

Collaboration of Designers and Craft Artists on Innovative Design Praxis

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Abstract: The collaboration of craft and design is emerging design praxis in Taiwan. The National Taiwan Craft Research Institute (NTCRI) and Taiwan Design Center (TDC) has initiated the program “Craft and Design Cross-border R&D Cooperation Program (hereafter Yii project)” since 2007. That fruitful results generated from the Yii project has positive impacts on both sides. Under the collaboration, designers acquire knowledge of craft techniques and materials, and obtain inspiration to further their creation. On the other hand, the designers play a catalytic role to empower the craft artists and assist them in designing products to meet modern market needs. The craft-design collaboration not only brings value-added to each other but also contributes to knowledge for both sides. Collaborating with craft artists has become a new trend of design praxis, but the collaboration is still under development and needs more exploration to achieve the better success. Thus, this study aims to get insight of craft-design collaboration by conducting case studies of Yii project to understand the craft-design collaboration. According to this study, the development process of craft-design collaboration can be divided into four stages: fuzzy front end stage, co-creating stage, co-prototyping stage, and feedback stage. The factors facilitating and hindering the collaboration are discussed in this paper.

Key words: Craft, Industrial design, collaborative design, Multidisciplinary Introduction

1. Introduction

Craft products represent a cumulative culture that fulfills living needs and reflects local aesthetics and knowledge, and the bearing of cultural elements is a critical value of craft products that surpasses material functions. However, advancements in technology and changes in contemporary consumption demand have resulted in the mass production of economical products, gaining popularity over craft products. This transformation led to the decline of Taiwan’s craft industry; thus, many skilled craft artists are unable to maintain a living by solely relying on craft creations for income. The diminishment of craft talent has led traditional crafts to face the possibility of extinction. In addition, the design industry has encountered various challenges. Technological progress has enabled the rapid dissemination of information and techniques; therefore, enterprises are no longer advantaged in information and technological monopolies. Because of the oversupply of similar products, companies increasingly desire to differentiate their products from competitors. Consequently, transformations for both the design and the craft industry are necessary. By collaborating with craft artists,

designers are able to employ the unique culture of craft as an element for design, thereby achieving a strategic differentiation; in addition, craft artists can create craft products that fulfill contemporary consumption demand through the professionalism of designers. The complementary effect between designers and craft artists assists in the production of unique and identifiable designs in a globalized market, and enables the heritage and re-innovation of crafts. These improvements can further enhance Taiwan's overall economic competitiveness. This collaborative design method has been adopted by numerous businesses and designers, such as IKEA, Yothaka, and Droog. In 2007, the National Taiwan Craft Research Institute (NTCRI) and the Taiwan Design Center (TDC) jointly promoted the Yii project, which involved grouping designers and craft artists to collaboratively create products. This project endeavored to combine contemporary design and traditional Taiwanese craft with new perspectives and liveliness infused and subsequently integrated craft products into daily life. With this objective, the Yii project gained positive reviews in Taiwan, was praised in the International Design Exhibitions, and was reported on by various international design magazines. The project also attracted public attention for Taiwanese craft, providing the design industry with a new direction for creation. The potential for cross-industry collaboration of the design and craft industries is apparent. However, this collaborative method of integrating design and craft professions is underdeveloped. Therefore, we interviewed the execution personnel, designers, and craft artists of the Yii Project to gain an in-depth understanding of the collaboration between the two industries. The findings of this study can serve as a reference for future designers and craft artists who wish to collaborate, thereby enhancing collaboration efficiency and production outcomes, and further elevating the development of the design and craft industries.

