The teaching content of Shanghai style furniture design for Chinese art design speciality

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ARTICLE INFO

Keywords:
Shanghai style furniture (SSF)
Chinese art design speciality
Redesign
Simplified elements
Reformed forms

ABSTRACT

Shanghai style furniture (SSF) was the classic case of Chinese furniture culture, we have researched on the teaching content of SSF design for the furniture design course in Chinese art design speciality, and carried out the teaching practice of SSF design for some students. According to this teaching practice, the students' design attitude towards SSF was summarized, which will provide a basis for inheriting SSF design and developing SSF design teaching. In our teaching practice, 132 students had learned the design experiences of SSF, carried on the design practice of SSF, and summarized their SSF design. In the process of students' redesign of SSF, generally speaking, the SSF style was characterized by the combination of China and the European and modern simplicity. Modern elements were added to the SSF design, and fine works were refined in the traditional Chinese modeling, so as to make SSF more in line with the trend of modern design and better carry forward the concept of design service life. After studying this course, these students had basically mastered the design method of SSF. Excavating the practical value of SSF culture and designing new SSF, which are not to copy traditional art style, but the recreation and redesign basing on modern cultures.

1. Introduction

In China, art design is an interdisciplinary and applied speciality, which mainly training cross-applied art designer who can meet the needs of sustainable development for society, culture and economy (Su 2001; Zhang 2003; Zhou 2014). Basing on the Chinese artistic style of contemporary industrial products had changed from the functional requirement to the cultural requirement, therefore, the education of art design speciality was no longer limited to the modern design methods, and various excellent traditional cultures were integrated into the teaching content (Xiao 2016; Yang 2018). As one of the important types of traditional furniture in the world, Chinese traditional furniture (CFT) has always attracted the attention of many scholars who mostly researched the form characteristic and history culture in CFT (Robert 1970; Yi 1993; Gustav 2000; Li 2001; Wang 2007; Yang 2010; Zhou 2016), therefore, the CFT was the most active for the teaching content of furniture design course in Chinese art design speciality (Hu et al., 2008). However, for avoiding the redundancy of CFT in present Chinese furniture market who already had an outrageous number of the furniture products of CFT, it is imperative that to integrate other Chinese classical furniture styles into the teaching content of furniture design course in Chinese art design speciality.

Shanghai style furniture (SSF) was the epitome of Chinese furniture culture at the end of the 19th century and the beginning of the 20th century, it originated in Shanghai and affected the whole of China (Zou 2010). In the modern history of China, Shanghai style culture can not be ignored either. Since the opening of Shanghai in the 19th century, European culture had been pouring in and colliding and blending with local culture in Shanghai. Shanghai style culture represents an important collision and blending between Chinese and European culture. SSF was a kind of furniture that integrates European furniture, traditional Chinese style furniture, traditional Chinese style furniture Local folk furniture in one of the furniture style. SSF was the important transformation period of design concept for Chinese traditional furniture (CTF) to transform into Chinese modern furniture (CMF) (Zou 2017). SSF had resolved the differences between Chinese and European cultures, and avoided the defects that CTF deviating from modern life (Zou 2016). Therefore, as a classic case in Chinese furniture culture (Chen and Lv 2010; Xu 2012a, b; Zheng 2015; Dai and Qiu 2016; Yuan 2016; Liu 2017), SSF should be integrated into the teaching content of furniture design course in present Chinese art design speciality, which be conducive to the training of
furniture designers who can design the furniture products with more Chinese cultural characteristic. Therefore, it is necessary to study the teaching mode of design education of SSF. Practice has proved that a complete teaching system plays a positive role in strengthening students’ professional foundation, improving design ability and paying attention to quality cultivation. Based on our previous works about the design research of SSF and the design experiences of SSF, we have researched on the teaching content of SSF design for the furniture design course in Chinese art design speciality. Therefore, in our this work, we have carried out the teaching practice of SSF design for 132 students. According to this teaching practice, the students’ design attitude towards SSF was summarized, which will provide a basis for inheriting SSF design and developing SSF design teaching.

2. Research design

SSF had been integrated into the teaching content of furniture design course, and 132 students volunteered to take part in this course that mainly included study on the design experiences of SSF, the design practice of SSF, and the summary of SSF design. After studying this course, these students basically have mastered the design method of SSF.

In study on the design experiences of SSF, the functional design experiences of SSF from lifestyle changes, the form design experiences of SSF from multicultural integration, the engineering design experiences of SSF from advanced science and technology, whose process and results all been focused and researched.

