

stability through sustainability





introduction

In the spring of 2008, the non-profit organization Hands Along the Nile Development Services (HANDS) approached designer Michelle Bayer to volunteer design services to a paper recycling studio in Cairo, Egypt.

The studio in Cairo was run by an organization called the Association for the Protection of the Environment (APE). Among other initiatives, the APE teaches women of the city's garbage collecting community (the Zabbaleen) how to recycle textiles and paper into products that they can produce and sell for income.

During this time, Bayer was working with the Design Division in the College of Fine Arts at the University of Texas at Austin. She approached the Design Student Association (DSA) with the project, and they enthusiastically agreed to take it on.

The goals for the project, at this point, seemed relatively straightforward:

- 1_ Design a new line of paper products for the studio to produce
- 2_ Travel to Cairo for a week in December 2008
- 3_ Implement the proposed designs.

HANDS

Hands Along the Nile
Development Services

HANDS is an American not-for-profit organization that is committed to building bridges between the people of Egypt and the US. In addition to their programs of exchange and dialogue, HANDS also supports projects aimed at bringing socioeconomic stability to Egyptian communities.

HANDS believes that this helps create an environment in which democratic ideals can flourish and those susceptible to radical ideologies find peaceful and productive means of pursuing their life goals.

A key to bringing stability to this region is empowering communities to tackle their own problems through participatory decision-making and responsible self-governance.

At the same time, for Americans in these tumultuous days, it is imperative to cultivate relationships with the people of the Middle East.

from the HANDS website:
<http://www.handsalongthenile.org>

APE

Association for the Protection
of the Environment

APE is a program dedicated to preserving the environment while improving the lives of those who live and work amidst city waste. In poor areas of Cairo, entire families live on trash dumps, earning their livelihood by collecting and sorting the city's garbage at their homes. These areas are often called "Garbage Cities."

APE offers an opportunity to girls and women from garbage collectors' families to receive education and training, and engage in income-generating activities. The girls attend literacy classes, so that they can later continue their education.

APE teaches young women to use recycled materials to create colorful rugs, cards and stationary. The girls, who are taught either weaving, quilting, or paper-recycling, receive income for the products they create.

from the APE website: <http://www.ape.org.eg>

DSA

Design Student Association

The DSA is a student run organization at the University of Texas at Austin in the Design Division of the School of Art and Art History.

The DSA focuses on investigating the career and educational opportunities of its student members, and to plan events and engage the larger campus and Austin community through client based projects.

from the UT website:
www.finearts.utexas.edu/aab/special_programs/index.cfm

zabbaleen

The Zabbaleen are a group of people who have had the traditional role as garbage collectors in Cairo since 1900. Since that time they have developed a successful system of recycling. Recycling approximately 80-90% compared to the 20-30% in most Western countries. Though a crucial part of the community and city of Cairo, they are an unappreciated people and are denied basic amenities of urban life. They have gone through unmanageable struggles that have included living in appalling conditions as well as numerous evictions from their settlements and competition with multinational garbage collecting corporations.

Fortunately with the response of international organizations, there has been a significant reduction in poverty and substantial development of the community. The evictions began in 1970 when the Zabbaleen were evicted from the squatter settlement of Imbada and moved to the current settlements of Moqattam, Torah and Kattameya. Conflicts began to emerge with the local government. The rights of these people and the overcrowding of families as well as the lack of water supply and sewage disposal left the Zabbaleen in even worse conditions. International organizations responded to this crisis and knew that something had to be done to legitimize the Zabbaleen's role as part of the city of

Cairo. In 1981, a partnership was formed between the Zabbaleen community and the Environmental Quality International (EQI) and in 1984 Association for the Protection of the Environment (APE) built upon this partnership to strengthen the community and reduce its devastating poverty. These organizations were steps in a process to transform these communities, particularly Moqattam, beginning with an important initiative to improve sanitation within the area and setting up programs and committees to overcome and tackle other problems as they came up. However it was not until the Zabbaleen community was involved in their own decision-making and development activities that the community began to substantially transform. This led to autonomous decisions by the Zabbaleen community themselves to set up health and education centers, as well as projects that emphasize the importance of using the available resources and the community themselves to initiate prosperity and stability through sustainability.