2. Craft and Design

Currently, although craft and design are classified as two fields, they possess abundant similarities. For example, designers and craft artists both engage in innovative design behavior, maintain a design objective of improving life, and endeavor to produce products that are practical, aesthetic, and economical. The differences between designers and craft artists are as follows: (a) The training for designers is diverse and integrated, combining the fields of science, economy, art, and social culture [1], whereas the training for craft artists is centered on a specific skill; (b) designers use various materials to design products, whereas craft artists use specific materials to design products [2]; (c) design productions are operated based on division of work and professionalized production procedures [3], whereas crafts involve an independent and comprehensive production procedure from conception to production [4]; (d) design involves using machines and automated methods to conduct mass-production, whereas crafts are produced in small amounts and are focused on handcraft with auxiliary traditional machinery [5]; and (e) design products are standardized products that fulfill public demand, whereas craft products are customized or diversified products that bear specific cultural and emotional symbols. The comparison between design and craft is shown in Table 1. Similarities exist in the behavior, objectives, and procedures for craft and design; therefore, compared to collaborations with other fields or industries, substantial advantages for development exist in the collaboration between the design and craft industries, creating a complementary effect.

Table 1. Comparison of the similarities and differences between design and craft

	Design	Craft
Similarities	The engagement in innovative design behavior. Design objectives of improving life and the production of practical, aesthetic, and economical products.	
Differences	Training is diverse and integrated, combining the fields of science, economy, art, and social culture.	Training is centered on one specific skill.
	The use of various materials to design products.	The use of specific materials to design products.
	Operated based on division of work and professionalized production procedures.	Independent and comprehensive production procedure from conception to production.
	Using machines and automated methods to conduct mass-production.	Produced in small amounts and are focused on handcraft with auxiliary traditional machinery.
	Standardized products that fulfill public demand.	Customized or diversified products that bear specific cultural and emotional symbols.

3. Research Method

Design and craft are classified as different industries; thus, differences exist between their knowledge background and production methods. Regarding collaboration between designers and craft artists, who excel in different fields, we explored the following topics: (a) How designers and craft artists collaborate to successfully create products, (b) how the collaboration process is implemented, and (c) procedural details. The primary objectives of this study are as follows: (a) Understand the collaboration procedure between the designers and craft artists of the Yii Project and (b) summarize the enablers and barriers of the collaborative operations in the Yii Project. The multi-case study method was adopted and a semi-structured interview was employed to collect data. Grounded theory was applied to conduct repeated comparisons of the interview data, and domestic and international studies related to craft and design were referenced to better understand the cross-field collaboration process for craft and design, as well as identify all enablers and barriers during this process.

3.1 Interview Participants

The interviewees comprised the Yii Project proposal/execution personnel and 12 participants of the Yii Project (i.e., six designers and six craft artists).

3.2 Data analysis

The text data were analyzed based on the grounded theory methodology. Open coding, axial coding and selective coding were used to analyze the data. Text sections relevant to our study were first selected and labeled, forming a collection of open codes. During axial coding, the collection of open coding was examined according to the relationships between the central phenomenon of interest. In the final stage of selective coding, we developed a narrative that integrates the results of axial coding. Categories were compared to each other and those categories more relevant to the research objectives were selected and then analyzed for their causal relationships. The categories were rearranged according to the causal relationships to tell the story of the craft-design collaboration. The research inquiries regarding the collaboration were also addressed.

4. Results

4.1 The collaboration process of Yii Project

The collaboration process of Yii Project includes four stages, namely: the fuzzy front-end stage, co-creating stage, co-prototyping stage, and the feedback stage:

4.1-1 The fuzzy front-end stage

Design workshop

Prior to collaboration, all craft artists and designers attended a 3-day overnight design camp hosted by NTCRI. During this design camp, the designers and craft artists became acquainted with and achieved a basic understanding of the team members. Subsequently, either studio tours or work presentations for craft artists were conducted, which enabled designers to gain a preliminary conception of the craft material. Designers determined which craft artist they preferred to cooperate with after the completion of the design camp.

Craft technique introduction, craft artist cultivation, and craft development direction

After selecting the craft artists they planned to collaborate with, the designers began to thoroughly explore the craft items for collaboration. The designers first collected relevant information on craft techniques (e.g., the current presentation methods for the specific craft technique). In addition to basic data collection, designers must possess an advanced understanding of craft techniques, including the craft specialties, limitations, and the creation style of the collaborating craft artists. An in-depth understanding of the craft artists and their craft expertise is essential to the development of a creation direction that interests both the designer and craft artist.

