

Research on the Application and Ability Training of Compulsory Association Method in Art Design

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Abstract—Association method is one common thinking method in creative thinking while compulsory association method serves as an evidently timely and targeted thinking method widely applied in association method. This paper is mainly divided into the form of thinking, practical application and ability training of compulsory thinking so as to systematically summarize and conclude compulsory thinking from theory to practice and teaching method to thinking ability training thus to enrich creative thinking theories and ability training methods.

Keywords—compulsory association method; creative thinking; art design; applicability; ability training

I. INTRODUCTION

Compulsory association method, one of the most important thinking methods in art design, can stimulate creative inspiration, broaden design thought, optimize design scheme and strengthen design consciousness in design practice. This paper details its features, operation procedures, thinking development and training method and systematically elaborate specific application of compulsory association method in art design field so as to establish its application in art design field and thinking development framework.

II. OVERVIEW OF COMPULSORY ASSOCIATION METHOD

A. Concept of Compulsory Association Method

Compulsory association method, brought up by Hvard, an American scholar, is firstly applied to industry design field. Through association thinking method and compulsory means, it can stimulate people's imagination and association strength to force them to associate irrelevant or unexpected objects so as to produce great leap in thinking and creative assumptions. Its thinking operation theory is to select focal object to be improved, list irrelevant objects from many aspects, then forcibly list different properties of such objects and match with focal object and choose the optimum scheme. Such method is called focus method where such "focus" refers to target point, excitement point or objects to be improved that is interested by inventors.

B. Features of Compulsory Association Method

With compulsory features and specific purpose, the compulsory association method breaks through people's

inhabited thinking modes during association process and liberate thinking and creativity. For example, the invention of sofa combined chairs with softness of bread; Sullivan, an American architect, with the integration of wings of flying bird as the association factor with building design, designed New York Kennedy Airport which is an organic modern classic building fully streamlined "Fig. 1".

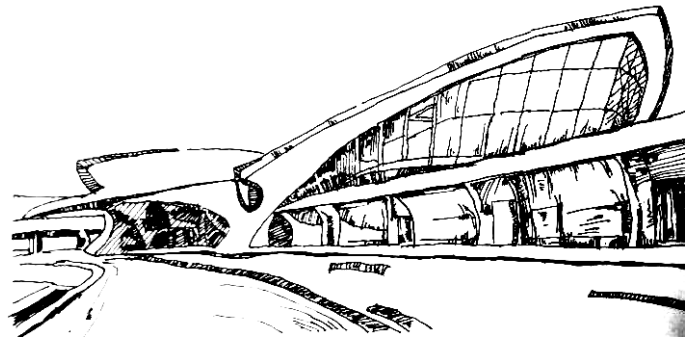


Fig. 1. Association of Kennedy Airport (author's sketching).

Innovation is difficult for assumptions may easily pose various advice and defects and lack creativity, and thinking may be narrowed in that innovation is hard to continue due to obstructed thinking. However, the compulsory association method may validly solve such two difficulties during innovation process by listing a series of seemingly irrelevant or even far different objects focused on the focal object and forcibly associate them with the focal object to exploit innovation thought and achieve a great leap in thinking. Such association method forcibly combining irrelevant objects together seems to be a little incredible but enables people to regard objects from brand new aspects thus help to discover creative opinion and create unexpected association.

C. Innovation Process of Compulsory Association Method

General steps to innovate through compulsory association method:

- Determine focal object and reference objects.
- Comprehensively list properties, features and improvement of focal objects and enumerate reference

objects from numerous aspects and irrelevant to focal objects.

- Combine all the features of reference objects with those of focal objects, collect and analyze such complete combinations. In case that the focal object has X (number) features while reference objects has Y (number) features, then $X \times Y$ (number) creativity assumptions.
- Reasonably analyze and select combinations with practical value and determine design breakthrough points and directions. Though most of innovation assumptions made through features crossing combinations are novel, they may not be practical. Therefore, we shall carefully analyze, identify and select all innovation assumptions in combination with real production conditions and market demands, then through feasibility study select truly feasible assumptions as final innovation design theme.
- Innovation design shall be made in terms of innovation design theme. When innovation design is made through compulsory association method, regardless of focal objects, we shall list all objects in certain system "aimlessly" and pair them to make innovation assumptions. This can always produce unexpected effects when making inventions and innovations without explicit aims.