Information paraphrased from: The Torah Zabbaleen...from Tin Shacks...to High Rises by Wendy Walker, 2005.





preparation

The DSA began their involvement with the project the fall semester of 2008. The goal of the project was to create a new line of products, therefore we followed a typical Product Development process (see diagram on left).

The first step of the process was to define the problem: Develop a new line of products for the APE paper recycling studio in Cairo.

Second, conduct research. Students in the DSA formed groups to research the following topics:

Cultural Research_ Students collected information regarding Cairo's history, current social topics, fashion, food, religion, art, architecture, city planning, environmental topics, and politics.

Current Product Assessment_ Using photos and samples of current products (see image to right), students analyzed the current project line to find design opportunities.

User and Market Data_ Students defined the target consumer and analyzed where are products are currently being sold, the competition, as well as current trends.

Materials and Processes_ With limited communication to the actual studio

in Cairo, students used photos of the facilities to determine what materials and processes are currently being used, what is underutilized, and what equipment is available to us.

With the research complete, students analyzed the information and *redefined* the problem. Redefining the problem is a crucial step in the design process. Once the research and analysis are complete, often it is apparent that the original problem definition does not address the actual problem you are attempting to solve. Students felt that although the paper products were of high quality, they were not taking advantage of the material, particularly their handmade qualities. For example, the cards with the beautifully intricate embroidery showcases stitches on fabric, not handmade paper. Therefore our problem redefinition became: how can creating a new line of products highlight the qualities of handmade paper?

With this in mind, we began our initial concept generation. Although it soon became evident that most of the design work would have to wait until we were in their studios in order to fully understand the available facilities.





A P E c a m p u s

With the help of charitable donations, Ayham Ghraoui (design student from the DSA), Brian Bedrosian (architecture graduate student at the University of Texas), and Michelle Bayer (lecturer at the University of Texas) traveled to Cairo for eleven days in December of 2008 to work with the paper recycling studio.

We drove up through the Zabbaleen town of Moqattam and arrived at the APE campus. In addition to the craft studios, the campus houses a day care and a school for children of the women who work in the studios, medical facilities, product showrooms, and an orchard and garden. The orchard and garden is in the center of the campus. This area was once used as the compost dump (see before and after images on the right). It is currently filled with fruit trees and vegetable and flowering plants, some which are used in the papermaking process.

The majority of the craft studios are housed in the building pictured in the image to the left. The ground floor is the Paper Studio and the second floor is the Textile Studio.