4.1-2 The Co-creating Stage

Concept discussion, concept balancing, and consensus establishment

The preliminary design concept was proposed by the designers and communicated to the craft artists. Because the two parties specialize in different fields, a substantial period was required for communication and discussion during the preliminary collaboration stage. In this stage, designers and craft artists began to understand the design concept and orientation; thus, a consensus for collaboration was established. Subsequently, the stage for concept convergence began. Organizers conducted preliminary reviews, where the personnel from the NTCRI and the creative director performed concept discussions with the various teams and evaluated the concept execution details to assist in the selection of a suitable design proposal.

Technique assessment, tests and corrections, and concept balancing

After being approved in the team preliminary review, designers further developed concepts according to the suggestions of the creative director, proposed concrete design drawings, and communicated with the craft artists. Feasibility assessments were conducted by the craft artists, and mock-ups for feasible designs were produced. An additional review was performed following the production of the mock-up design. Because the collaborative works were to be promoted under the brand name of the Yii project, the works produced by the various teams were required to possess a uniform style. Therefore, the creative director guided the teams in mock-up model production to correct the design direction and unify the style of the produced works.

4.1-3 The Co-prototyping Stage

Prototyping and problem-solving

When a consensus regarding the design objective was achieved by the craft artists and designers and the concept feasibility analysis was completed, the prototyping stage began. During this stage, the craft artists were responsible for the majority of prototyping work, which was based on the consensus achieved with the designers. The craft artists may have encountered certain issues during prototyping. When these difficulties occurred, the designers were responsible for helping the craft artists find solutions to continue work production.

4.1-4 The Feedback Stage

Knowledge experience exchange

After the completion of the collaboration process, the knowledge experience for the craft artists and the designers underwent an in-depth exchange. The designers gained an understanding of craft materials and techniques, facilitating the elevation of their design expertise. The craft artists who participated in the design collaboration proposed that the designers' concepts expanded their original perspectives on craft. Furthermore, the craft artists acquired knowledge from the designers during the collaborations, thereby acknowledging the demands of contemporary consumers and understanding the materials and production process for contemporary materials. The designers led the craft artists to develop novel creation directions, and enabled them to understand that craft can exist in unconventional styles and that a modern touch can highlight the excellence of the craft artist's skills.

Positive benefits produced through collaboration

The collaboration results of the Yii project were praised, and numerous orders were received at the International Design Exhibition. In addition, the designs were reported in international design magazines, thereby gaining publicity. Because the Yii project was organized by governmental units, for-profit sales were prohibited according to relevant laws and regulations. Nevertheless, the high degree of inquiry that the Yii project received proved the commercial potential of collaboration between craft and design. Furthermore, individual designers and craft artists also gained substantial attention. The PR value of the designers was enhanced because of their excellent work, and many people identified with the designed products that possessed the unique beauty of traditional craft. Thus, relevant domestic businesses were inspired to consider methods for integrating Taiwan's craft techniques and materials with their products. Based on the success of the collaboration products, an increasing number of people have become familiar with these dedicated craft artists, who previously received little attention. These craft artists have obtained many commercial collaboration and exhibition opportunities after participating in the Yii project, thereby achieving a stable income, and, hence, being able to focus whole-heartedly on their profession. Furthermore, the craft industry has received increased attention. People have become aware of the potential for crafts and have come to understand that traditional craft is equipped with potential innovation and commercial opportunities; therefore, many youths have become attracted to this field and are now willing to participate in the craft industry.

4.2 Factors that Facilitate and hinder craft-design Collaboration

Throughout the development process, this study identifies factors that facilitate and hinder collaboration on three levels: the actor, project and organization level.

On the organization level

Enabler

Establishing a collaboration platform

As the organizer for the Yii project, the NTCRI and TDC provided the funds required for collaboration and established a collaboration platform that enabled designers and craft artists to interact and cooperate.

Overseas exhibition opportunities

The Yii project was granted the opportunity to participate in Milan Fuori Salone, a strong incentive for the designers and craft artists; Milan Design Week is one of the most renowned events where designers can gain substantial exposure and popularity.

