Scaffold for designing modern products by reinterpreting the technique and philosophy of traditional crafts

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Abstract

The technique and philosophy of traditional crafts are relevant aspects of our culture that should be passed on to future generations. However, using traditional crafts in modern life in their original form can be a challenge. It is essential to reinterpret them in the modern context, keeping the essence of tradition. For this purpose, we conducted case studies of Koishiwara and Yame in Fukuoka Prefecture, Japan, where Japanese traditional crafts are still manufactured. We used Koishiwara Pottery and Yame-Fukushima Buddhist Altar manufacturing as our investigation objects, conducted studies on their historical background and performed detailed observations of manufacturing techniques and processes. Thereafter, we developed the concept of "KATA" in Japanese, generally translated as type or prototype. "KATA" has several other meanings; in this study, we subdivided the concept into three elements, namely, shape, pattern, and style. We used "KATA" to build a framework to be used as a scaffold to help analyze the techniques and background of traditional crafts and reinterpret them to design products in the modern context. Based on reinterpretations, we developed a series of prototypes of modern tableware with the essential techniques of traditional crafts to verify the usefulness of the framework.

Keywords: traditional handicraft, modern life, shape, pattern, style, Kata

The decline of traditional crafts is a common problem in modern industrialized countries. Wisdom, technology, and thought that traditional crafts have inherited for hundreds of years are important aspects of regional culture. However, with the emphasis on advanced mass production technology and convenience, many of the traditionally produced products are not suitable for modern life in terms of function and preference. These products have gradually disappeared from our daily lives, and their demand has drastically decreased. Furthermore, in terms of economy, prices commensurate with the time and labor involved in traditional crafting are less competitive compared to the price of mass-produced goods.

The starting point of our research was the motivation to inherit the wisdom and technique cultivated over generations in everyday lives as practical goods, by adapting them to our modern life, and evolving them as modern life culture. Therefore, traditional crafts must be transformed to products that are functional and culturally compatible in our age. We explored the techniques and spirit of traditional crafts and tried to find ways to design products including the essence of traditional crafts, which are valuable in our modern daily life to pass our heritage to future generations. This paper aims to discuss a framework that serves as a scaffold for designing traditional crafts in the context of contemporary life.

Literature Review

Three approaches are prevalent in studies that aim to pass on traditional crafts in the future. The first approach discusses how to establish the market economy of traditional crafts, as Rovine(2008), and Rogerson and Sithole(2001) have discussed. The second approach focuses on the method to archive traditional crafts as cultural heritage, noted by researchers such as Manitsaris et al. (2014) and Ide et al.(2005). The third approach focuses on how to use digital technology in the traditional crafts design and production process such as Ishida et.al (2005), and Zoran and Buechley (2013). The first approach concentrates on developing countries where handicraft is viewed as one of the major industries, and a few studies have been conducted on cultural aspects of industrialized countries. The second approach regards traditional crafts as cultural heritage and art objects; the viewpoint of a product closely related to modern life has disappeared. The third approach opens up new possibilities for traditional crafting; however, the perspective of the inheritance of culture and techniques is limited.

Research Methods

We took advantage of the opportunities of design practices in real projects, experimented with a new research process and theoretically studied it. Specifically, based on qualitative research by employing ethnography techniques, we described details of the selected traditional crafts, such as the production process, techniques, lifestyle of manufacturers and their families, and workshop management. Subsequently, we understood the products themselves and the mechanisms that support manufacturing. Based on these findings, we examined the framework that can be employed as a scaffold for acquiring insight and ideas. Using the framework as a scaffold, we
developed the design concept, carried out prototyping and implementation and reviewed the process to verify its usefulness.

We focused on two regions in Fukuoka Prefecture in Japan, Koishiwara village and Yame city, and conducted a two-step survey. The former area is known as a pottery (Koishiwara Pottery) production area and the latter by many kinds of traditional crafts such as Buddhist altars (Yame- Fukushima Buddhist Altar), paper lanterns, stone lanterns, Japanese paper, and woodwork.