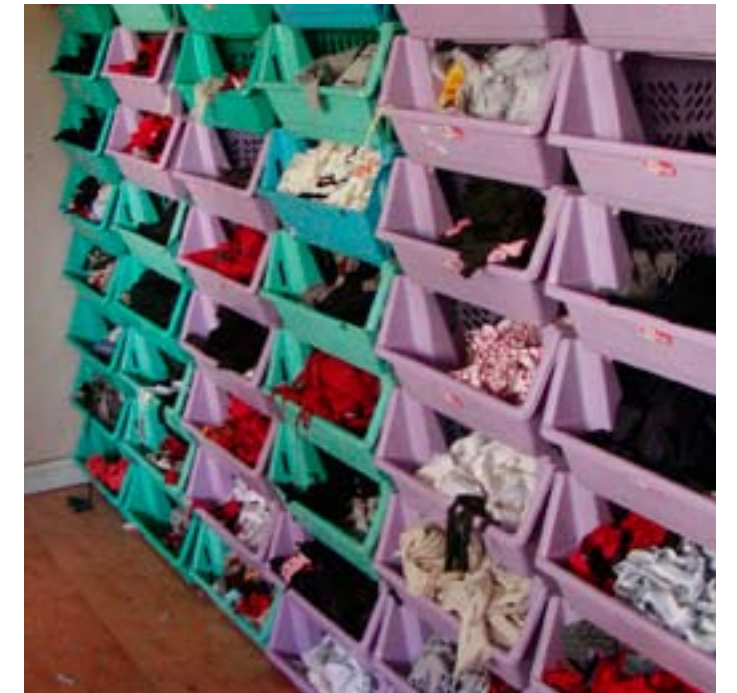
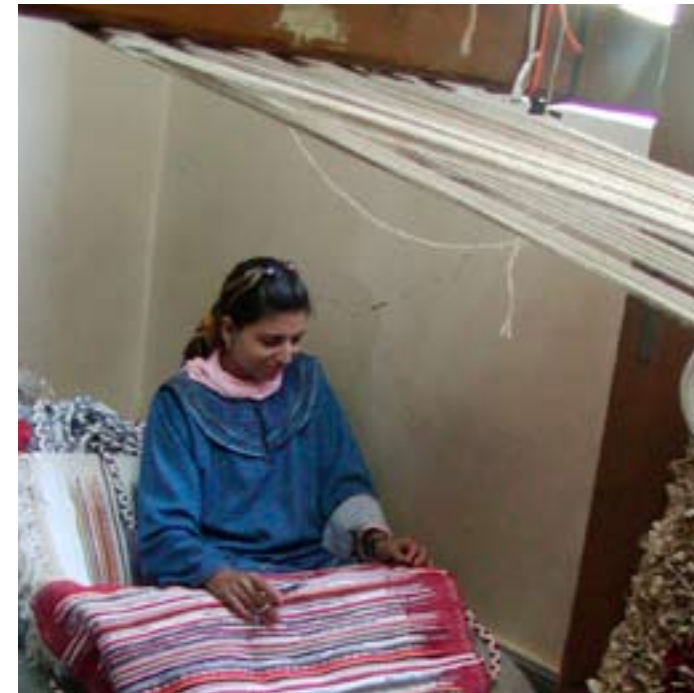




textiles

The first studios we toured were the Textile Studios. Here, women are taught how to weave and quilt. The materials they use are remnants from local textile factories. Some of the wide variety of products they make are: rugs, bags, towels, placemats, blankets, table runners, soft baby books, ornaments, etc.

These studios felt very much like an artist co-op; everyone was working on similar pieces but each woman was able to incorporate her own creativity by choosing the materials, colors and patterns used in designing the piece.





paper

After visiting the Textile Studios we went downstairs to the Paper Studios. The facility was divided into four main areas: the office and showroom, fiber preparation and pulp beating (images on left and right), wet studio for sheet forming (left image on following page), and a dry studio for product assembly (bottom right image on following page).

Unlike the Textile Studios, where emphasis was put on the uniqueness of each product, the emphasis in the Paper Studios was on producing consistent and repeatable product, which is typical in paper manufacturing.

Touring the facilities gave us a much better understanding of the kinds of equipment that was available and the systems that are being implemented to create product.

With this understanding, many of our preconceived designs were eliminated, but it also opened the door for many more opportunities.





