However, the island is not necessarily considered to be a paradise for all of its permanent residents. Looking interior to the island beyond the beautiful coasts and natural reefs, you find a lot of the problems that come with poverty, including very limited educational opportunities.

The highest level of education that can be obtained on the island is high school. Illiteracy rates are around 80% in the rural areas and about 40% in the towns. Only one in three children on the island attends school, and out of the students that do attend school, 60% drop out before completing the sixth grade (Global Brigades, 2009). Very few of the students attend college after completing their education in Roatán. If they do attend a university, it is usually in Central America or in the United States. This clearly has implications for the economic growth and social infrastructure of Roatán, as indicated by similar initiatives explored in sub-Saharan Africa (Blair, 2005).

In 2007-2008, the authors worked together with permanent residents of Roatán on initiatives to help improve the island's educational programs. Our initiatives focused on creating programs and establishing an infrastructure for increasing the number of students eligible and likely to attend a university. Although it is possible to start educational initiatives that will work for the short run, it is much more difficult to create projects that will continue after the initial organizers leave. Literature on international organizational development shows countless examples of projects that were successful until the organizers withdrew from the projects (Blair, 2005, Theroux, 2005). This challenge of sustainability in international organizational development is very similar to that experienced with continuous process improvement (CPI) projects, where a client or process-owner is encouraged to analyze and change existing practices for the betterment of his/her organization on an ongoing basis (Harrington, 1991, Rummler and Brache, 1995). Continuous process improvement projects often experience difficulty when they do not have a champion to take ownership over a change initiative from an outside initiator or consultant (Harrington, 1991).

In this work, we sought to establish sustainable educational programs for Roatán whose long-term success was independent of the authors' direct involvement. The following describes in further detail the educational and political challenges faced on the island and how we sought to overcome those challenges with educational programs that included tutoring, college preparation workshops, groundwork with local schools, and involvement with an island educational coalition to review the present educational system. In an effort to learn best practices and replicate them across the island, we chose to apply CPI methods. We used an action research approach because of its compatibility with organizational development and its collaborative nature between investigator and process-owner (Baskerville and Pries-Heje, 1999, McKay and Marshall, 2001). This work represents the first steps in a multi-year effort to help improve the educational system on Roatán.

2.   THE PROCESS OF IMPROVING EDUCATION

Our goal for this initiative was to increase the number of students from Roatán who were eligible and likely to attend a university by establishing sustainable educational programs. Sustainability is often connoted with improving ecological and environmental conditions, but here we focus on the longevity and persistence of educational programs. Both themes are included in the definition by the United Nations Commission for Sustainable Development where sustainability includes four dimensions: environmental, institutional, economic, and social (United Nations Department of Economic and Social Affairs, 1999). Education falls under the social dimension which "consists of the intra-personal qualities of human beings, their skills, dedication and experiences" (Kühtz, 2007). To capture the complex nature of sustainability, we expand Braa et al's definition as applied to an information system and apply it to the more general social system of education:

"...[it is a] challenge to make an information system work, in practice, over time, in a local setting. This involves shaping and adapting the systems to a given context, cultivating local learning processes, and institutionalizing routines of use that persist over time (as well as when the researchers leave and external funding is over)" (Braa et al., 2004).

2.1.   Action Research

To help foster this institutionalization and learning, we took an active and invested role in bettering the educational outlook for Roatán. In doing so, we adopted a form of action research to investigate and create educational programs. Action research has varying definitions but may generally be considered as "research that involves practical problem solving which has theoretical relevance" (Mumford, 2001). It has been used for improving education (Ahrens et al., 2007, Mills, 2003) and is a key methodology for organizational development (Van Eynde and Bledsoe, 1990). It gives us a way to approach a desired area of interest (A), within a given framework (F), using various methodologies (M) (Checkland and Holwell, 1998). The area of interest described here is the improvement of education on the island of Roatán, viewed through the lens of sustainable education initiatives, using CPI methods.