III. APPLICATION OF COMPULSORY ASSOCIATION METHOD

A. Application of Compulsory Association Method in Architecture Design

During architecture design, architects are able to explain and express their personal design concepts in different modes from special aspects through compulsory association method thus to form brand new architecture modeling language. Properties of different stimulants possessed of certain relevance serve as the prerequisite for association. Such relevance is mutual where B can be associated from A and vice versa.

Architects may sometimes be inspired by certain object which always has certain necessary relation with the appearance of architectures that appears before audiences in combination with design concepts endowed by the architects to such architecture. It forcibly triggers association simply and directly through appearance and such architecture has distinct image features and strong expressive force. Shenyang Fangyuan Building is a controversial building, designed by Li Zuyuan, a Taiwan architect, whose shape resembles a huge ancient coin with design concept of the unity of heaven and earth thought. From ancient times, it has been a traditional concept of cosmic cognition to regard sky as being round and earth being square. Otherwise, the shape of China's ancient coins has been round outside and square inside through the feudal period, which reflects the emphasis of Chinese culture in the unity of heaven and earth. From the perspective of cognitive thinking, there is no connection between such two concepts as ancient coins and buildings, and it is the typical feature of compulsory association method to form inner or

external associations of unrelated concepts. The design of Fangyuan Building reflects the application of the compulsory association method in the architectural design, where the object of the association is the building. The ancient coin, only one kind of association, is abstracted for its rich cultural connotation and fitness with internal thought in architectural design. They are associated through compulsory thinking with explicit restriction which includes traditional Chinese cosmic cognition and human through of the concept of unity of heaven and earth. Through this compulsory and directional thinking mode of association, architectural design and ancient coins is closely related. Ancient coins as an element are applied to the architectural design, forming the design scheme of Fangyuan Building. This case enables us to clearly see the operation context and method of the compulsory association in the architectural design, and compulsory association plays a significant role in the early stage of the formation of creative design "Fig. 2".



Fig. 2. Fangyuan Building (The figure is from network).

B. Application of Compulsory Association Method in Indoor Design

Under normal conditions, when people see changes in indoor design, furnishings or volume and shape of furniture, people may feel broad, cramped, warm or lonely mentally thereupon. Indoor designers may arouse the association of audience through changes in modeling.

The application of compulsory association method is typical in indoor design with Chinese style, and there are countless cases to produce associations by changing modeling or decoration element. The ancients endowed decorations, patterns and components with certain implied meaning and cultural connotation through compulsory association by means of homophonic sound or form, which lays foundation to the realization of compulsory association in indoor design. For example, there's no evident relation between bats and peaches. The homophonic sound of "Bianfu" (bat in Chinese) is "fu" (bliss) while peaches symbolize longevity in traditional culture, so the pattern of five bats fluttering around longevity peaches is endowed with the good wish of "wufupengshou". It can be indicated that internal relations are formed between bats and peaches through compulsory association "Fig. 3". Similarly, pomegranate and gourd are both seedy, so people place

pomegranate or gourd shaped components into the door to imply fertility and household exuberant.



Fig. 3. Auspicious pattern (author's sketching).

IV. CULTIVATION OF ABILITY OF COMPULSORY ASSOCIATION THINKING

A. Divergent Thinking and Liner Thinking

The compulsory association method is a specific form of thinking of creative thinking method. In the artistic designing, using the compulsory association method for the conception and creation of schemes is the common and effective design thinking method. On the aspect of application of compulsory association thinking, it can be divided into two processes based on the different working procedures of thinking which are the divergent thinking and liner thinking.

The so-called "divergent" is the non-directional and divergent transmission mode. The divergent association thinking training method refers to taking a certain irritant as the origin to conduct unlimited, non-directional and comprehensive association training in the radial and divergent mode all around. For example, if taking the bottle as irritant origin to conduct radial association, we can obtain the completely unexpected results such as flying and earthquakes, etc. In the initial phase of compulsory association, what shall be done after determining the focal point is the radial thinking which can be the association of any material object. And the richer the contents of association are, the higher the possibility of obtaining good ideas will be. This phase is in the divergence period of thinking.

The liner associative thinking is the typical thinking feature of compulsory association. The so-called "liner" means that the direction of association is decided with clear purposes which can not only be the horizontal expansion of associative thinking, but also can be the deepening and expansion of vertical associative thinking. The liner associative thinking training method refers to taking certain irritant as starting point to conduct associative thinking training method according to special directionality and procedures, such as the association from sun to the submarine where there are no clear relevance

between them, however, the objective of association can be completely achieved by using the associative thinking in its directionality. From the middle phase of compulsory association, certain thing which possesses creation in the associative matters shall be selected to form brand new relevance between focused matter and associative matter through liner associative thinking. In the last phase of compulsory association, it is completed and enriched through the ideas formed by compulsory association. Until now, the basic process where the ideas are formed through compulsory association is over.

