Sustainable design process for Thai micro-to-small craft entrepreneurs

A case study of vetiver grass handicraft product

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Unlike the mass-produced industrial products, handicrafts employ different paradigm of product development and production process. Believing that sustainability in design education can be cultivated through trans-disciplinary and holistic approach by means of sharing, planning and decision making activities, the design process consisting of conceptualization, visualization, materialization and validation is re-investigated in this paper. This paper therefore aims to portray the effective mechanism and sustainable collaboration between design students and local craftsmen, by taking vetiver grass handicrafts as a case study. The project utilized the conceptual framework of Dr. Prateep Veerapattananirun's Loop Sustainable Collaborative Learning Model, which include the five major stages - Collecting, Co-Planning, Co-Actualizing, Co-Realizing, Co-Cherishing.

The results from the design students and Baan Aoy village collaborative learning process show that sustainable learning in Thai communities reveals cultural uniqueness in various aspects. These include the Thai's sensitivity to profit sharing, leadership requirements, knowledge transfer mechanism, and social flexibility. The Baan Aoy project also defined roles of design and craft in sustainable learning mechanism. More specifically, the mechanism stresses pivotal stages of Co-Actualizing and Co-Realizing in the loop of sustainable learning. It also emphasizes the importance of 3D media and tactile prototypes for successful collaborative learning and the support of design and craft as an organic learning process.

Thailand craft product development background

The development of small-scale handicrafts product communities was first introduced by the Thai government in a national project titled "Thailand Department of Industrial Promotions" in 1994. Its main purposes were to help improve the quality of life in rural areas and to establish the strength of community as a qualified and standardized source of craft products and cottage industry, resulting in self-learning environment on a self-reliable ground and sustainability, eventually. As a consequence, strategic policies of the country were set up through several national economic and social development plans on indigenous knowledge and wisdom of Thailand, whose main objective was to improve community economic in district level.

In 2001, the Thai government created several programs to assist villagers in their craft product development. The "Thailand Village Fund Portal" provided financial assistance in the amount of 1 million baht for each village. "One Tambon One Product" was created to help educate villagers in their craft product development (Thailand Knowledge Center, 2004). Government agencies and academic researchers worked in collaboration to push community attitudes to become more in line with the government's community development policies. The program encouraged villagers to "market" their indigenous knowledge in the form of producing "consumerable" crafts. In essence, the government focused mainly only on revenue development, rather than creating local craft businesses that are built on learning and self-reliance, the key elements to economic sustainability. Such a sole focus on the commercial aspect of craft production naturally caused an imbalance between the economic versus the environmental/social aspects in the sustainable development model.

In the OTOP project, where various government agencies tried to assist each village in developing its own product, problems arose due to a lack of unified and centralized assistance. Another serious problem was the lack of understanding on the part of the organizers in their approach to sustainable development for businesses. For instance, a great deal of assistance was given to communities that already enjoyed commercial success with their products, while not enough was given to those that were in greater need. Also, a "universal" plan of action developed by the government for community sustainable development could not be applied to the numerous communities with unique and individual needs and requirements. These caused the most serious problem such that unclear guidelines caused confusion and distrust between community members and government officials, resulting in a lack of mutual learning atmosphere. In the end, most of the OTOP community projects fell short of the developmental goals that OTOP initially set. These problematic aspects were from the sub-par staffs, that is, hiring or outsourcing staffs from outside with an incomplete understanding of goals and details of the project (Office of the Auditor General of Thailand, 2005).

Thai small and micro community enterprise

In 2003, the idea of Small and Micro Community Enterprise was introduced as a community resources management program to achieve creative and self-sufficient minor-sized enterprise (Thongthaing, 2003). Apart from local funding, the other forms of community resources considered significant consist of natural resources, local products, indigenous knowledge, culture, tradition, fraternity and trust among members. The guideline to establish successful Small and Micro Community Enterprise includes: 1) the ownership and management of community, 2) productivity from analysis procedures of community, 3) creativity and innovation, 4) indigenous knowledge integrated in global level, 5) systematic integration and cooperation, 6) learning process, and 7) self-sufficient orientation. Benefits from Small and Micro Community Enterprise encouraged self-production for consumption, resulting in the decrease of household payments as well as increasing their extra income from selling local products .