2.2.   Continuous Process Improvement

Continuous process improvement is known under a number of different names: process improvement (Rummler and Brache, 1995), process innovation (Davenport, 1993), and organizational learning (Senge, 1990). The philosophy is to continuously learn both from mistakes and successes, and to develop best practices that can then be more widely applied. The improvements in our study concerned three different areas: 1. Improving the education in Roatán; 2. Making our initiatives sustainable; and 3. Improving our own work practices. These different areas are individually addressed in the next section.

It was not clear at the onset of this effort what solution would be best nor was it clear how to go about achieving that solution; it was, however, clear that a partnership needed to be established between the investigators and islanders so that the discussion about the solution could be ongoing. Thus, "the only certain object of research [became] the change process itself" (Checkland and Holwell, 1998). Following Checkland and Holwell's work, using CPI methods in conjunction with an action research approach was an easy pairing for us. Although, as stated by Mathiassen (2000), the nature of collaborating with practitioners can make the associated research process difficult to control. We found this to be true with our work on Roatán.

3.   CREATING SUSTAINABLE EDUCATION PROJECTS

Our investigation consisted of iterative work that occurred in weeklong blocks onsite by the authors. The third author served as the initial and primary point-of-contact with the islanders through her volunteer work with the local clinics and schools. The first and third author worked to foster deeper relationships with the local school system, including with one particular model school called La Estrella[1]. All three authors served in consultant roles to analyze "as-is" and "to-be" pictures for the island educational programs. In addition to general project documentation, we kept reflective notes on our experiences and observations, meeting notes, email correspondences, and we had formal and informal interviews with administrators from five schools with eight students and two parents. A timeline of investigative activities is outlined in Table 1.

Table 1. Timeline of Investigative Activities for Roatán

Activity	Date
Need identified by Author 3 for SAT training	Spring-Summer 2007
Assessment and planning by Authors 1& 3 of educational problems	Summer 2007
Author 1 taught SAT class	September 2007
Author 1 continued needs assessment and planning	Fall-Winter 2007
Authors 1 & 2 worked at local school and conducted interviews	March 2008
Authors 1 and 3 issued follow-up communication	Summer 2008
Authors 1, 2, and 3 conducted analysis of programs	Fall 2008

Following Braa et al (2004), initiatives had to be shaped and adapted for a particular context. In our work in Roatán, an important step in creating improvements was to assess the barriers that had to be overcome. A list of barriers was obtained through interviews with six school administrators. After an analysis of the interviews, the following five barriers emerged as themes:

1.   There is a lack of qualified teachers, and there is a lot of turnover in existing teachers. This barrier is especially serious since only residents can teach in Honduras. Qualified foreigners who are willing to teach are not legally allowed to do this in Roatán, unless they obtain citizenship.
2.   Students receive very little education, and especially their mathematical skills are very poor. It is not uncommon for students to test at a level that is several grades lower than the one they are enrolled in.
3.   There is a general lack of basic resources for education such as learning materials, scholarships, furniture, and classrooms.
4.   Most students do not see attending a university as an option, so they do not prepare for it in the final years at their high school.
5.   School administrators at the bilingual schools are passionate about the quality of the education they provide, and they love the idea of improvements and working together with other schools. However, their schedules do not allow for more interaction, and there is very little inter-school communication.

3.1.   Improving Education

With these barriers in mind, the attention shifted to education in Roatán, the first area of improvement. The authors pooled their expertise in higher education, process improvement, and consulting to initiate several educational programs. In the sixteen months that we have so far worked on the island, we have initiated the following:

1.   We created and delivered one-week SAT and college preparation classes to high school students. We delivered the class to two different groups, and had a total of 28 students. We also helped 10 students to sign up for the SAT exam.
2.   The SAT classes showed the need for tutoring, and we started a program to deliver one-on-one and small group tutoring. In the first 16 months, a total of 15 students received tutoring.
3.   Even though La Estrella was one of the most successful schools in Roatán, it still had several challenges, and we helped structure its financial administration and long-term planning. We also helped secure volunteer construction work for La Estrella.