In the design practice of SSF, all volunteer students should be divided into three groups to carry out the design practice of SSF, so that the design practice focuses on functional design, modeling design and engineering design respectively. We plan to summarize students’ design attitude from the fusion of classical elements and forms in Chinese and European traditional furniture, and from the fusion of modern forms and traditional elements. We plan to study their design attitude about functional design from the SSF application scenarios, about modeling design from the classic legs of SSF, and about engineering design from the material and structure of SSF.

We had confirmed that informed consent was obtained from all participants for our experiments. We declare no conflict in ethical conduct.

3. Research participants

There are 132 students participating in the course study, including 38 graduate students and 94 undergraduates, 20–24 years old. This can reflect that more young designers will complete the design of SSF in the future, and the future users will also tend to young people. These students

| Direction of cultural integration                              | Number of people | Proportion |
|---------------------------------------------------------------|------------------|------------|
| The integration of Chinese and European cultures              | 132              | 100%       |
| The integration of traditional culture and modern culture      | 91               | 68.94%     |
| The integration of elite culture and popular culture           | 85               | 64.39%     |

Table 1. Form design direction of SSF multicultural integration.

Figure 1. The integration of Chinese and European cultures.
come from art design speciality, such as product art design, interior art design and visual art design. Among the students, 98 girls are significantly more than boys (34). The age distribution and gender distribution of these volunteer students can reflect the trend of SSF being younger and focusing on female factors.

4. Study on the design experiences of SSF

Our previous research found that the design experiences of SSF mainly including the functional design from lifestyle changes, the form design from multicultural integration and the engineering design from advanced science and technology. The design experiences of SSF were firstly integrated into this course, and the 132 students first learned the design experiences of SSF in this course. After learned these design experiences, the 132 students were asked to investigate and research the influencing factors of the above design experiences in three aspects, and to complete the report of research. Through the study of SSF design experience, we can fully understand the development process of SSF design, and form a systematic design thinking and method.

In the functional design experiences of SSF from lifestyle changes, 88 students had reported that the lifestyle changes been mainly influenced by European modern lifestyles that including the comfortable living style, the residing style of urbanization, the working style of industrialization, the entertainment mode of popularization, and the thinking way of capitalization.

In the form design experiences of SSF from multicultural integration, these students had reported that the multicultural integration mainly including the integration in Chinese and European cultures (132 students all reported) (Figure 1), the integration in traditional and modern cultures (91 students reported), the integration in elite and popular cultures (85 students reported), as Table 1 shown. In the integration of Chinese and European cultures, 132 students had all reported that the implications of Chinese traditional patterns been integrated into the European classic decorative forms, the classical elements of Chinese and European furniture been integrated into the same piece of furniture, and the integration of classical manufacture technology in Chinese and European furniture.

In the engineering design experiences of SSF from advanced science and technology, the 102 students had reported that the machinery manufacture technology and the modern materials science helped SSF to meet the needs of product quantity for the huge popular market. The 102 students had all gave an example of the rotary-cutting wooden component that became the most common component of Shanghai style chair, and based on the machinery manufacture technology.

5. The design practice of SSF

After having a certain understanding of the design experience of SSF, all 132 volunteer students were divided into three groups to carry out the design practice of SSF, so that the design practice focused on functional design, modeling design and engineering design respectively. And all design practices simplified the shape and content from the fusion of classical elements and forms in Chinese and European traditional furniture, and from the fusion of modern forms and traditional elements. In the design practice, these students all collected the main information through the internet for their SSF design, they were asked to catch the whereabouts of SSF in their hometown. These students all focused on the decorative art in Chinese and European cultures, and they all redesigned...
these classical decorative elements and forms for their SSF. These students all designed SSF around their own lifestyles, which made the designed SSF with more today’s characteristic.

From the results, in the form of expression, most of the schemes that focused on functional design and engineering design adopt the form of computer-aided modeling, which was simple, fast and easy to express functions (Figure 2); Most of the programs that focused on modeling design are in the form of hand-painted records, which had a sense of flexibility and randomness, and can better reflected the uniqueness of modeling (Figure 3). All 132 design schemes and 372 single pieces were based on the concept of collision and integration of European culture and Chinese local culture, which reflecting the furniture style of integrating European traditional furniture, Chinese traditional furniture and Shanghai folk furniture. They were the deformation and in design of form, function and style in order to adapt to modern design in terms of composition principle, material application, decorative elements and artistic atmosphere.