As a result, community survived as people remained in their home community for work. The community was able to carefully manage the village's natural resources, essential for sustainable development. Community health as a whole improved. The enterprise community created strength within and joined with others to create a thriving network of enterprising communities. Eventually, it gave the community the true self-sufficient sustainability.

Baan Aoy village: water-hyacinth handicraft community enterprise

Baan Aoy village in Chainat Province is one of the Community Enterprises which set its goal in producing Water Hyacinth Handicrafts following the self-sufficiency scheme. Its members are basically farmers who, in their free time, produce water hyacinth handicraft through inherited indigenous

knowledge of bamboo basketry. Like other OTOP villages, their water hyacinth craft production was initially supported by the government in terms of funding, design and product development, and marketing. Later on, Thailand's economic crisis in 1997 caused the decline of both government's funding support and the product orders. Consequently, community leaders and members started to adjust their mindset toward self-reliance and created community network to overcome the higher cost of living such as healthcare and education expenses.

From that point, the members began to develop their products such as baskets, boxes and handbags on the foundation of the existing Thai local markets and export markets. Their product development strategy is based on minor changes in sizes, forms, integrated patterns, and decorations on the product exterior. Regarding informal interview on roles of being craft product makers versus designers, when asked to select the preferred one, members were eager to be the latter and mentioned that they were happy to create their own design and have a chance to see the whole process and final outcomes. The community leader mentioned that, she would buy beautiful handbag from local market for studying its form and plotting the weaving, or try to remember pretty products in magazines or television and later started creating new design.

Discussing with Baan Aoy community enterprise also reveals that inspiration is needed for their product development. The researchers thus attempt to find the process that helps develop design-learning process for the community in a sustainable way. By initially studying the Baan Aoy community's life perspective, way of life and shared goals, the team later examines the ground information of sustainable learning, knowledge management, and Interaction Learning Through Action (Institute of Administration Development, 2009) as to find mechanism of the collaborative learning between KMUTT industrial design students and members of Baan Aoy. As dynamics and diversity are the key concepts, the collaborative project was set on the basis of that the learning must co-exist with the socio-cultural context, economy, environment, culture and tradition of the community, which could differ from one community to others (Institute of Administration Development, 2009). Therefore, the project goal is to empower learning ability among design students and community members as well as school instructors, to appreciating and realizing in human interaction as powerful learning source.

Conceptual framework

The 4 months collaborative learning between KMUTT design students and instructors is to be conducted with members of Baan Aoy community by using conceptual framework on "Loop" Sustainable Collaborative Learning Model of Dr. Prateep Veerapattananirun, 1999 (Figure 1). Each loop details are as the following:

Figure 1: Sustainable Collaborative Learning Model by Dr. Prateep Veerapattananirun
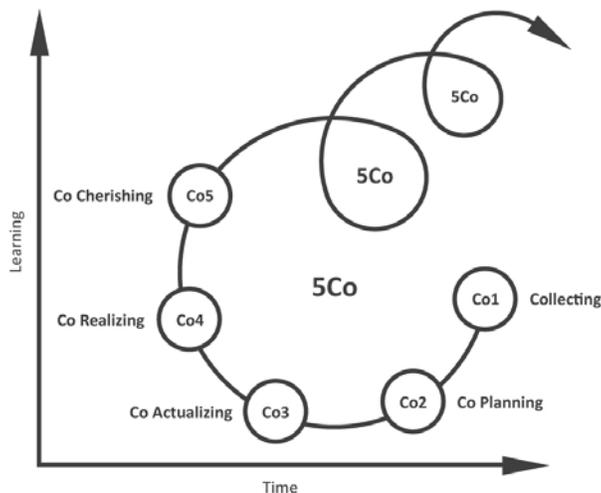
1. Collecting