4.   We began conversations with an educational coalition on the island about ways to collaborate across schools and share best practices.

3.2.   Addressing Sustainability

The focus of our work now has moved to the most difficult stage: making the initiatives sustainable. As difficult as it is to make improvements to education, the real challenge is in making the improvements permanent (Kühtz, 2007). Many international development projects collapsed once the project initiators left (Theroux, 2005), and we wished to avoid this end. This section focuses on the various challenges experienced in moving towards sustainable educational programs on Roatán.

We are very aware of the challenges and opportunities that we face as we seek ways to make the projects self-sustaining. We have categorized these areas as organizational and technical challenges and opportunities, and describe them further as follows. As we progress with this effort, we recognize that we cannot necessarily change the challenges but must seek to understand them in order to overcome them. This continuous cycle of learning and reflection is an integral part of action research (Checkland and Holwell, 1998).

First, we present the organizational challenges and opportunities present on Roatán. Overarching are the financial and organizational limitations to the initiative. This is an all-volunteer effort with limited financial resources. The investigators launched this initiative as a *pro bono* consulting venture to aid members on the island who had little discretionary funding and were often already challenged to pay even the mortgages on their school structures. In addition to these financial limitations is the need to be sensitive to the existing organizational structure of the island. For example, any educational initiative cannot offend current educators on the island or their unions. The goal is to work together within the existing infrastructure. On the more positive side, there is a lot of support on the island, and a strong willingness by people to help. There is also a broad recognition that education on the island is in a really bad state, and that something needs to be done.

Next, we examine the numerous technical challenges on the island caused by the environment and lack of supporting infrastructure often experienced in developing areas of the world (Blair, 2005, Shanahan, 2008). Internet access on the island is very limited, personal computers are not very common, and those computers that are there tend to be very old or weathered by the tropical conditions. Electricity is very unreliable; on average the electricity is out for several hours every day and has spawned recent unrest on the island to protest rate increases by the local provider (American Citizens Services Unit Consular Section, 2008). The voltage on the power grid is very low, which means that computers, projectors, and other such devices do not last very long. Knowledge of technology is generally very limited with few experts residing on the island. As a result, educational materials have to be paper-based because the programs cannot depend on Internet connectivity or computer access. An encouraging factor is that increasingly more laptops are being donated, and the electricity is becoming more reliable.

Following the literature, one of the key factors in promoting sustainability is to find local people that can take over the organization. What made a local clinic a success was management by people on the island who served in the roles of director and as several of the doctors in addition to the part-time residency of an American doctor. Our best chance of making the educational programs sustainable appeared to be to have management taken over by local islanders.

In Roatán, local means either Honduran, or a resident foreigner who has come to the island. A large number of the volunteers that participate in the program will come from the United States and likely Europe. However, we would like the program to be run by locals. Once the program is running, the authors should be able to withdraw from program management, so the focus can change to collecting more data, and to initiating the program in other areas of Central America and/or on different educational projects in Roatán.

Fortunately, many of the small business owners as well as other islanders, and the foreign residents are very much interested in giving back to the island and in investing in its future. In addition, students who express interest in studying at a university at the same time adamantly state that they want to return to the island once their education is completed. It will be important that we harness these willing parties to help sustain any educational initiatives. For

example, students who get tutoring can then volunteer to become tutors. Further, students should be encouraged to be the visionaries for future programs.

Lastly, there is always a need for funding sources. Monetary backing makes possible more resources over a longer period of time. Financing that is properly aligned with local culture and educational systems makes possible sustained human development initiatives (Blair, 2005). Likely sources of funding for educational programs in Roatán will come from external agencies and non-profit organizations.

3.3.   Improving Our Work Practices

The third area of improvement concerned our own investigative work. Working in Roatán was a learning experience for all three authors. From our experiences, we drew a number of lessons learned regarding both organizational issues and personal challenges. As we continue with our work, we try to be mindful of those lessons. In a sense, it makes us more professional and effective. These lessons are outlined in Table 2.