In the design practice of SSF that from the integration of classical elements and forms in Chinese and European traditional furniture, these students had completed 372 single piece of SSF designs in total. These designs had based on that the classical elements and forms of Chinese and European traditional furniture been equably integrated into a designed furniture, the redesigned Chinese classical decorative element been integrated into European classical furniture whose form also been redesigned by them, the redesigned European classical decorative element been integrated into Chinese classical furniture whose form also been redesigned by them (Table 2).

In the design practice of SSF that from the integration of modern forms and traditional elements whose shape and content been simplified, these students had completed 140 SSF designs in total. The 75 of 140 designs had based on that the simplified and reformed European classical decorative element been integrated into the furniture of geometrical form whose design from European Modernism (Figure 4). The 65 of 140 designs had based on that firstly simplified and reformed some classical elements and forms from Chinese and European traditional furniture, then equably integrated these simplified and reformed elements and forms into a designed furniture (Figure 5).

In the design practice of SSF design, the preference of volunteer students for SSF application scenarios mainly lies in the living room and bedroom, accounting for 72.87% (Table 3). In the selection of materials, the distribution is relatively average, in which traditional solid wood furniture and European style upholstered furniture account for more than 50% (Table 4).
SSF’s most distinctive feature was the integration of Chinese and European art styles. It was a masterpiece of the transformation of Chinese art styles from classical to modern and the integration of Chinese and European classical art styles. In the practice of SSF design, the redesign of modeling mainly focuses on the combination of Chinese and European art styles, that was the difference of design thinking and methods between Chinese and European art styles. In all the works, the combination of Chinese characteristics was that the structure was based on the frame (76.88%), and the form follows the ideas of the combination of square and round (47.04%) and advocating “Chinese art style” (57.26%) (Figure 6), so as to achieve the artistic conception of the combination of virtual and real; The combination of European art style features was segmented (48.92%), pointed arch (22.31%) and European column.

| Table 3. Students’ preference for SSF application scenarios and furniture types. |
|---------------------------------|-----------------|-------------|-------------|
| Space             | Type       | Quantity | Proportion | Total share |
| Living room      | Sofa       | 60       | 16.13%     | 32.26%      |
|                  | Tea table  | 60       | 16.13%     |             |
| Bedroom          | Bed        | 48       | 12.9%      | 40.61%      |
|                  | Bedside cupboard | 36   | 9.97%      |             |
|                  | Dresser    | 42       | 11.29%     |             |
|                  | Wardrobe   | 24       | 6.45%      |             |
| Restaurant       | Table      | 18       | 4.84%      | 14.52%      |
|                  | Cupboard   | 18       | 4.84%      |             |
|                  | Dining chair | 18   | 4.84%      |             |
| Study            | Desk       | 24       | 6.45%      | 12.9%       |
|                  | Chair      | 24       | 6.45%      |             |

| Table 4. Material selection and classification in SSF design practice. |
|---------------------------------|-----------------|-------------|
| Furniture materials             | Quantity | Proportion |
| European style wooden furniture | 43       | 11.56%     |
| Rattan furniture                | 17       | 4.57%      |
| European style upholstered furniture | 82   | 22.04%     |
| Metal furniture                 | 23       | 6.18%      |
| Combination of glass panel and solid wood | 62   | 16.67%     |
| Traditional solid wood furniture | 134     | 36.02%     |
| Others                          | 11       | 2.96%      |
In the practice of SSF modeling redesign, it was obvious that the application of different furniture legs. Furniture legs not only play a supporting role, but also have very meaningful decoration and cultural connotation. According to statistics, it was mainly divided into horseshoe leg (Figure 7), three-bent leg (Figure 8), lantern leg, oval leg and square leg, accounting for 10%–25% (Table 6). However, in all the design schemes, the volunteer students did not really use the traditional leg shape in the true sense. They all made subtle changes to cater for the modern design trend, such as the simple and thin leg SSF. The fashion of modern slim leg furniture can be regarded as the product of simple style. Slim leg furniture attaches great importance to user experience in design, and strives to make up for the defects in design. For example, in order to reduce the decorative burden, each surface was designed into a smoother arc surface and a smoother plane. This kind of slim leg design was flexible, did not occupy space, and was convenient to move, making the space light. It conveyed the meaning of simplicity and delicacy, and outlines the beauty of space.