We dealt with Koishiwara Pottery and Yame-Fukushima Buddhist Altars. The survey and practice of Koishiwara Pottery was regarded as the basic research to formulate a hypothesis, and the survey and practice of Yame-Fukushima Buddhist Altar was employed to modify and verify the hypothesis.

Discussion

Lifestyle of Koishiwara

The Koishiwara area is in a basin with an altitude of 400 meters and is surrounded by

mountains. It was once a crowded town village because of traffic and a pilgrimage to Hikosan, one of the most important religious mountains in Japan. However, after World War II, the population decreased and currently, it is recognized as a very depopulated area. To come to an understanding of the lifestyle found in Koishiwara, we observed a community of four craftsmen and their families by means of the participatory observation method. This survey commenced in 2007 for one year, although intermittently. The findings of this survey are as follows:

Livelihood:

- Most of the pottery workshops are managed by a couple of people in a family. They conduct pottery workshops and agriculture at the same time, both of which form the basis of their livelihood.
- They mainly manufacture tableware for daily use and sell it at affordable prices.
- Although sales have declined compared with the booming economic period between the 1960s and 1980s, they maintain a livelihood but feel uneasy about the future.

Lifestyle:

- The consciousness of the community is strong, and village people, including potters, enthusiastically participate in the activities of the community such as festivals and unions.
- There are many opportunities to gather and eat together in large numbers with families and friends.

Values:

- All four craftsmen were born into potter families, attended college in urban areas, and returned to their hometown to follow in the footsteps of their families.
- They are proud of living in Koishiwara and being the successors of traditional potter families.
- Boys of potter families tend to respect their fathers' work and want to be craftsmen too.

History of Koishiwara Pottery

In the Koishiwara area, approximately 50 potters' workshops are currently in operation. There remain 16 kilns ruins that were built in the 17th century; the pottery production began around that time. In those days, craftsmen worked while traveling in the vicinity searching for soil suitable as raw material for pottery. Consequently, Koishiwara Pottery historically had two types of potteries, namely, Takatori Pottery and Nakano Pottery. Takatori historically produced tea cups for tea ceremonies with a traditional aesthetic sense while also manufacturing life tools used in daily life. Nakano manufactured large-sized ceramics such as pots, jars, and other large vessels.

Findings from history reveal the following:

- Pottery not used as artwork but on a daily basis was mainly manufactured.
- There is a history of producing large vessels such as pots and jars because of suitable soil and techniques.

- These are produced while responding flexibly to the natural environment by using locally available materials.

Koishiwara Pottery techniques

While visiting four pottery workshops and observing the production process, we interviewed the craftsmen and surveyed the techniques that were handed down to Koishiwara Pottery. The findings are as follows:

- All products were manufactured by handwork, using potter's wheels.
- As a pattern of decoration on the surface, "Tobikanna," "Kushime," "Hakeme" and so forth are often used (Figure1). There are many techniques to make patterns while rotating a potter's wheel.

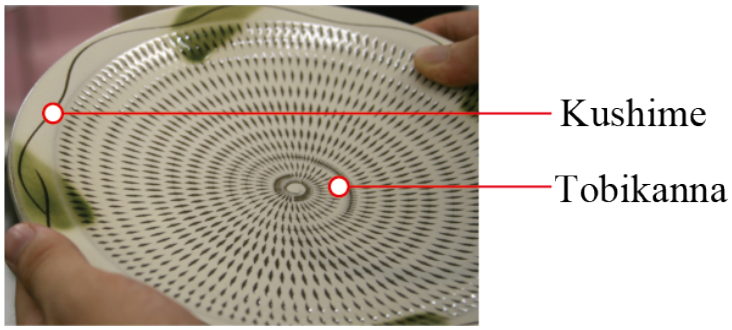

Figure1: Koishiwara Pottery decoration on the surface

- Glazes are made individually in each potter's workshop using raw materials such as patina, rust soil, wood ash, and straw ash. Straw, in particular, is a by-product of agriculture.