design work

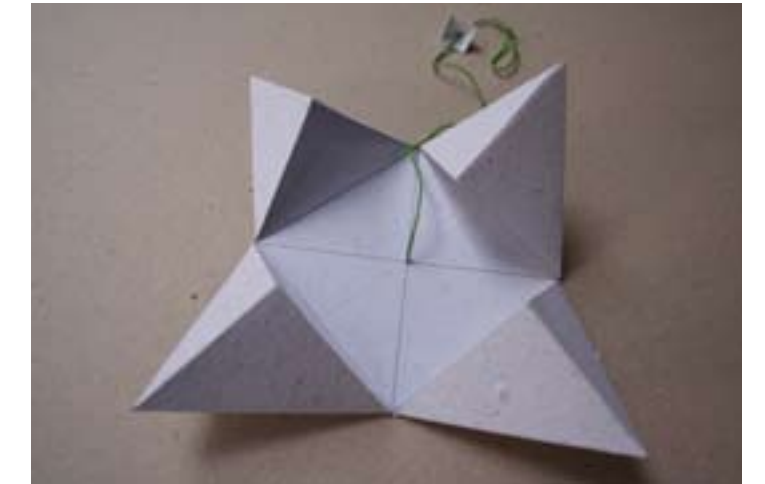
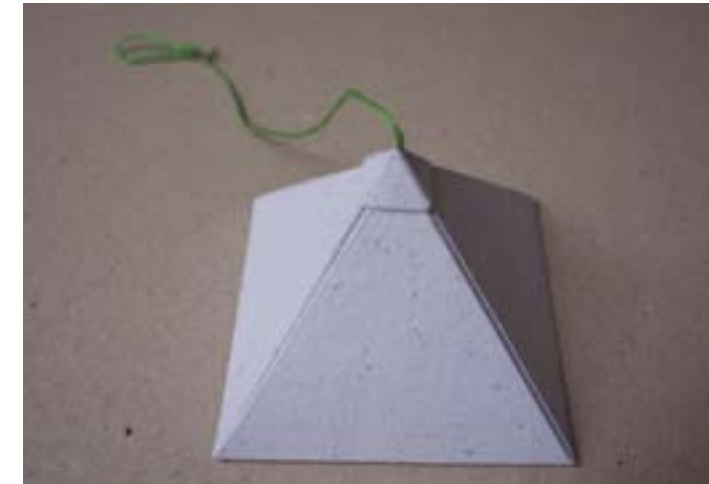
Solving problems and introducing new products.

While we were getting acquainted with the facilities, we compiled a list of requests from Nicole Assaad (who is in charge of the paper studio) and the papermakers.

The first request we worked on was strengthening their long narrow gift bags. These bags, which are a high volume product, are typically used to carry heavy bottles of wine or oil. They expressed their frustration about bottles breaking through the bottom of the bag because the construction was not strong enough for such heavy weight. We altered how the bottom flaps were folded and glued together and added an insert of cardboard reinforcement. These changes allow for greater dispersion of the weight of heavy bottles, thus creating a stronger gift bag.

Another request was for creating a new design for a candy box. These boxes are commonly used as party favors at weddings and the studio receives many requests for them. Our design, in the shape of a pyramid, opens up to reveal four sweets.

Next, we looked at refining a stationary set they currently produce, which holds handmade envelopes and note cards. The current stationary set, although a good idea, was a little too large, which made it cumbersome and flimsy. Our redesign made it more compact and sturdy, as well as reduced the amount of material needed to contain the envelopes and note cards.