Barrier

Non-sellable collaborative designs

The collaborative designs of the Yii project received positive reviews worldwide. In particular, numerous orders were placed at international exhibitions such as Milan Design Week, indicating the success of this collaboration project and its commercial potential. However, the Yii project was organized by governmental agencies; therefore, profit-seeking behavior was prohibited and the products could not be sold. This situation was detrimental to the continuous collaboration between the designers and the craft artists.

On the project based

Enabler

The fuzzy front end stage

The primary objectives of the fuzzy front end stage were to enable the craft artists and designers to become acquainted and to establish a basic relationship of mutual understanding; thus, the designers and craft artists were able to identify their collaborating counterpart. The collaborating designers and craft artists originated from different fields and possessed varying specialties. Therefore, new cognitions were created through mutual stimulation of the different styles and cognitions for the project members during the discussions. The effectiveness of this mutual influence may be reflected on an enhanced concept for achieving high-standard works [6], which can produce cognitive stimulation for a team.

Expert-review process

The majority of interviewees asserted that reviewing design work with creative director (i.e., a senior designer from the Netherlands) benefited the promotion of collaboration. In addition to possessing professional knowledge, this creative director assumed the role of a heterogeneous member in the project team. The interviewees agreed that team members felt inspired after engaging in discussions with the creative director. Numerous studies have proposed that the importance of a heterogeneous team member is reflected by an increased amount of innovative creations [7, 8, 9], which generates positive contributions to the creation of knowledge during collaboration [10].

Barrier

The absence of a project leader

The Yii project was co-organized by the NTCRI and the TDC; however, improvements can be made to certain details regarding collaboration execution. The interviewees reported that because of the absence of a fully-

authorized leader during the collaborative process, coordination was required when the perspectives of the NTCRI personnel, creative director, and collaboration team conflicted. The absence of a specific leader to provide decisions was detrimental to collaborative development.

Limited collaboration time

The collaborating members contended that completing the required tasks (e.g., acquainting between the craft artists and the designers, understanding craft techniques, communication, design, production, and presentation) within a year was demanding, and that the team members were consequently unable to comprehensively implement their professions. Therefore, prolonged collaboration time should be considered for future collaboration projects to create positive benefits for the collaboration outcomes.

On the actor level

Enabler

Identical motivation for collaboration

The designers and craft artists who participated in the Yii project generally possessed an identical motivation, that is, to establish a new cognition for traditional craft. Members of the Yii project exhibited a high homogeneity in their motivation to collaborate, which positively influenced the communication and performance regarding teamwork Weldon & Weingart[11].

Becoming acquainted

The majority of interviewees attested that the establishment of a basic relationship between craft artists and designers, or multiple collaborations with one craft artist or designer was beneficial for the collaborative process. This concept is similar to that of the establishment of a design camp, that is, becoming acquainted with each other is essential prior to collaborations. A mutual understanding enables the rapid establishment of a consensus regarding the collaborative objective and decreases misunderstandings during communications.

Face-to-face communication

Face-to-face communication is recommended for the preliminary stages of collaboration because of advantages such as bilateral communication and the proposal of impromptu questions and answers regarding the communication content. The communication content includes comprehensive verbal and nonverbal messages. Therefore, in addition to language, intonation, mood, body language, texts, and figures all facilitate content dissemination, which enable a vivid understanding of the communication content. Craft and design are a type of tacit knowledge, which is internalized in personal knowledge and experience and is difficult to formalize or express using words or language. This type of knowledge exhibition can be shared with others through commonality. For example, designers observe craft artists conducting practical operations of their craft techniques. Therefore, face-to-face communication is preferable for the preliminary stages of collaboration, and is the most effective method for acquiring tacit knowledge [12].

Designers' ability to persuade and communicate

Because of differing knowledge backgrounds, craft artists are generally traditional and conservative; thus, the craft artists commonly disapproved of the designers when asked to participate in the innovative creations.