The concept of this stage is to collect ones who share the same interest, realization and goal to create a team spirit for further success in each process. For the department of Industrial Design, the project had been introduced as an elective course for students in 3rd and 4th year. Instructors had presented details and learning stages with the community crafters to students in the first hours. With regard to the stage of "Collecting" in community, Baan Aoy villagers were originally introduced to the project by the coordinate of craft experts at the Department of Industrial Promotions (DIP), since they acquainted with Baan Aoy villagers and know their exact strength and learning potential. Collaboration in developing design skill and knowledge transfer in craft and design are the key goals of this learning mechanism. The craftsmen in community wanted to learn more of modern design development and expected that participating in the project would enhance their inspiration and opportunity to better their craft design and production. Meanwhile, besides studying in classes, students had the anticipation of successfully obtain indigenous knowledge and skills in basketry through this Learning-by-Doing project.

2. Co-Planning

This stage is focused on brainstorming for mutual understanding, changing mindsets and developing shared visions. The "Co-Planning" in the collaborative learning processes occurred twice in this project. The first "Co-Planning" occurred before the project was launched as instructors and design experts from DIP discussed the direction of the collaborative learning activities. The second "Co-Planning" occurred during students shaped up their craft product concept. Instructors and craft experts as well as students took part in brainstorming of craft product opportunities, and students collected related data for further development.

3. Co-Actualizing

This stage is of running action plans as the integration of design and production processes by sharing ideas between both counterparts. As the first "Co-Actualizing" between the students and the craft experts, the training in basketry was delivered to adjust mindsets and equip the necessary skills to the students. Unfamiliar new material of vetiver grass together with new craft techniques was to be introduced through a fundamental activity of a 3-day workshop (Figure 2). Lessons were included material preparation, twisting, braiding, forming, patterns making and finishing. This learning process belonged to the concept of "Learning by Doing" as they themselves practiced basketry craft by interacting with meaningfully self - engagement environment and thus produce their own knowledge in the forms of Assimilation and Accommodation. (Harel and Papert, 1991)

Figure 2: Students and craft expert during Co-Planning and Co-Actualizing stages

After students had full understanding of material and skills, students had the opportunity to design vetiver grass products, following the conventional design process of Conceptualization, Visualization, Materialization and Validation. Students were then requested to construct their own craft models as for visualizing and truly understanding their own designs. The second "Co-Actualizing" then took place in the Materialization stage through direct discussion with craftsmen for form developing and solving problem occurred during production stage (Figure 3). These stages triggered both counterparts to absorb knowledge and adjust themselves to new concurrent changes leading to sustainable self-learning. (Harel and Papert, 1991)

Figure 3: Students and craftsmen collaboration during Co-Planning and Co-Actualizing stages

4. Co-Realizing

This stage comprises processes of self-assessing and evaluating outcomes as well as presenting their works. Students were assigned to conclude session of "Lesson Learned" in terms of skills, knowledge and experience gained during taking the course. However, the true "Co-Realizing" was administrated only between instructors and leading craftsman through brainstorming session in order to identify the prototypes' potential. The leading craftsman confirmed and showed their ideas extension through their new designs inspired from students' collaborative prototype. The momentum of "Co-Realizing" stage was consequently initiated craftsmen's new learning loops and repeated without ending.

5. Co-Cherishing

This stage is of creating pride and praises. Unfortunately, the project failed to achieve the stage for its limited time and transportation factors. However, students' working journal and the re-visit to the community revealed that its members were proud of being able to create and develop their new products which were inspired by the works of students. This therefore ignited pride and happiness among students, instructors and experts eventually.

Results

1. Collaborative learning process

This design and craft collaborative process was comprehended based on "Constructionism" approach as both students and craftsmen built up and expanded their individual knowledge. They freely chose their choices of practices without conforming to the conventional ones. By bringing the two groups of people with different background, their alienation to each other turned out to be an eye-opening experience and become powerful creative resources through the synergy of ideas, mix-and-match working style with the open-ended expectation, rather than goal-oriented solidified solution. In essence, especially during the "Co-Actualizing" stage, students were able to materialize their design intentions through a real understanding in craft material and technique while village craftsmen were encouraged to apply their craft skills to functions and forms made by students that were outside of traditional and conventional craft.