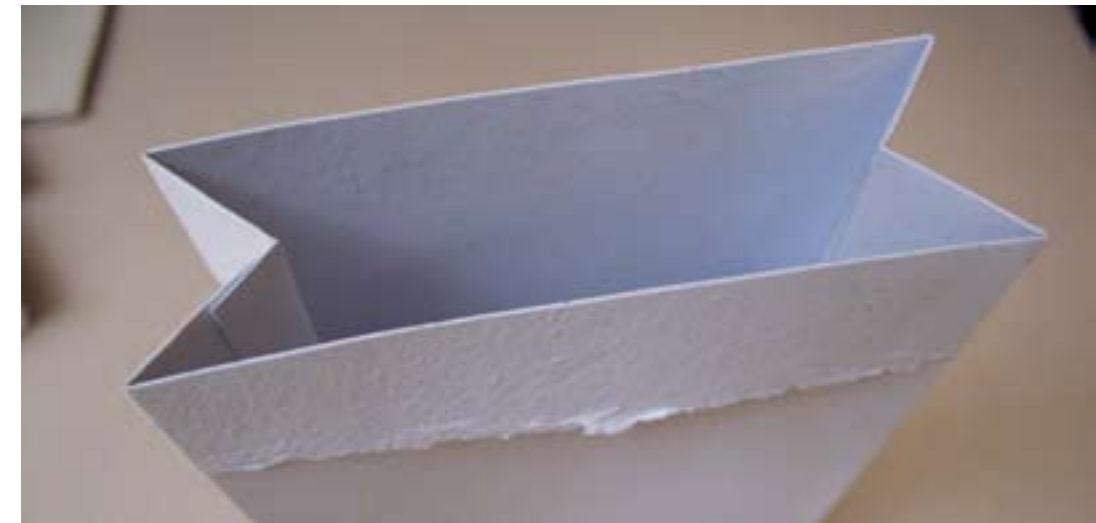
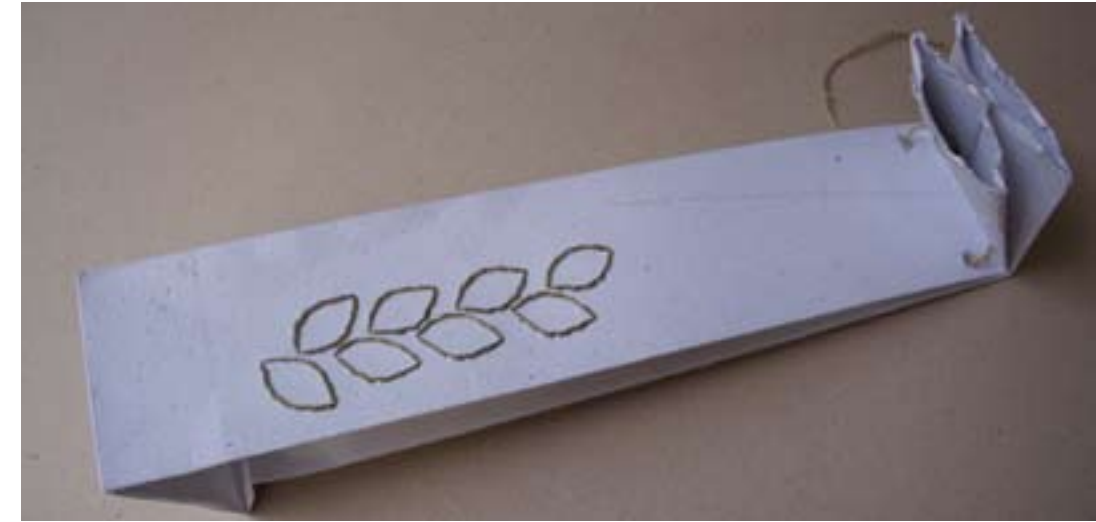
design work

Emphasizing the handmade paper and its qualities.

One concern of Assaad's was that there is an increasing amount of competition of recycled paper products and her desire that the APE products stand out in the market. This brought us back to our research and analysis of how the handmade paper might be highlighted in the new lines of products. If we emphasize the "handmade" (not "crafty") elements of the products and take advantage of the elegant materials they are working with, the products they produce can and will definitely stand out in the marketplace.

One direction we explored was to embroider directly onto the paper, instead of adhering embroidered cloth on the paper. This allows the paper to become the product, not just a vehicle for the cloth, thus giving more importance to the handmade paper. This technique can be incorporated into cards, envelopes, gift bags, etc.

Another direction was to leave the natural, or "deckled," edge of a sheet of paper on select parts of the product. Such as the folded rims of a gift bag (images to right), or the opening edge of a greeting card. This gives the suggestion of being handmade without being crafty.





design work

Shifting from product to technique.