Insights from the findings

Based on the findings of the survey, insights were deduced by the designer of the project team and the design students. We categorized the insights according to the thinking process of design. Identity: Conditions to be met when designing

- Using soil of the Koishiwara area
- Use of natural glaze, which can be taken from the Koishiwara area
- Production using a potter's wheel

Techniques and modeling: Physical characteristics of Koishiwara Pottery that can be applied to modern products

- Mass production within the scope of handicrafts
- Techniques and raw materials to produce large-sized pottery
- The existence of successors who will hand down their skills

Lifestyles: Contexts, meanings, and values that can be applied to modern products

- Strong community consciousness and opportunities for eating together
- Manufacturing tableware for daily use

Application of the insights framework for concept-making and prototyping

Working together with the designer and the design students of the project team, we developed a concept based on the categorized insights above, produced a prototype, and reviewed the process.

Figure 2-4 demonstrate the prototypes of a new dishware series of Koishiwara Pottery. The design concept was “Timeless and Share.” “Timeless” was conceived from the fact that the potters will have successors, which will enable the continuation of the production of the same type of products and supply necessary quantities of the products at the needed time. “Share” is a concept that suggests a rich lifestyle in the modern age, conceived from the habit of eating and spending much time together with many people because of the strength of community consciousness of the village. The concept of “share” is physically supported by the traditional techniques that can produce large-sized pottery. It enables us to design a large plate with a diameter of 40 cm. Three or four circular dishes are made separately and combined with each other to produce one large plate by using the traditional technique of making large-sized vessels. This shape is suitable to use for different kinds of foods, which encourages users to enjoy their meal by sharing foods and their time.

Figure2: Koishiwara Pottery, tableware series

Figure3: Koishiwara Pottery, 3 plates are combined

Figure4: Koishiwara Pottery, 4 plates are combined

From consideration to hypothesis

By listing the findings obtained from the survey and sharing them in the project team, we confirmed that effective insights to develop design concepts and apply them to physical prototypes can be obtained. However, this method of categorizing is specialized in the case of Koishiwara Pottery and unsuitable for wide use. Considering that the succession of traditional crafts is not limited to a specific area and is a general problem that many modern industrial countries experience, formatting the flow from findings to insight and applying it to other cases is needed. It would be effective to make it function as a scaffold for setting up a framework from which to obtain ideas. Therefore, inspired by Alexander (1964), we proposed a hypothesis: Structuring based on the concept of "KATA" is effective. The word "KATA" in Japanese means prototype in the manufacturing process and is an essential aspect of ensuring the productivity and quality of product-making. However, "KATA" is essentially a compound word that means shape, pattern, style, form, format, type, mold, and so forth. We focused on the elements that constitute a product: the form, surface, and usage/meaning. Therefore, we decided to draw ideas from three concepts of "KATA" as a framework: shape (formative design), pattern (surface/decorative design), and style (usage/cognitive design).

We applied this framework to Koishiwara Pottery; this is thus described:

Shape: round shape made by potter's wheels/large-sized vessel made using hard soil from the Koishiwara area

Pattern: rich variation of glazes made from natural raw material from the Koishiwara area/various decorating techniques

Style: handmade semi-mass production/sense of belonging to the community

Our hypothesis is that the three elements of "KATA," namely, shape, pattern, and style, can be used as a framework to be employed as a scaffold to consider the design concept, shaping, and functions and to create variations. Furthermore, it is easy to classify the characteristics in other cases and it also has a high affinity with database creation. In the next step, we examined the effectiveness of this hypothesis by designing a diversion of Yame-Fukushima Buddhist Altar techniques.

