

Understanding, Cooperation, Recreation and Application—A Teaching Practice towards the Design of Ethnic Patterns

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ABSTRACT

Exploring a teaching method for ethnic pattern design, which echoes the spirit of "creative transformation, innovative development" in the requirements of traditional culture, could embody the cultural connotations and meet the industrial needs. The course was delivered with three steps of original collection, design experiment and production practice with the adoption of fieldwork, co-innovation, and combination of school and enterprise. The induction and explanation of 59 patterns in 12 themes, and 6 series of school-enterprise designs were produced based on the collected 73 pieces of Dong brocade. The inheritance and innovation of ethnic patterns can be effectively promoted by integrating in-depth fieldwork, designing with local culture inheritors, and production practice with enterprise.

Keywords: Ethnic Pattern, Dong Brocade, Teaching Practice, Inheritance, Innovation

1. INTRODUCTION

Ethnic patterns are widely used to construct "cultural confidence" in modern design education because of their unique visual and semantic features. Teachers and students are encouraged to research, apply and redesign these patterns in various open college courses. However, "Cultural Logistics" may breed variations and transformations in ethnicity patterns. Without the semantic understanding of patterns, the application of patterns is easy to become "destructive design". And in the application, the ethnic patterns are often simplified as the surfaces on products, resulting in "decontextualization, commodification and misrepresentation", [2] and the absence of the social value of ethnic groups, thinking structure, behavior logic and other cultural connotations.

Since 2009, the Hunan native project of "New Channel" in Hunan University has been carrying out regional cultural research and social innovation activities on ethnic minorities in impoverished mountainous areas and developing a deep research foundation in Dong Autonomous County of Tongdao in Hunan Province. So,

this course took the Dong brocade Pattern as the starting point to explore the methods of introducing ethnic patterns into modern design education.

2. CURRICULUM ORGANIZATION

Dong people reside in the southwest of China, who have no written language and express most of their feelings and experiences with their brocade. After years of accumulation, the patterns and ways of composition have formed a fixed paradigm. Therefore, this curriculum was divided into three steps. Firstly, through fieldwork, students, teachers and local culture inheritors collect and summarize the patterns, semantic information and combination paradigms of Dong brocade. Secondly, collaborating with local culture inheritors, a staged design experiment was conducted to explore the rules of Dong brocade pattern design. Thirdly, apply the design plan to the production project and explore the business value of the ethnic patterns (Fig. 1).

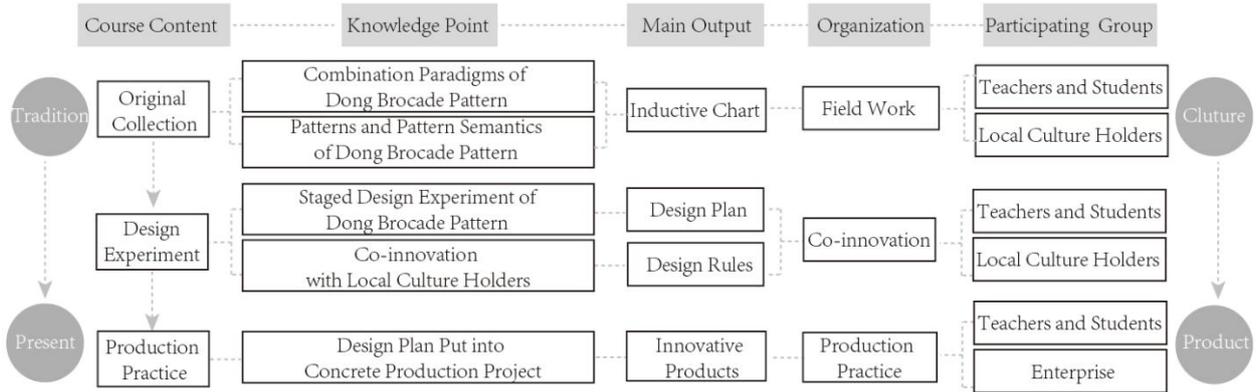


Figure 1. The design of curriculum organization

3. CURRICULUM PRACTICES

3.1. Original Collection of Dong Brocade Patterns

3.1.1. The combination paradigms of Dong brocade patterns

This course included 73 pieces of Dong brocade. Interviews with local culture holders revealed that the Dong brocade patterns have paradigms of composition. To facilitate understanding, we used the "Module" theory (Lothar Ledderose, 2002)[3] to analyze the combination paradigm of Dong brocade patterns. The original carrier of the Dong brocade pattern is the plain fabric intersected by warp and weft. The way it is woven means that the Dong brocade pattern is made up of small square cells similar to pixel points, which is called elements. The basic components of the Dong brocade patterns have been deposited over the years and gradually formed the standard patterns. A single standard pattern is a module. The weaver selects and assembles the modules according to the established rules. A set of modules is called a series, and one combination of series is called a decoration unit. The whole pattern formed by the combination of decorative units and applied to an object is called mass. Taking the "Star Anise Phoenix Brocade (Zj1014z)" as an example, which is a collection in the "New Channel" Digital Museum of Dong Brocade, all the patterns in these pieces of Dong brocade called mass, the decorative unit in the mass is composed of flower series and bird series. In the bird series, each bird in a diamond frame is a module, and then the pixel points formed in the module are elements (Fig. 2).