Table 5. Distribution of Chinese and European modeling structures in 372 SSFs.

| Modeling structure               | Quantity | Proportion |
|---------------------------------|----------|------------|
| Frame structure                 | 286      | 76.88%     |
| The combination of square and round | 175      | 47.04%     |
| Advocating "Chinese style"      | 213      | 57.26%     |
| Segmented                       | 182      | 48.92%     |
| European style column           | 127      | 34.14%     |
| Symmetrical structure           | 326      | 87.63%     |
| Spires and arches               | 83       | 22.31%     |

(34.14%), which shows the respect for "personality" in European traditional culture (Table 5).

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6. The summary of SSF design

After the design practice of SSF, these students had summarized their SSF design from the idea of design, the method of design, the expression of design.

In the idea of SSF design, these students all agreed that the redesigned forms and elements of SSF must base on today's users, and designer should coordinate the relationship between the redesigned SSF and today's user needs that be from residing style, working style, entertainment mode, and thinking way. They all thought that the differences between SSF and today's user needs could be resolved by simplifying the elements of SSF, reforming the forms of SSF, and focusing on the function design of SSF for today's user needs.

In the method of SSF design, these students all found that the SSF design was an iterative process and a progressive model. The design criticism of SSF was the power of iterative design, and it was a design criticism of industrial product that mainly deriving from the formal beauty rules of industrial design, the industrial production, the market supply and demand. This progressive model mainly included that collecting and extracting the classical elements and forms from Chinese and European classical furniture according to design tasks, simplifying the classical elements and reforming the classical forms basing on the formal beauty rules of industrial design and today's user needs, iterative optimizing the SSF design results according to the design criticism of SSF.

In the expression of SSF design, these students all expressed their designs in the expressed form of sketch that be composed of line drawing and light color. The expressed form of sketch has the characteristics of quick and flexible expression, which can help getting the design inspiration of SSF and expressing the decorative detail design of SSF at initial stage of design. The expressed form of sketch also had the characteristics of indeterminate and general expression, which can help expanding and optimizing the design idea of SSF at the initial stage.
7. Results and discussion

The SSF was the furniture style that paying most attention to female aesthetic taste in the history of Chinese furniture, and there were 98 of 132 volunteers were girls in this course, which shows that women are likely to become the main designers and consumers of SSF in future. Therefore, in the furniture design course of Chinese art design speciality should the teaching content of SSF design think more today’s female needs, such as female aesthetic taste, behavior, living condition, purchasing power, and so on. In the teaching content of design practice, we

Figure 7. Horseshoe leg.

Figure 8. Three-bent leg.
should also guide students to carry out the design practice of SSF according to the needs of various female users (Figure 9).

These students had mostly found that the functional design of SSF was from lifestyle changes that been mainly influenced by European modern lifestyles, the form design of SSF was mainly from multicultural integration in Chinese and European cultures, the engineering design of SSF was mainly from the machinery manufacture technology and the modern materials science that helped SSF to meet the needs of product quantity for the huge popular market. Their findings were all consistent with our previous research on the design experiences of SSF, and all reflected the characteristics of SSF design that keeping pace with the times development (Figure 10), as Table 7 shown. Therefore, the teaching content of SSF design should think more times factors, such as today's lifestyles,

| Furniture leg                  | Quantity | Proportion |
|--------------------------------|----------|------------|
| Horseshoe leg                  | 69       | 18.55%     |
| Three-bent leg                 | 84       | 22.58%     |
| Lantern leg                    | 63       | 16.94%     |
| Elliptical leg                 | 40       | 10.75%     |
| Square Leg                     | 36       | 9.68%      |
| Round outside and square inside| 18       | 4.84%      |
| Plank leg                      | 24       | 6.45%      |
| Square Leg                     | 38       | 10.22%     |

Figure 9. Design with female factor in design practice.

Figure 10. Simple and modern.
cultural characteristics, advanced science and technology, and so on. In the design practice of SSF, we should also ask students to carry out the design practice basing on the times development.

In this teaching practice, there were 98 of 132 volunteers were girls, 132 students all reported the integration in Chinese and European cultures, the 75 of 140 designs had based on that the simplified and reformed European classical decorative element, 57.26% furniture modeling styles were simple and modern furniture modeling, 72.87% students designed SSF application scenarios were the living room and bedroom, 102 students had all gave an example of the rotary-cutting wooden component, and 76.88% structure designs was the Chinese style frame structure and combination. Therefore, in the future inheriting SSF design and developing SSF design teaching, women are likely to become the main designers and consumers of SSF, we will more focus the integration of Chinese and European cultures in SSF, the simplified and reformed European classical element in SSF, the SSF of living room and bedroom, the application of rotary-cutting wooden component in SSF, and the application of Chinese style frame structure and combination in SSF.