Table 2. Lessons Learned

Organizational Lessons Learned	Personal Lessons Learned
Out of every five people that commit to volunteering work, only one will show up. But that one will likely do the work of three people.	Take care of yourself first. If you burn out you cannot work with pleasure or efficiency, and your productivity will go down.
Volunteers should do whatever they decide to do. Do not try to force them to do things your way.	Expect that a gift horse will be looked in the mouth. Even though you are working for free, people will still criticize your work. Ask the critics to help you do the work better.
Look for synergies. Build a network of people. Get to know who would be able and willing to perform particular tasks.	Figure out what your strengths are, and find a balance between being disciplined enough to do what has to be done, and being playful enough to do what you will enjoy doing.
Do not start with the worst, most needy cases. Start with what works and strengthen it. Then grow, and share what is learned.	Deal with the ethical decisions as well as you can, and learn from them. For instance, how do you justify helping some, but not others?
Do not take a North American perspective of what the problems are. An air conditioned room is almost a necessity for us, but it is more of a luxury for the students. Being able to get home after tutoring or class is more important to them. Do a proper needs assessments with all of the stake holders.	Volunteer because you want to, not because you want to see gratitude in others.
If you can define a project with clear benefits, then you can usually find the money that is needed.	

3.4.   Initial Indicators of Success

After understanding the existing conditions for implementing programs on the island, we then must learn how to identify if these programs are successful. To move towards sustainable initiatives, there should be some indication that the initiatives are successful and their continuation should be supported. The investigators are encouraged by some initial indicators of success from their educational programs started on Roatán regarding student enthusiasm and preparedness.

First, students were eager to participate in the college preparation and tutoring programs and these programs led to the matriculation and initial success of some students in higher education programs. Regarding the SAT and college preparation classes, there were ten students enrolled in the first classes and thirteen who enrolled in the second set of classes. Second, two of the students that participated in the first SAT class in early 2007 obtained

scores that allowed them to study in college in the United States, and one other student enrolled in a college in Panama.

Third, the financial system and long-term planning advice provided to La Estrella resulted in the director's ability to hire and delegate her bookkeeping to an administrative staff member. Finally, out of conversations with the educational coalition and other interested parties on the island, we decided to start a non-profit organization to help fund students to attend private schools on Roatán and provide college scholarships. The organization's board consists of members from the island and abroad.

4. CONCLUSION AND FUTURE WORK

This research sought to establish sustainable educational programs on the impoverished island of Roatán, Honduras. The authors used a methodology based on continuous process improvement to assess the educational needs of the island and implement relevant programs. As a result, the authors developed tutoring programs and college preparation workshops, provided long-term planning for a local school, and solicited involvement by an island educational coalition. This work has had concrete benefits in the form of ongoing educational programs on the island of Roatán. It has also produced knowledge in the form of better understanding of the educational situation in Roatán and lessons that may be applied to future work.

Currently, the structure of the educational programs that we have initiated is somewhat amorphous, but we consider this to be a good thing. Having a fuzzy front-end to the project means that all of the champions are not yet set and anyone still has the opportunity to take ownership of a project, including the local islanders. We believe the islanders should determine when and how this transition from consultant to client takes place, not the authors. We would leverage our expertise in continuous process improvement to help educate and train potential champions and process-owners about how best to go about initiating that change.

Thus, the next step in this multi-year work is to analyze the long-term sustainability of these educational programs to ensure they will continue without the participation of the authors; it is important that whatever initiatives that we started will persist after our permanent withdrawal from the island. This persistence is contingent upon proper ownership of programs found to be successful; this ownership includes responsibilities for finding funding, soliciting volunteers, and managing the direction of the programs. We have begun establishing such necessary partnerships through the launching of a non-profit organization. This organization was formed in conjunction with several local islanders to financially support students in their quest for more education. Such efforts indicate that sustainability of educational programs in Roatán has begun.

AUTHOR INFORMATION

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