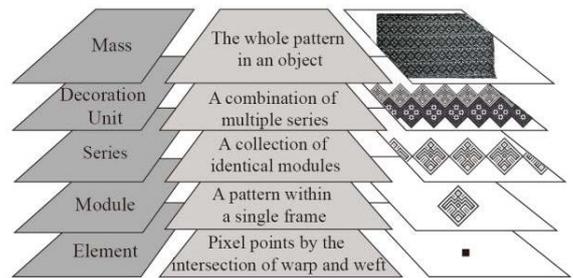


Figure 2. The composition logic of Dong brocade pattern

Meanwhile, how to put the patterns together in the traditional Dong brocade pattern also has some rules to obey. Visually, there are two ways to make up a mass; one is the "small pattern brocade" with the series structure of the horizontal straight line; the other is the "big pattern brocade" with a single large module in the center and surrounded by a series of rhombic shapes (Fig. 3). Semantically, the combination of patterns needs to be in line with Dong's cultural traditions, natural laws and auspicious meanings. For example, integrating the module "water" with module "fish" can demonstrate the meaning "fish is swimming in the water"; the module "fish" and module "dragon" are combined to symbolize "a fish leaping over the dragon gate—having passed a competitive examination". In contrast, the combination of module "water" and module "flower" is less common.



Figure 3. The "small pattern brocade" and "big pattern brocade" in traditional Dong brocade

3.1.2. Collection and Analysis of Patterns and Their Semantics

Organize students to work with local culture inheritors to extract the pattern modules and meanings in traditional Dong brocade (Table 1).

Table 1. Traditional Dong brocade pattern modules

Number	Name	Meaning	Pattern modules		
1	Spider	It is said that the spider spinning webs encouraged the King Goujian, the ancestor of Dong people, so that they regarded the spider as the symbol of wisdom and hard work, and used it in swaddling clothes of babies.			
2	DuoYe	Named after the dance of Dong people's sacrificial ceremony to fire, the pattern shows that people are holding hands and dancing. It also shows the unity and friendship of the Dong people.			
					
					
3	Flower	The flower pattern is a general term for many kinds of flowers. There are a wide variety of flowers in Dong communities. Dong people decorated clothes with these flowers to express the pursuit for beauty and love for life.			
					
					
					
4	Sun	The sun pattern has various styles. Some retain the sun's circular features, and some vary as the shape of flowers, and some are symbolized into abstract expressions. It originated from Dong people's worship of the sun, which is often seen in babies' clothes and is considered as a protective God.			
					
					
					
5	Phoenix	Phoenix pattern is used in women's head handkerchiefs, lapels, shoes, baby straps, quilt covers and pads. It is often collocated with the Dragon pattern to express nobility, beauty and intelligence.			
					
6	Dragon	The dragon is a symbol of male dignity. The dragon pattern is viewed as the broken line of the intersection of thick and thin. It is used in man's clothes.			
7	Bird	It is said that the bird guided the Dong community's migration southward. It is mostly appeared as a continuous pattern.			
8	Horse	Horses represent strength and speed. Some horses are marked with heads, and some are running with the hoof upward, and some are carrying a person. It often appears in a diamond-shaped frame, which means mountainous.			

9	Fish	Living near the water, Dong people like enjoying aquatic products. So, there are lots of fish patterns in their clothes. The fish pattern looks similar to the shuttle. It occasionally collocates with the Dragon to tell the story of “a fish leaping over the dragon gate”.			
10	China fir	Fir trees were often used as building materials by Dong people. So, the pattern looks like stacked wood.			
11	Snake/Water	Snakes represent mystery and agility. Most of the snake patterns are abstracted as broken lines. Now Dong people also view it as water to indicate that they live near water.			
					
12	Bamboo root	The bamboo root is a unique pattern in Hunan province. It expresses the lush roots of bamboo with dense lines, representing the worship of strong reproductive ability. It is mostly in men's clothes to pray for more children.			