Unlike the traditional way of learning design, the collaborative process encourages the physical interaction between the young designers and craftsmen more than the distribution of academic/professional design knowledge itself, which made both stakeholders realize in human interaction as other sources of knowledge. These had proved to all participants to believe in the power of community collaboration and social integration. Other significant phenomenon also occurred after the collaborative process which craftsmen had expanded themselves into their very own second learning process (Figure 4). These had proved the sustainability of this collaborative learning. Even though the collaborative process did not happen at all stages due to the limited semester timeframe of the academic system, it should be noted that the true collaboration can be done at one will at all time.

Figure 4: Sustainable Collaborative Learning between design students and Baan Aoy craftsmen
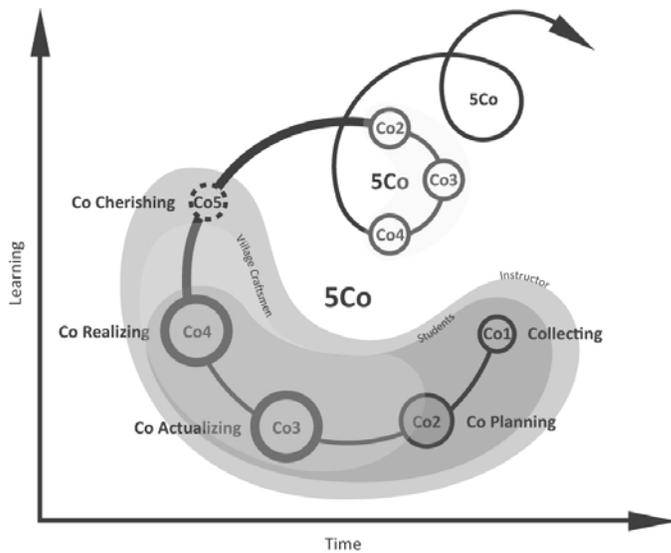
2. Lesson learned: reflection from design students

Feedback from the students mentioning their attitudes and mindsets towards this course are ranged from the preference over multi-expertises in a project-based learning environment, the fun and enthusiastic environment which encourage the real making of their products. According to the reflection from the ones who prefer 'Instructionism' learning approach and hence, felt uncomfortable and gave up the course,

there should be a session for adjusting mindsets and tuning attitude towards the shared goal. Further, a workshop-based activity which more time and interaction would be collaboratively spent among the participants is considered necessary.

3. Design outcomes

A) First prototypes

It was found that students were eager to invent the new techniques that need less skilful basketry techniques to form the products, such as coiling and a few of skinning techniques. Other crafting techniques were borrowed and applied to vetiver grass, i.e. sewing, crocheting and weaving.

B) Collaborative prototypes

Using the first prototypes produced in the design studio as unfinished, tangible and inspiring media, the students and craftsmen now passed on into a "Co-Actualizing" stage to help each other generate their ideas further. A varieties of design outcomes occurred during this process is included the rediscovery of local long-lost vernacular technique of "San Pla Chon" trimming technique which villagers reincarnated into their sophisticated forms of products. These are the cases that the researchers have found as the utmost value that collaborative process provided. Learning outcomes are also involved in their collaborative in problem solving, their inter-assimilation-accommodation in their knowledge through the actual interaction learning. The craftsmen actually reapplied some of the techniques found during the collaboration into their other existing high-demand products and such a method was simplified enough that the villagers can distribute the work to the elderly, the handicapped, and the children, thereby expanding the workforce and increasing production for the crafts community.