As we were working on the previous products, one of the women, Noura, wanted to show us how she made the marbled paper that is used for the decorative gift bags.

The three of us watched her float tempera paint on wheat paste, swirl the pigment, and dip the sheets of paper into the mixture. We immediately noticed something different in the way she was working. In the dry studio, where she folds, glues, and assembles products, she is making “mass produced” products. Out here, in the marbling area, she is able to control the creative aspect of making, much like the women in the Textile Studios.

After some discussion, we came to the conclusion that instead of designing products and producing patterns for the women to copy, we need to teach them techniques that they can build upon and improvise according to their own creativity.



design work

Shifting from product to technique.

In addition to addressing their requests, we put together some impromptu workshops in order to teach new techniques that the women could implement.

The first involved screenprinting. We gathered some organza for the screen, an embroidery hoop for the frame, and white glue for the resist. After we stretched the fabric in the hoop, we traced a design onto the fabric and painted glue everywhere we didn't want ink to seep through. After it was dry, we used the tempera ink from the marbling process and cardboard as a squeegee to print onto paper. (This technique was inspired by a demonstration by Beatrice Thomas, a local Austin artist).

It was amazing to see the difference of excitement from showing them how to strengthen a gift bag to teaching them how to screenprint. Now they were thinking about the opportunities this technique gives them.