Therefore, the designers' communication and persuasion skills are crucial enablers. For example, the craft artists may have been intrigued by the proposal of a "specialty," such as a new concept or the implicit stories in a design concept. Consequently, the craft artists' willingness to participate in the project execution increased. The interview results indicated that the craft artists occasionally perceived the designers' ideas to be too ambitious. The craft artists questioned the feasibility of these designs, and were less willing to participate in innovations with the designers. However, if the designers provided reliable data to verify the feasibility of the design concepts, the craft artists were more prone to be persuaded and felt content to experiment and innovate. Therefore, designers must possess the ability to market their design concepts, thereby enabling craft artists to accept innovative creation methods and further promote the collaboration between the two parties.

Barrier

Brief design drawings

The design drawings provided by the designers often lacked detailed specifications. The craft artists found these rough drafts difficult to comprehend. Consequently, the craft artists may have produced works that differed from the designers' anticipations, resulting in conflicts.

Poor communication

The project team members proposed that poor communication inflicted negative influences during the collaboration process. Communication in a team facilitated team members to reach a consensus, thereby enabling team members to cooperate and fulfill the team objective. The quality of communication among the team members affected the success of the collaboration.

Poor attitude during collaboration

After the project collaboration was complete, numerous craft artists contended that the designer's attitude affected their willingness to collaborate. A number of interviewees perceived the designers' attitude as being self-centered, and that the designers adopted a dominant role during the collaboration project. The craft artists felt disrespected because the designers recognized themselves as being of superior importance compared to the craft artists. Consequently, the development of the collaboration was hindered, thereby affecting the craft artists' willingness to collaborate on future projects. Nevertheless, numerous designers exhibited a modest and sincere attitude, which facilitated the progression of collaboration. These designers befriended the craft artists and were willing to engage in future collaborations.

Factors that can be both enablers and barriers

Insufficient understanding of the craft

Some craft artists mentioned during the interview that the designers' lack of understanding of the crafts created obstacles in the development process, because the designers proposed overly idealized concepts that were not feasible and could not be produced by the craft artists. As a result, substantial time was spent on work correction. However, certain designers argued that their proposals of concepts that transcended those of traditional crafts were made precisely because of their limited understanding in this field, and that although craft artists may have exerted a substantial amount of corrections during this process, these investments were necessary for the collaboration. Based on previous studies, we infer that an insufficient understanding of craft benefits the development of

creativity during the process of collaboration. Cross-field teamwork highlights the heterogeneity of the members' background. A team with substantial heterogeneity is more likely to achieve creative performance; therefore, heterogeneous teams exhibit a greater efficacy compared to homogeneous teams [13,14]. In other words, if designers possessed an advanced understanding of craft, the homogeneity between designers and craft artists is increased, which influences team creativity and performance.

5. Discussions and Conclusions

This study adopted the Yii project as the primary case study. Interviews were conducted with the project executive and participating craft artists and designers in an attempt to elucidate the development process of cross-field collaboration between the craft artists and designers, as well as enablers and barriers encountered during this process. The Yii project is an ongoing project established in 2007 and promoted by governmental units. We summarized the development process for collaboration based on interviews with previous participants in the Yii project. In addition, from the perspectives of organization, project, and actor levels, we proposed enablers and barriers that affect collaboration, in hope that the results can benefit the subsequent development of the Yii project and serve as a reference for relevant collaborative personnel. Hence, we propose the following points:

