

Cultivation of Students' Creative Thinking in Design Sketch Teaching

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Abstract—Design sketch generated gradually in the development of modern design education, which is a new way of training to meet the needs of development of design disciplines themselves. Cultivate students' quality of creative thinking in design sketch and explore different teaching modes, so as to promote the development of students' creative thinking quality in different cases.

Keywords—design sketch; students; quality; creation

I. INTRODUCTION

Design sketch is the general term of sketch trainings in basic teaching of design disciplines, which is the sketch modeling form with design concept as guidance. It is a new way of training formed to meet the development of design disciplines themselves based on the sketch theory of traditional drawing and is affected by modern design ideas and design concept.

II. IMPORTANCE OF DESIGN SKETCH IN CULTIVATING STUDENTS' DESIGN THINKING QUALITY

There is a kind of interdependent relationship between design and sketch, and they are part of the design process. As a basic skill, design sketch is part of the professional basic course. In this process, students' creative and thinking consciousness will be cultivated and developed with emphasis. Design thinking is manifested in the form of sketch and exists in this category. Design is originated from thinking ideas and is born in the creation result. Similarly, the design sketch is one of the expression forms and methods to record this concept. Design sketch is one link in the whole process, which has recorded people's primary thinking principle and the process of graphics' development, penetration, perfection and maturity.

III. COMPREHENSIVE QUALITY TO BE EQUIPPED BY MODERN DESIGNERS

In essence, art design stresses innovation, and art design is always in pursuit of innovation and surpassing. All the factors suitable for development are inseparable from the development of creative thinking. In the field of the modern art design, scientific and rational use of creative thinking can greatly broaden the designers' development ideas, so as to create a novel and unprecedented thinking achievement with social value. At the same time, the creative thinking is also the basic

quality that must be equipped by excellent design workers, and the fundamental guarantee for all design and creation.

Design is an intersecting marginal discipline, but it is not the sum by simply adding science and art, but the organic integration of technology science, humanities and social sciences. In this sense, the designer should not only have the knowledge of a wide range of disciplines, but also shall the wide creative ability to integrate various knowledge and factors. The author has made a simple summary of the basic knowledge and skills to be possessed by designers:

A. *The High Comprehensive Quality*

This requires the designers to have the perception of various art forms, and the melody of music, the color of painting, and the background of literature shall be displayed in the design.

B. *The Sensitivity of Aesthetic And Judgment*

It makes the designers actively grasp fashion and not be controlled by it.

C. *Team Spirit*

The large scale design cannot be done by a person alone, all aspects of professional cooperation is needed. In other words, design is a creative labor by collective collaboration.

D. *The Ability to Research and Use Material*

We will be touched by the emergence of every new kind of material, and what we need do is to arrange and deal with them, to make them achieve harmony and unity.

E. *Practical Operation Skills and Knowledge*

Design also requires the designers to have strong operation ability in addition to the high thinking ability. The practical operation skills training can not only develop the designers' viewpoint of "practice first", at the same time, can improve the designers' modeling skills, manual dexterity and three-dimensional performance ability.

F. *Comprehensive Design Ability and Technology*

Take industrial design as an example, the core problem is to create the product structure and appearance quality that meet

its function and aesthetic. But it has the direct relationship with many aspects, such as the product color, utilization degree, price and so on all have different influences on consumer's mind. To use the design principle and various conditions in a creative and comprehensive way is the true meaning of design.

G. Expression and Communication Ability

This refers to such ability in terms of profession, namely the sketch expression ability and strong language organizational ability, to make peers and owner identity his/her design more comprehensively, thus to his/her own goal.

Modern design is closely related to people's lives, and the demand of modern design by people is to make a better and more beautiful life. Modern design is a comprehensive discipline integrating science, technology, art and economy, producing material culture and spiritual culture. Innovation is the essence of art design with the purpose of "serve for human" to create the reasonable human life and living style. The products designed shall not only conform to human material and spiritual needs, but also shall achieve the best effect of harmony among human - machine - environment system, which can meet the needs of human life and improve the living environment of human beings.