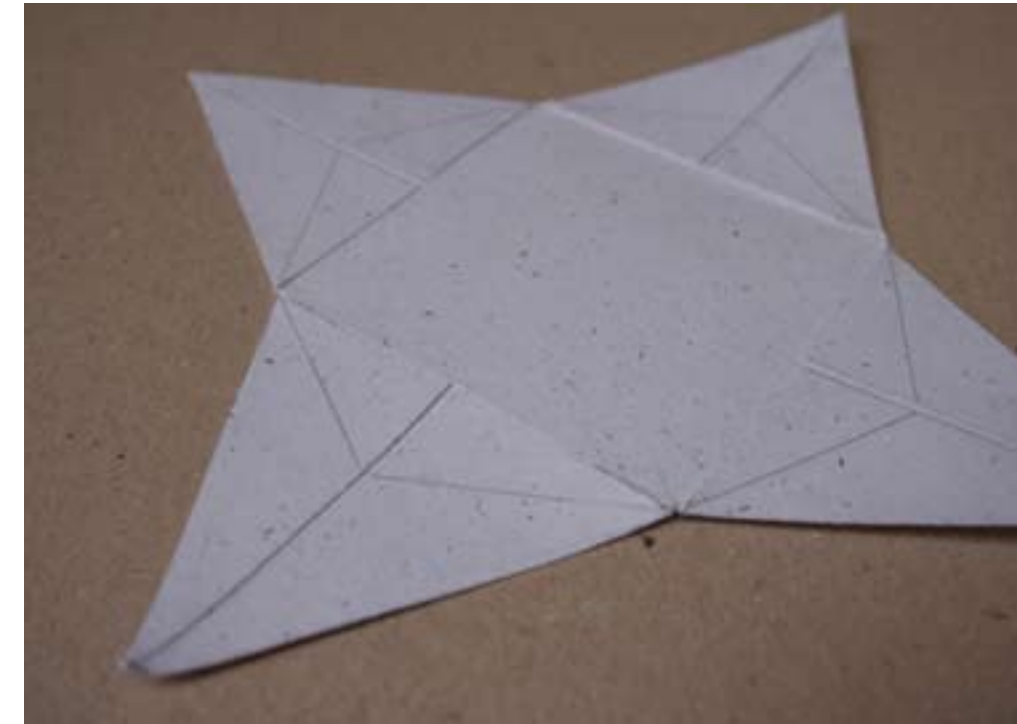
design work

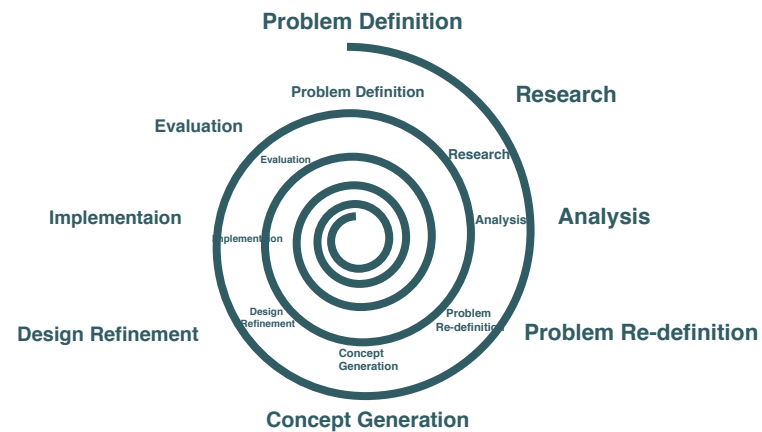
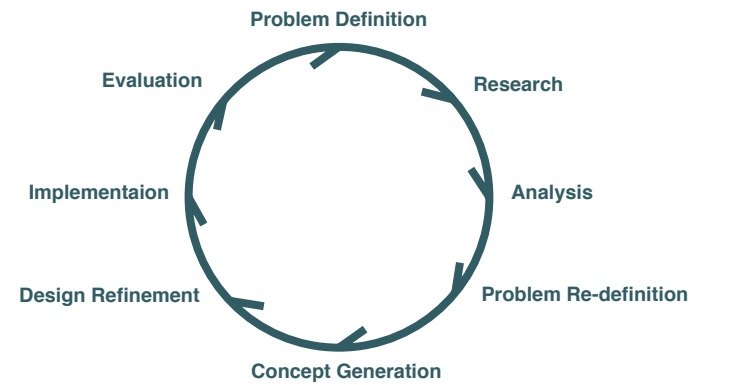
Shifting from product to technique.

The other workshop we conducted was on bookbinding. Books are incredibly versatile objects and the techniques used in making books can be carried over into other products, such as boxes, frames, invitations, etc. Once the techniques are learned, they are easily adapted to specific applications.

The image on the left shows a Coptic bound book one of the women made during the workshop. The cover is embossed with a papyrus design (another technique shown). The women also made books with stab bindings and single and double signature pamphlet bindings.

In regards to the products we did design, such as the gift bag, candy box, stationary set, etc., we were aware of the difference between copying a pattern and understanding the pattern. We wanted to make sure that the patterns were clearly understood so they were able to alter them according to future need. To do this, the women created their own patterns for each of the designed products, instead of relying on the patterns we left.





conclusions

The experience we had with this amazing group of women suggests that we rethink the assumptions present in our original Product Development process. As mentioned previously, this process (as seen in the upper left diagram) is linear and consists of defining a problem, researching and analyzing, redefining the problem and solving it.

When the project becomes more involved, this linear process becomes circular (as seen in the middle left diagram) because your solution feeds back into your original problem. Although you are approaching the problem with new experiences, you are still going in circles and not progressing.

The bottom diagram illustrates the process we feel reflects our experience best, as it allows the unpredictable to influence its path, without sacrificing the ultimate goal. As one goes through the process of problem definition, research, analysis, etc., one is constantly questioning and being bombarded with new, unpredictable experiences that involves an evolutionary process of improvisation and experimentation. These questions and experiences lead to new ways to frame the problem definition while still heading towards the same goal.

Future collaborations between the APE and the DSA.

The DSA now has a better understanding of the APE and its facilities and is very willing and excited to pursue further collaboration with the APE and HANDS. One way to do this is by organizing a series of design workshops with the women who work at the studios, resulting in a new product line. Hopefully these workshops would have a profound effect on the community by allowing us the opportunity to share knowledge, not apply knowledge.