After the original collection, this course was divided into three stages to carry out design experiments on the four levels of Dong brocade: namely, module, series, decoration unit and mass (Fig. 4). The design is discussed with the local culture holders of Dong people.

3.2. Design Practice of Dong Brocade Pattern

3.2.1. The experimental path of design practice

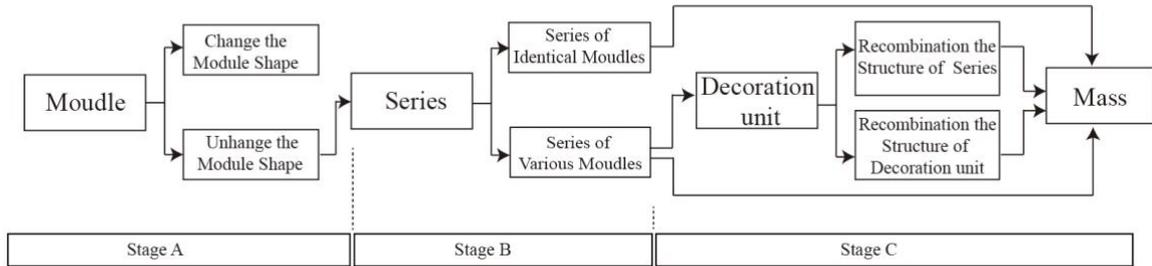


Figure 4. The experimental path of design practice

3.2.2. Design practice

Stage A: Rebuild the Dong brocade module by preserving the most visually iconic representation of the module, and then deconstruct and reconstruct it. For example, for the module of the flower, each corner belongs to the whole piece. Now, these corners are converted into the outer contour of the module, and then other module patterns are filled in the corners to form a new module (Fig. 5). After the redesigning, the local culture holders commended that "this is a brand-new Dong brocade" and "I couldn't imagine". As a way for Dong people to record their lives and express their wishes, the Dong brocade pattern is a fixed form like the written word. The redesigning of modules recombine the order of the patterns, which is similar to the process of reorganizing disrupted letters in

the word. The products process is of great cultural significance.



Figure 5. The design practice of change the module shape

Stage B: According to the experiment results of stage A, the module itself cannot be changed. Thus, the redesigning at this stage is conducted on the series. The experiment was processed in two different groups. The first group forms a new series with modules that are identical in

content but different in size, and then generate the mass (Fig. 6).

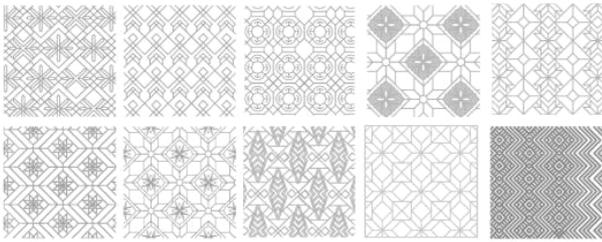


Figure 6. The design practice of forming series with identical modules

In the second group, a variety of modules are combined to form a new series. At this time, the visual forms of patterns are more abundant (Fig. 7).

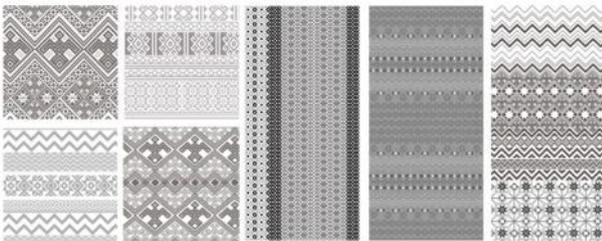


Figure 7. The design practice of forming series with various modules

The local culture inheritors praised that the design by the first group was clear and easy to understand. But as for the design of the second group, they said that some were understandable and some patterns didn't make sense. Just like making up a "phase" of "words" in different ways, some "phase" conform to the original expression habits, such as "dragon" and "phoenix"; some "phase" cannot express meanings like "dragon" and "flower".

However, it is worth noting that the local culture inheritors are able to understand some new combinations that have not been seen before. Similar to the formation of new "phases" through the new combination of "words", it can be accepted in line with the contemporary context. This coincides with UNESCO's definition that the intangible cultural heritage is a "living heritage" in the Convention for the Safeguarding of the Intangible Cultural Heritage, in which UNESCO holds the view that intangible cultural heritage will be "constantly recreated".[4]For instance, We combined "Duoye" and "Water", Dong people have two versions of understanding, namely, "people swimming in the water", or "The Smiling Proud Wanderer". This proves that the composition of the pattern and the meaning they convey are continually updated as time goes by.