While focusing on finding some revenue for their community, villagers have also planned to apply the idea of sustainability to the way in which they approach their craft business model, by replacing vetiver grass with their local agricultural waste which is plentiful and accessible in the area. Whereas before, the locals looked to outsource some certain non-local materials, they have now learned to aim for craft designs that are hundred percent made in Baan Aoy. Lastly, the collaborative project has taught the students and the villagers the importance of self-reliance as the main ingredient towards achieving sustainable learning success.

Figure 5: Collaborative prototypes between design students and Baan Aoy village craftsmen
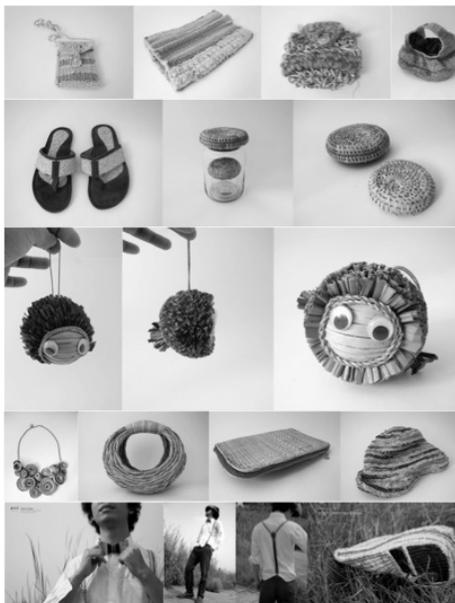
C) Craftsmen idea-extension prototypes

Villagers mentioned their inspirations and drives achieved were such meaningful to them that would later on engage them to work on their products in the future. The instructors, afterwards, persuade them to generate new designs based on students' prototypes for their familiar markets: Thailand, USA and Japan. At the end, the leader of the group showed the potential in applying inspiration to her very own design development and solving problems of size, product usability and production as she can make production plans for work distribution to Baan Aoy's connection fellows.

Figure 6: Craftsmen idea-extension prototypes

Discussion

1. Sustainable learning with Thai community: cultural uniqueness

A) Sensitivity to profit sharing

One main characteristic of Thai society is its long-inherited cultures, traditions and lifestyles that have been passed on to upcoming generations. Thai society is based on mutual reliance and cooperation, for example, the act of barn-raising (in a form of rice harvesting). Revenue and earnings received had never been problematic as labor and outcomes were unmeasured (Petchmak, 2004). Nevertheless, participating in this local economic creativity project, the main goal of community members was geared towards revenue and profit sharing. As a result, if the community lacks the strength, conflicts can easily happen. Leaders of the community thence must possess the capability to be the center of the community.

B) Leadership

It can be said that Thai society concerns with seniority. As Thais in the past gave much respect to the elderly or more senior people who would in return pass on their knowledge and experience to the next generation. Yet today Thais give importance to qualification: profession, education, prestige and wealth.

Hence, leaders of the community should acquire both seniority and qualification to gain respects from followers and be the center and pillar of the community. Thai society is different from others as it depends firstly on leaders as the success of those leaders relies on trust of group members which cannot be evaluated in figures, while others might focus on systems and management which give solid numbers and can be audited to find related efficiency.

C) Sensitivity to knowledge transfer

According to Prof. Dr. Prawase Wasi, Thai Society now lacks "Knowledge Mapping" between people and knowledge, that is, who possesses what kind of knowledge. This is the result of Thai learning process in the past which was done without recording; learning by memorizing became common practice until these days. Furthermore, dialoguing, demonstrating and making seem to be the main learning methods due to nature of craft making. Therefore, while learning with the village craftsmen, students were supposed to record what they learn as one way to compile indigenous knowledge and prevent it from extinction.

In the past, Thais believed that individual knowledge was for family members only; they would prefer keeping it secret till on the deathbed to disclosing to others (Buranakhet, 2004). During the learning process, thus, there might be some of this problematic aspect for students being perceived as the outsiders. Beside trust, efficient communication skill is important that students must own before participating in the collaborative session with villagers for this matter of fact.

