

INDUSTRIAL DESIGN COLLABORATION WITH AID TO ARTISANS GHANA

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This is a project that began with a very narrow focus, entitled: Integrated Rural Arts Product Development Innovation: 3-D computer-aided Concept Visualization Methodology.

The objective of this activity was to provide Ghanaian artisans an opportunity to view photorealistic 3-D virtual product concepts comprised of traditional design, form, and function to serve as design inspiration. In addition to juxtaposed traditional design, visualization of product concepts integrating assemblies of components from artisans of different regions.

The hypothesis is 3-D computer-aided concept visualization will encourage collaborative relationships with diverse artisans resulting in an expanded breadth of ethnocentric contemporary and perhaps innovative products capable of responding to and capturing segments of rapid changing western markets.

Two organizations served to facilitate this project, Aid to Artisans Ghana (ATAG) and Kwame Nkrumah University of Science and Technology (KNUST), Department of Integrated Rural Arts & Industry (IRA). Aid to Artisans Ghana is a local non-governmental organization that offers practical assistance to artisans and works in partnerships to foster artistic traditions cultural vitality and community well being. Through training and collaboration in product development, production, marketing and business development, ATAG fosters sustainable economic and social benefits through employment creation and income generation for crafts people in an environmentally sensitive and culturally respectful manner. ATAG was also responsible for securing the primary funding for the project through the United States of America Agency for International Development (USAID), the Ford Foundation, and private donors. Funding for the collaborative work with the KNUST Department of Integrated Rural Arts & Industry came exclusively from the Ford Foundation.

ATAG and IRA are long time collaborators. ATAG headquarter in Accra, located at the International Trade Fair Center. Also located on site are the field office, gift shop, gallery and new Internet Café and Media Center. Field office, gift shop, and gallery located at Kumasi, in the Ashanti Region. Accommodating a wider spectrum of artisans nationwide, ATAG has established an office in Bolgatanga, in the Upper East Region for the Northern sector artisans; offices in Kpando in the Volta Region, and at Mankessim for the artisans in the Central Region.

The field representatives dispersed throughout the country is native to their respective regions and graduates of IRA. Matriculating students and graduates have multiple obligations to intern with individual craft production companies or craft production communities, depending on their areas of academic specialization. Graduates of IRA are mandated by the state to serve one year of national service in there respective discipline.

Undergraduate third year second semester students, by virtue of the IRA department course structure are assigned field internships focusing on two distinct media within the curriculum. The media concentrations are Wood, Metal, Clay, Straw, and Textiles.

IRA has a participating network of craft production companies or craft production communities throughout the country. Students rotate between production areas and producers working in their

selected media for (2) six-week periods for the semester. Preferences are granted to ATAG affiliated producing areas and where ATAG is currently providing interventions through projects. This relationship provides an opportunity for ATAG to monitor and track the program progress.

Establishing a digital media center

Discussions regarding the Establishment of the ATAG Media Center began after twenty-four months and several visits to Ghana. Conceptual demonstration projects were completed and presented on subsequent visits. With the positive reception of the 3-D computer-aided concept visualization methodology, the board of ATAG was receptive to the development of an onsite Media Lab. Establishment of a Media Lab served to satisfy a component of ATAG objectives, which is to improve the technical assistance in production capacity to crafts people producers and exporters.

The strategy for establishing the media lab began with the preparation of a comprehensive proposal, which identified the constituency, facility, technology, and personnel. Fortunately, USAID, ATAG's primary source of funding was receptive to the proposal of expanding the technology component, confirming the media center's mission to offer technology education to artisans with sensitivity to preserve artistic traditions cultural vitality and community well being. USAID funded the proposal in its entirety.

Ancillary to the proposal was the request for an academic scholarly sabbatical, which coincided with the physical establishment of the Media Lab. Fortunately, the timeframe for faculty eligibility; seven years service minimum qualified me for the sabbatical.

With funding secured and supplemented by the Ford Foundation and private donors work began on the Media Lab. ATAG had a two-story unfinished octagonal building on site, which served as a storage facility identified as the future site of the Media Lab. An architectural design-build firm began renovation of the structure. With construction underway, procurement of technology equipment and software commenced. Procurement of computers, peripherals, and software took place in the USA and shipped via airfreight to Accra.