Stage C: Design the form of the decoration unit. From the experiment of stage B, it is confirmed that the composition of series is restricted by the semantics of patterns, while the decoration unit is composed of multiple series, and its compounded semantics also need to be understood and interpreted. Hence, in this stage, the visual innovation is

carried out by module combination that their semantics has to be accepted. At this time, the original series structure formed due to the restriction of weaving technology is broken, which breaks the traditional composition form of "big pattern brocade" and "small pattern brocade", and the visual effect is more novel (Fig. 8). Now, "phases" form a new "sentence". After reading, local culture inheritors said, "I haven't seen it, but it makes sense." (Fig. 9)



Figure 8. The design practice of the decoration unit form



Figure 9. Fieldwork and co-innovation in Curriculum

3.2.3. The rules of pattern design

Through the design experiment, it can be found that under the composition logic of the Dong brocade pattern, the constraints of each level are different. The main logic of element is weaving technology, which contains no meaning. The main logic of a module is its vision, which has a fixed semantic meaning and an immutable format. The main logic of the series is the permutation. Its semantics is determined by the combined modules. Its format can be changed, but it is constrained by semantics. The organization logic of the decoration unit is mainly interpretation logic, and its semantics is generally a compound form with auspicious meaning. The transformation is constrained by the meaning. When the modules are different, the boundary between the series and the decoration unit is relatively fuzzy. That is, when there are various modules with different semantics in the same series, the series become a decoration unit. The main composition logic of mass is the usage logic, which has different requirements for different products (Table 2).

Table 2. The rules of Dong brocade pattern design at different levels

Logic	Element	Module	Series	Decoration unit	Mass
Semantics	Technology	Vision	Permutation	Interpretation	Usage
Format	No	Fixed semantics	Composition semantics	Composition semantics	General semantics
	No	Immutable	Semivariable	Semivariable	Convertible

3.3. Production Practice of Dong Brocade Patterns

Although the pattern comes from brocade, its application is not limited to fabric.[5] This course mainly explored the application of patterns with both economic and semantic values from the perspectives of textiles, daily necessities and architecture.

3.3.1. Textiles

The practice of textiles mainly focuses on two aspects. One is hand-made products. Restricted by the weaving technology of the original Dong brocade, the original composition of the pattern is retained. The semantics of the mass is consistent with product types, such as the design of ties—the combination of “phoenix” and “dragon” is adopted to show the nobility. (Fig. 10).



Figure 10. Hand-made tie (jointly developed with "Suo Shuo" company)

The other one is machine-made textile, which provides more possibilities for the realization of patterns. The flexibility of patterns is improved, which can change the structure of the series and decoration unit. The constraints of semantic and technical should be considered in practice. For example, at the early stage of sock design, to highlight that the raw material is bamboo fiber, the designer and the local culture inheritors all chose the "bamboo root" as the main pattern of the sock design. However, due to the restriction of coil weaving technology of the sock, the pattern is too dense to complete the jacquard thread cutting. As a result, the elasticity of the sock will be affected. Gradually, the pattern "bamboo root" module was deleted (Fig. 11).



Figure 11. Machine-made sock (jointly developed with "Sha Li socks industry")

If jacquard or print is adopted, the design of patterns will be more flexible, and the product categories will be much more abundant (Fig. 12). Computer jacquard and digital print is mainly used in the experiment.



Figure 12. Jacquard and digitally printed textiles (products exhibited in the 116th Paris Expo/products of Dong brocade × Mercedes Benz research project)

3.3.2. Architecture

In this field, identical modules are used to design the mass. Firstly, identical modules are more unified in visual aspect and semantics. Secondly, as this practice mainly focuses on the indoor partition, the supportability and size between modules need to be considered. For example, when the pattern is too large, it is easy to cause visual confusion. When the pattern is too small, the gap between the structures is too narrow to meet the requirements of lighting and ventilation (Fig. 13).



Figure 13. Architectural application (Landing in China Dong brocade heritage base)

3.3.3. 3D printing

3D printing technology provides an effective way for the three-dimensionalization of patterns, which could facilitate the broader application of Dong brocade pattern. For example, the Dong brocade pattern module is combined with the bird shape to form a new three-dimensional hollow shape and create a new product category (Fig. 14).



Figure 14. 3D printing products

4. CONCLUSION

The design curriculum of ethnic patterns contains three stages. In the early stage, in-depth fieldwork is essential to understand the meanings of the patterns. In the middle stage, co-innovation is carried out with the local culture holders to ensure the design to conform to the local cultural connotation. In the final stage, the production practice mode connected with the market and industry is explored to widen the application scope of the patterns. Thus, students can participate in transferring the traditional

to the modern as well as shifting culture to the industry in the curriculum.

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