D) Outsiders and insiders

One important consideration is the outsider/insider issue as students, the outsiders, who step in the targeted area would normally get greetings from villagers with respect and humbleness. As Thai society is based on the perspective of consideration to others, activities that help getting feedbacks indirectly from different stakeholders (students and villagers) therefore should be done to avoid conflicts and negative attitudes.

E) Flexibility

"People and communities are differed regarding their economy, society and culture, natural resource, environment and etc., so implementing one successful learning approach in one community to another or from the central authority to local communities tends to fail," (Wasi, 2001). This results in varied processes and strategies in planning and collaborating. If government or agencies are interested to participate in this project of developing product design from indigenous craft knowledge with any community, they need to have the thorough study about that community beforehand. Community Development Department under the Ministry of Interior owns this related data and the close relationship with villagers. Collaboration with them or those with close connection to community such as Local Administration Network, thence, should be made to create proper planning that agrees to community the most. Besides, most of village craftsmen have the main profession as being agriculturist so producing crafts—considered a part-time job—is to scheduled in accordance with their farming timetable as well as their attendance to local social and cultural events. Flexibility therefore is the key element in the project approach to the community.

2. Design & craft roles in sustainable learning mechanism

A) Sustainable learning: pivotal stages in design and craft collaboration

Each stage of "Collective Learning Model" is essential as it promotes the continuity of the learning process, however, when being analyzed, with its design process integrated, it was found that the stages of "Co-Planning" and "Co-Actualizing" usually coexisted in the same time. And critical stage that lie within the stages of "Co-Planning" and "Co-Cherishing" would change the role of designers and relocate their design knowledge with shared experience in the same level of villagers, not in the superior one often found in government design training programs. The limitations of this pilot project are time and distance of the two learner groups: craftsmen and young designers. As a consequence, these important stages were

failed to gain the complete foundation of collaborative learning. Goals and wills of learners are also needed for learning achievement and thus should be articulated in the stage of "Co-Planning". And when all processes are finished, the stage of "Co-cherishing" should be made to accomplish what is the goal of the project.

For "Co-Planning", besides making plans together, some activities for an open-eyed experience should be managed, for instance, visiting exhibitions and trade fairs, in a pleasurable way for stimulating learners' creativity. In terms of design practice, this stage would lead to characteristics of the design brief. Challenging brief with incentives from everyone is a real fruit of this stage. Government agencies often have the design briefs that are stereotypes focusing on only the aspect of value addition. Design brief that also gives value to the other dimension of life such as self-development, community-reliance, society and culture, is subjected to be explored for the purpose of the true sustainable development (Wasi, 2003).

B) Media for collaborative learning in design

While the conventional design procedures of brainstorming and sketching proved problematic and unsuited to the collaborative learning between academic and village craftsmen, the actual real-world prototype as the media had proved to be the appropriate tools to stimulate the creative dialogue between the design students and craftsmen. Therefore, if one were to assist local craftspeople, one must strike a balance between the less theoretical aspects of design and the more of real-world tactility of craft.

In the stage of "Co-Actualizing", it can be seen that designer tool and media need to be adjusted to efficiently communicate with non-design background craftsmen. Also the roles and needs of media in the context of developing local crafts products through collaboration are different from professional design context. Using the first prototype as media not only solves the technical problems in production, but also encourages village craftsmen to have inspiration and "extend" their ideas for new products. Experiencing materialized prototypes enables craftsmen to connect market possibility—the existing information from working experience—with "ideas". With the main characteristic of Thai craftsmen preferring adapting and applying, this learning process completely agrees with Thai villagers

C) Design & craft as organic learning process

Typically design process is clearly structured and focused in terms of time constraint and clarification of the objectives. While the product development process among Micro-to-small Craft Entrepreneurs is comparatively more flexible due to many factors: uncomplicated nature of craft making process, small lot production, accessibility to various distribution channel network. Village craftsmen thus have potential to create unlimited new products as possible as their availability allows. As a result, each working cycle tends to be a small, repetitive yet dynamic loop of activities generating numerous visual and tactile outputs as the source of ideas for driving the next round of their product development.

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