With the approval of the academic scholarly sabbatical ATAG arranged to accommodate my wife, daughter, and me. We arrived in Accra several weeks prior to the completion of the facility and one week before the arrival of the computers. Fortunately, I enjoyed the company of wife and daughter for the initial two months after which they returned to the states.

Completion of the physical structure, included addition of a second level, poured concrete floor, walls, windows, stairs, and air conditioning. ATAG staff designed and fabricated the computer workstation furniture on site. Installations of ten general-purpose computers were located in the lower level and ten high performance workstations installed on the upper level.

The lower level of the structure is a Cyber Cafe and teaching facility with limited library resources. The upper level accommodates high-end graphic classes and production. Several months after the establishment of the Media lab, ATAG added a high-resolution 3-D rapid prototyping system.

Media Center Course Development

Initially the Media Center was to serve as a computer training and product development facility. Artisans would receive training in basic computer literacy, internet browsing, and graphics. The 3-D computer-aided Concept Visualization Methodology served as a key component in Product development.

Many of the artisans had limited to no experience with computers. We believed it essential that a minimum level of computer competency was essential to take full advantage of the facility. Short courses in basic computer operation and internet browsing especially Goggle Image Searching proved beneficial.

Shortly, after the Media Center opened it was determined that the facility should be accessible beyond the artisans population and self-sustainable. Consequently, the lower level of the Media Center became a Cyber Café, generating funding to supplement other activities. This proved to be far more successful than anyone had anticipated.

Conceptual demonstration projects of 3-D photorealistic digital images created much interest among many artisans and non-artisans alike. Utility graphic applications used in developing presentations such as Adobe Photoshop, Illustrator, Macromedia Dreamweaver, and Indesign attracted attention and many people inquired about learning. The tools routinely used in the upper level of the Media Center for product development and presentation became sought after for courses.

Artisans and others were particularly interested in 3-D modeling. Alias StudioTools serves as our modeler of choice in the NCSU curriculum, we chose Rhino3D as our modeler for reasons of capability and cost. We also established ATAG as the sole distributor for the product in Ghana.

A series of 3-D modeling courses were prepared including; Intro to 3-D modeling, Advanced 3-D modeling, Jewelry Modeling, and 3-D modeling for Rapid Prototyping. Each of these courses has duration of 4 to 5 days. Additional courses included Digital Product Photography, Introduction to digital graphics (Photoshop, Illustrator, and InDesign).

Initially I was responsible for teaching each of the above courses, over time the staff have master the programs and teach the introductory courses. In addition, national service students have matriculated the course and served as instructors over there term of service. I continue to teach the advanced level courses, particularly the 3D modeling, Jewelry Modeling, and 3-D modeling for Rapid Prototyping.

Product Design and Development and Artisan Business Training

Product design and development has included the task of adapting and/or modifying existing products as well as creation of new products from local design motifs. Artisan business training has included presentations demonstrating the conceptual integration of product components manufactured by various artisan specialists. Expanding the awareness of artisans capabilities serve to bolster confidence that potential production level can support export ventures.

Presentations and demonstration of new technologies for design and development is the focus of here. Identification and recommendation for the adoption of appropriate design software for product concept visualization was a key task. Planning for training ATAG field representatives is

an ongoing progress. Review and revision of guidelines for quality control standards based upon enhanced product development methodologies.

Curriculum development: KNUST, Department of Integrated Rural Arts, & Industry

ATAG and KNUST, Department of Integrated Rural Arts & Industry has enjoyed collaboration for years. Artisans and producers affiliated with ATAG routinely contribute to the department by serving as lecturers, and intern host. Through a grant awarded to ATAG from the Ford Foundation, ATAG purchased computers, peripherals, and publications for the department. For a portion of one term, I served as a visiting lecturer and shared this responsibility with two other designers from England and Germany. Our schedules were such that we were not present at the same time, consequently splitting the term among the three of us; however, we collaborated via the internet for the duration of the term.

Department of Integrated Rural Arts & Industry in collaboration with ATAG are interested in integrating elements of Industrial Design into their curriculum. Each of the three designers contributed their respective expertise to the students. Technology of course was my area of contribution. With the arrival of the ATAG / Ford Foundation, grant computers it was my responsibility to implement their operation. Upon the arrival of the computers, we discovered that a significant portion of the university was the beneficiary of installed fiber optic networked cable. To our surprise, the designated building for our computers was among them, we simply had to have the cable extended into our room. Need-less-to-say this expanded our capabilities tremendously. I discovered that students in the department traditionally research products in periodicals two or more years old. Moreover, in some cases the research only extended to the shops in the immediate village. Even though many of the students were computer literate, they never engaged the computer for anything beyond web surfing, email and word-processing.