In SSF design, these students mostly focused on that the classical elements and forms of Chinese and European traditional furniture been equably integrated into a designed furniture, and the simplified and reformed Chinese classical decorative elements been integrated into the furniture of geometrical form whose deign from European Modernism. Their designs all were the redesign of SSF, and all focused on the redesign of Chinese and European classical elements whose reuse in new furniture forms. Therefore, the teaching content of SSF design should include more the methods about the redesign and reuse of Chinese and European classical elements. In the design practice of SSF, we should also guide students to carry out the redesign of Chinese and European classical elements and the reuse of redesigned Chinese and European classical elements in new furniture forms.

In the summary of these students, they all thought that the redesign of SSF must base on today’s user needs, the SSF design should be an iterative process and a progressive model, the SSF design should be expressed by the expressed form of sketch at initial stage of design. Their design starting point and design action track all reflect that they interpreted the relationship between Chinese and European art styles, traditional and modern cultures by the thinking and method of modern system design. Although the teaching content of SSF involves many traditional cultures, SSF design should be completed through the thinking and method of modern system design. Therefore, we should focus on the teaching content of modern system design for the SSF design, and should guide students to carry out the design practice of SSF basing on the modern system design.

8. Conclusion

SSF as the classic case of Chinese furniture culture, we have researched on the teaching content of SSF design for the furniture design course in Chinese art design speciality, and had carried out the teaching practice of SSF design in some students. In this teaching practice, 132 students had took part in studying on the design experiences of SSF, the design practice of SSF, and the summary of SSF design. In this process, we can fully understand the students’ understanding and preference for SSF. In the view of most students, SSF is a furniture style integrating European furniture, traditional Chinese furniture and local folk furniture formed under the background of the blending and collision of Chinese and European cultures at the end of the 19th century. Moreover, SSF solves the cultural differences between China and Europe, and avoid the defect that Chinese traditional furniture deviates from modern life. In the process of students’ redesign of SSF, generally speaking, the SSF style was characterized by the combination of China and the European and modern simplicity. Modern elements were added to the SSF design style, and fine works were refined in the traditional Chinese modeling, so as to make SSF more in line with the trend of modern design and better carry forward the concept of design service life. After studying this course, these students had all finished own SSF design and basically mastered the design method of SSF.

This research highlights: The main designers of SSF are female designer; Female user are the main consumers of SSF; The modeling design of SSF mainly focus the integration of Chinese and European cultures; The functional design of SSF mainly focus the functions of living room and bedroom; The engineering design of SSF mainly focus the reformed wooden component of the application of Chinese style frame structure.

For inheriting SSF design and developing SSF design teaching in future, we should guide more students how to carry out the SSF design according to the user needs, especially the needs of female users, the times development, and the modern system design. We should also guide more students how to carry out the redesign of Chinese and European classical elements, and the reuse of redesigned Chinese and European classical elements in new furniture forms. Excavating the practical value of SSF culture and designing new SSF, which are not to copy traditional art style, but the recreation and redesign basing on modern cultures.

Our this research data was from some students aged 20–24, we will collect research data from some designers aged 25–35 in future research for inheriting SSF design and developing SSF design teaching.

Declarations

Author contribution statement

Weihua Zou: Conceived and designed the experiments; Performed the experiments; Analyzed and interpreted the data; Contributed reagents, materials, analysis tools or data; Wrote the paper.

Delin Sun: Conceived and designed the experiments; Performed the experiments.

Zimu Li: Analyzed and interpreted the data; Contributed reagents, materials, analysis tools or data; Wrote the paper.

Funding statement

This work was supported by Education Science Planning Project of Hunan Province, China (grant number XJK18AGD007), Social Science Achievement Evaluation Committee Project of Hunan Province, China (grant number XSP20YBZ099), Philosophy and Social Science Foundation of Hunan Province, China (grant number 18YBA457).

Data availability statement

Data included in article/supplementary material/referenced in article.

Declaration of interests statement

The authors declare no conflict of interest.

Additional information

No additional information is available for this paper.
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