B. Cultivation of the Ability of Compulsory Association in Teaching

1) Principle of free thinking

The essence of this principle is to conduct free and unconstrained thinking indulging with no restriction. Encourage the students to release the thinking, spring forth from the conventional thinking or the logic limitations and restrictions, learn to view and analyze the problems from different perspectives, bravely propose thoughts and imaginations and do not set any restrictions on the thinking. This principle is to seek for the breakthrough of thinking and the sublimation of ideas. Conducting the divergent thinking and imagination with no restrictions may produce many unexpected ideas or viewpoint.

2) Principle of quantity guaranteeing quality

From the perspective of philosophy, the development of everything in the objective world is realized by the accumulation of quantitative change leading to qualitative change. This viewpoint is also applicable to the field of thinking. The quality of thoughts generated from association is proportional to the quantity of thoughts. We can find out such phenomenon from the design of practice that when conducting association to a certain matter, the quantity and speed of thoughts generated will increase and accelerate with the time passing by. The thoughts generated during this process will possess more and more practicability and innovation which is also the reflection of the relation between quantitative change and qualitative change in the field of thoughts. The formation of a successful idea usually possesses the nature of process which is a chain with continuous denying and improvement. The availability of early assumptions is generally low. While in the late phase, with the increasing and maturing of assumptions, the ratio of ideas with innovation and practicalness will be gradually increased which is the concrete embodiment of the principle where quantity guarantees quality.

C. The Application of Compulsory Association Method in Teaching Practice

The ability of compulsory association of students will be effectively trained through the form of giving propositions during teaching practice. The given propositions shall comply with the principle of "being limited with restrictions" which is the principle where those propositions shall not only possess sufficient flexibility, but also shall possess clear restrictions. The compulsory association is the combination of free association and liner association. The restriction on propositions serves the cultivation of liner association. The

objective of flexibility is to cultivate the divergent association. There is certain contradictoriness between those two kinds of thinking modes. Therefore, the principle of moderation shall be complied with during the practical training. For example, when taking the “organs and machinery” as subject to conduct the student homework of training on the compulsory association, the students will create the work of replace the internal structure of heart with machinery by viewing the two as matters with no relevance to conduct compulsory association "Fig. 4". In the homework of conducting compulsory association training by taking “the movement and stillness” as subject, the students understand the movement as butterflies and understand the stillness as leaves and integrate the two to form the work of butterfly with leaves being wings "Fig. 5". We can see from the above that the form of training in propositions can effectively break conventional thinking and cultivate the abilities of compulsory thinking and divergent thinking.

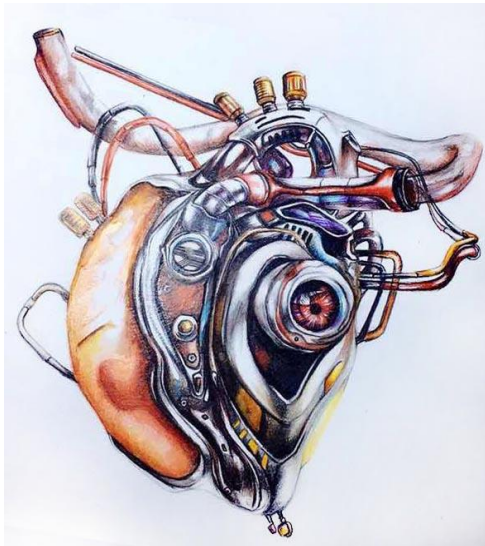


Fig. 4. Student work of “Organ and Machinery”.



Fig. 5. Student work of “Movement and Stillness”.

V. CONCLUSION

In the modern artistic design, the compulsory association method is the creative thinking method that is commonly applied in design practices. The scientific training on thinking can ensure students to master thinking methods and improve

the individual design thinking ability. In the specific design practices, we should pay attention to reasonably application of the two kinds of thinking modes of “divergent thinking” and “liner thinking” and accomplish the combination of divergent association and aggregate association. Expand the thoughts, promote the spanning of thinking, inspire the creativity and inspiration, combine with the aggregate association to deepen the design ideas and assumptions, adopt the creativity to achieve the design objectives and present the design achievements with inventiveness and peculiarity through the divergent association. Those are also the essence of compulsory association method.

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