The first web base task was to perform a google image search on their designated product and related products. Students were shown how to copy image(s) from the web and save them to a disk. Several students were thrilled to discover that through their search they were presented via google, products that were design and produced by artisans in neighboring villages.

Beyond elements of research techniques, students engaged in a short duration design competition. Ghana was the beneficiary of an exhibit from the Vitra Design Museum called "Take a Seat" which was hosted by the Goethe Institute. The exhibition featured one hundred miniature chair models representing one of the most extensive collections of international chair design classics developed since the early 19th century.

The main goal of the two-week exercise was to introduce students to the Product Design Process. Each student was assigned the task to develop a design for a seat and fabricate a miniature model in the scale of 1:6. Serving as a foundation for this task was a series of lectures on product design, Western design, traditional African product design, Influences of Traditional African product Design on contemporary Western Design, and contemporary African Design. In addition, field trips were made to producers and wood processing facilities including one unique facility that processes bamboo into building materials for retail and commercial use.

Graduate Thesis Projects

West Africa is replete with historical significance that already pervades volumes. We have encouraged the interested graduate students who travel with us to the Ghana to consider contributing to those volumes, by way of thesis projects. We have achieved a level of trust among intellectuals, administrators, and politicians that access is no longer an issue. Facilitation of resources and venues for graduate thesis project(s) are more accessible now than ever.

The first of these projects is titled “Immersive Educultural Multimedia: Balancing Technology and Cognition”, by Timothy Allen. The thesis focuses on allowing users to experience and gain knowledge from a significant historical and cultural monument by means of technology. The historical monument is Elmina Castle located in Ghana West Africa. This huge structure held millions of Africans captives during the slave trade era. The organization, tempo, interaction, mood, and imagery of this project were designed to provide an experience to its users.

This project includes three-dimensional references, illustrations, and diagrams of the Castle rendered in Alias Wavefront’s Maya. The multimedia piece includes video narration, and stimulating user interaction. This is accompanied by a musical composition, supporting illustrations, and research documentation. The project serves not only to inform people about the history of the castle and it’s current state but, the multimedia brings to life the experience of the slave trade and the implications it had on mankind. The project was completed as a prototype, which included the interactive functionality, however with only a sampling of the historical content. It was conceived that the project could be copied to CD-ROMs to be sold and dispersed at the castle, it could have a web version available to millions around the globe, and it could be played at various castles and museums in digital kiosks.

At present, there are negotiations with the Ghana Historical Society with Tim Allen that the Thesis Project concept be acquired and developed in its entirety.

Continuing Projects

In my most recent trip to Ghana, an opportunity was presented to ATAG to acquire a former furniture manufacturing facility in a remote region of the Volta area. ATAG would like to create a communal production facility for the artisans capable of producing higher production quantities for export. The African Growth and Opportunity Act (AGOA) signed into law May 18, 2000 as Title 1 of The Trade and Development Act of 2000 by President Bill Clinton and subsequently extended by the signing of the AGOA Acceleration Act of 2004 by President George Bush.

AGOA has been instrumental by reducing barriers to trade; this law has increased export, created jobs, and expanded opportunity for Africans. It has given American businesses greater confidence to invest in Africa, and encouraged African nations to reform their economies and governments to take advantage of the opportunities that AGOA provides.

It is through AGOA that ATAG anticipates a successful venture with their artisan’s network.

The targeted facility originally established in the mid seventies through grants from an external government to enable economic growth and employment for this isolated area.

The original recipient and founder of the facility has curtailed furniture production and established a wood treatment facility elsewhere funded entirely also by external government sources. Due to contractual stipulations imposed by the awarding governmental organization, recipients are prohibited from liquidating resources of the original award. Consequently, the facility remains in tact and in desperate need of managing operators, which ATAG and its subscribers is willing to assume.

At present ATAG is pursuing internal governmental support to lease the facility and identify appropriate human resources to launch the operation of the facility. In addition, my task in conjunction with the artisans is the development of marketable furniture and related products in the form of prototypes. We sincerely believe that product design will serve to create appropriate artifacts capable of penetrating western markets ultimately increasing export, creating jobs, and expanded opportunities for African artisans in the region.