Application of scaffolds in design project of Yame-Fukushima Buddhist Altar

The production of Buddhist altars in the Yame region began in the 19th century; the manufacturing techniques handed down to the present age were established in approximately 1850. The production of Buddhist altars comprise more than 80 manufacturing processes, which are divided among six craftsmen. As there are many complex, technical, and modeling elements, and the division of labor is well-structured, we believed it was suitable as a case for testing our hypothesis. The six steps of manufacturing Buddhist altars are as follows:

1. Constructing the wooden basis
2. Crafting the "mini-shrine" structure
3. Carving the wooden decorations
4. Making decorative copper clamps
5. Gold and silver powder decoration
6. Painting lacquer/gold gilding/assembling

We focused on the first step, namely, "constructing the wooden basis" and the final step of manufacturing a Buddhist altar, namely, "painting lacquer/gold gilding/assembling." Using the framework of shape, pattern, and style as a scaffold, we conducted a detailed observation survey of the manufacturing process and culture and conducted interviews with craftsmen. We examined the findings obtained from the series of surveys, which are thus summarized.

Shape:

- A delicate shape that can be produced by cutting the timber to make a contour and minutely shaving it by hand
- Techniques to efficiently mass produce parts of the same shape with handwork using prototype
- Technique to prevent warpage by using specially prepared

plywood Pattern:

- Lacquering techniques such as "fuki-urushi," "gold gilding," and

"maki-e" Style:

- Using and maintaining lacquered products over generations

Based on the findings classified by the framework of the three elements of "KATA" as a scaffold, the project team members, including the designers and non-designers, reinterpreted traditional techniques and thoughts in the context of modern life. We came up with an idea to use the techniques of wood cutting, lacquering, and gold gilding (used for making Buddhist altars) to make cutlery and trays. Using wood processing techniques that can produce efficient delicate forms with wood, a manufacturing method for plates which do not warp over time (shape), and lacquer, which lasts long and maintains the product (style), it is further thought that surface variations in the product using various lacquering techniques (patterns) will bring new value in modern life. This product conceives ideas from approaches to understand the manufacturing process in the framework of "KATA." The completed cutlery and tray prototype are shown in Figure 5.

In the Yame-Fukushima Buddhist Altar design project, we further expanded the concept of "KATA" and applied it, not only to the design of the product, but also to the communication design to spread the idea. The exhibition design in New York and the graphic design of a brochure for public relations are displayed in Figure 6-7, respectively.

Figure5: Cutlery and tray series made by using techniques of wood cutting, lacquering, and gold gilding. Shape: Five types of shapes with five types of surface decoration (pattern). By unifying shapes, the difference in the pattern of the surface decoration stands out. Pattern: As clearly seen, variations due to five types of decorative techniques, clear, rubbed lacquer(fuki-urushi), semi-lacquer, all lacquer, and gold gild are displayed and surface processing and decorative techniques are explained

Figure6: Exhibition design. Style: Presenting usage scenes on the wall explains how to use unfamiliar products oversea. The product series are displayed to show the aspects of shape and pattern.

Figure7: Graphic design. Shape: Part surrounded by green. Style: surrounded by blue. Pattern: Part surrounded by orange.

As noted previously, the “KATA” framework focusing on the three elements was useful as a scaffold in the process of product design for aspects such as survey, design concept formulation, idea consideration, and communication design. Using the “KATA” framework as a scaffold helped create a simple, unified product system that reflects traditional essence and enables clear communication with potential customers.

Conclusion

This study aimed to interpret traditional crafting techniques and methods in the context of modern life and to present a framework that can be employed as a scaffold for designing. While designing the Koishiwara Pottery case and organizing the findings obtained from a qualitative field survey using ethnography, we formulated a hypothesis of “KATA” framework consisting of three perspectives, namely, shape, pattern, and style. Using this in the design project case of Yame-Fukushima Buddhist Altar, we examined the usefulness and possibilities of the scaffolding based on the hypothesis; consideration was given to the structure of the survey, thinking process, and inspiration. It was also suggested that it supports as a scaffold, not only for designing products, but also for conceiving and implementing a consistent design from product development to exhibition, as well as communication design with consumers such as various printed materials.

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