Extend the Fuzzy front-end stage

The results of the interview highlight the differences between the collaborative design method of the Yii project and that of general design collaborations. In the Yii project, the designers were responsible for leading the collaborative process. The front-end stage was centered on learning, where members seldom discussed the design project. During this stage, the designers determined the preliminary direction for design and the target market before communicating with the craft artists. After a consensus between the designers and craft artists was achieved, product development was officially implemented. Conversely, for general design projects, discussions are held during the front-end stage of collaboration. In contrast, the fuzzy front end (FFE) was extended in the Yii project. Previous researchers have attested that the FFE stage is a critical determinant of successful product development [15,16], which is a fuzzy and uncertain process. In particular, during this initial collaboration, concept disagreements were common between the designers and the craft artists because of their unfamiliarity regarding each-others' fields. In the study by Tung [17] on the collaboration project between designers and weavers, gaps existed between the weavers and designers during the preliminary collaboration process. Weavers experienced difficulties in accepting the designers' novel concepts because they were accustomed to conventional craft methods, whereas designers proposed numerous unfeasible concepts because of a lack of understanding of crafts. Nevertheless, through continuous discussions and coordination, a consensus was gradually developed between the two parties and collaboration was successfully implemented. Therefore, we suggest that the amount of face-to-face communications between the craft artists and designers be increased during the FFE stage to enable a greater acquirement of tacit knowledge while simultaneously reinforcing the mutual understanding for the personality and habits of the designers and craft artists; thus, a collaborative consensus can be achieved.

The influence of heterogeneous and homogeneous members on collaboration

William and O'Reilly [18] contended that heterogeneous teams are comparatively capable of proposing diverse ideas and concepts (i.e., heterogeneous teams possess greater creativity). However, a larger number of conflicts may occur and collaboration efficiency may be reduced. Members in a team with high homogeneity can easily

communicate and interact, producing greater efficiency but lacking creativity. The members of the Yii project comprise craft artists and designers. Although originating from different professional fields, the two parties exhibit numerous similar characteristics. In addition, the results of this study indicate that the team members possessed similar personality traits, values, and motivations, thereby reducing the heterogeneity among members. In other words, the Yii project team, comprising designers and craft artists, exhibited a medium level of heterogeneity. Therefore, excellent efficiency and creativity was generated regardless of a reduced heterogeneity among team members. We infer that this may have been caused by the involvement of a foreign creative director. The creative director was from the Netherlands, and possessed a cultural background and experiences that differed from those of the members in the Yii project. Thus, heterogeneity was enhanced. Furthermore, the appropriate intervention of the creative director prompted an increased amount of creativity. In summary, appropriately planning the work allocation and composition of heterogeneous and homogeneous members can facilitate an elevation in the work efficiency and creativity of craft-design collaborations.

Communication through design drawings

During the design development process, nonverbal communication, that is, visualized presentation methods (e.g., sketches, computer graphics, and graphic symbols) were media adopted by the designers for communication. These communication skills are crucial professional techniques for a designer. During the design process, two objectives exist for communicating using visual presentation methods: (a) To present personal design concepts for corrections and development, as a form of self-communication and (b) to conduct opinion exchange with other designers or clients regarding temporary achievement of self-communication. Therefore, during the collaboration process between the designers and the craft artists, the visual data were important communication media that facilitated consensus establishment and enabled a mutual-understanding between the concepts of team members.

During the co-prototyping stage, the craft artists were mainly responsible for completing work production; therefore, the craft artists tended to anticipate that designers would provide vivid design drawings to facilitate communication and reduce potential difficulties during the production process. However, the designers perceived that the role of the craft artist was not limited solely to actualizing design concepts; rather, their knowledge regarding the field of craft was the core value for the collaborations. Thus, the designers presented brief design drawings during communication to enable explorations and modifications of the design concept, thereby enhancing the craft artists' sense of participation during collaboration. For example, designers determined the general appearance and material of the piece *LACQUERED STONE* (see Figure 1), whereas the craft artists were responsible for the creation, such as the color of the lacquer work and the arrangement of the gold foil. The designers and the craft artists both participated in the co-creation process. A few interviewees proposed that detailed design drawings were necessary for design concepts to surpass existing craft techniques. Adopting the piece *43* (see Figure 2) as an example, designers used computers to meticulously illustrate the appearance and size of the various components. Subsequently, the craft artists conducted 3D twisting on strips of bamboo. The technique was unprecedented and marked a breakthrough for the craft artists. Under this circumstance, accurate and detailed design drawings were necessary communication media. Thus, designers should adopt appropriate presentation methods to provide design drawings to elevate the participation of the two parties.



Figure 1. Lacquered Stone, by Chung-Tang Ho and Li-Shu Hung



Figure 2. 43, by Konstantin Grcic and Kao-ming Chen

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