IV. EFFECTIVE WAYS FOR CULTIVATION OF STUDENTS' CREATIVE THINKING IN DESIGN SKETCH

As a basic course for design, the design concept-oriented thought shall run through the sketch teaching for design specialty, and combine with the pace of profession and the times, to conduct reform and bold innovation, make clear the professional characteristics of design sketch training, pay attention to cultivate the students' thinking in images, and to explore based on the scientific and serious attitude, thus to renew students' concept and improve their image thinking ability through the study of design sketch, and strengthen the training of modeling thinking ability, to fully explore their individual potential, because students' individual potential decides the future designer's knowledge structure and the creative thinking development, and determines whether or not they will become the design talents with high quality and innovation.

The value of art design lie in unique individual character, and different people have different way of understanding. If we ignore the differences between students and teach them with a fixed curriculum pattern, then students are unable to develop into the creative individuals in a free, diverse and sustainable way. Respect individuality development, guide self-exploration and help the students learn how to learn is the essence of structural curriculum theory and the developmental curriculum theory. Then, how do we further improve the cultivation of student's creative thinking in design sketch teaching, use the creative thinking theory to guide teaching practice of design sketch, and to speed up the connection of design sketch and design professional courses? First of all, we shall enhance our understanding, including the understanding of creative thinking method in design sketch, the understanding of factors that influence creative thinking in design sketch, and then find the ways and methods to solve the

problem through further exploration and practice. Only in this way can we truly cultivate students' creative thinking effectively through the design sketch teaching.

The creative thinking quality in design sketch refers to the thinking activity and process that the designer thinks and deals with problems from new point of view and uses new way of thinking, thus to generate the unique and novel visual form. Generally, the creative thinking quality in design sketch has the following several characteristics:

1) *Originality*: Creative thinking emphasizes the thinker must be good at thinking about problems using his/her own unique way with free mind by breaking the rules, capable of raising the distinctive views and creating something new and original.

2) *Difference*: Creative thinking pays attention to the individuality and particularity of the objective object, and emphasizes the differences between phenomenon and essence, and between form and content. The difference in creative thinking in design sketch mainly reflects in two aspects: first is the difference in terms of theme refining, and the second is the difference in terms of expression angle and expression method.

3) *Association*: It refers to that we may think of another thing through one thing. Association can be carried out in such aspects as reason and result of the thing, comparison among the things and their similarity or proximity.

4) *Reverse*: It refers to handle problems according to thinking way other than the accustomed ones but from the opposite of things, and find solution to solve the problem from the opposite direction.

5) *Burstiness*: It refers to the thinking way will not come in time as expected, but emerge with an accidental factor. Therefore, it has the feature of burstiness.

6) *Diversity*: Diversity refers to the thinking shall not be restricted by single fixed concept, but take a certain point as the center, to analyze the problems from all aspects, thus create a variety of solutions.

7) *Integrity*: It refers to integrate all sides and parts of the thing into a unity according to the internal, intrinsic and inevitable association of the things.

Through the above characteristics, it is easy to see that art design thinking is creative thinking and is a form of thinking breaking the routine with innovation. The meaning of creation lies in thinking out new methods, establishing new theory, and making new achievements. The conceiving process of design is a kind of creative thinking process, and the creative and innovative achievements come from the designer's active and quick creative thinking. Therefore, creative thinking is the core of design thinking. Designers' understanding of the characteristics and rule of design thinking will be more conducive to inspire the creation potential using thinking rule, and discover, summarize, analyze and solve the problems from surface to the center by making connections. This is the essence of design process and the soul of design creation. And the designers without creativity have no vitality.

V. FACTORS FOR CULTIVATION OF STUDENTS' CREATIVE THINKING QUALITY IN DESIGN SKETCH

As for the factors for cultivation of students' creative thinking quality in design sketch, we shall pay attention to the following aspects:

A. Design Thinking

Design is a perpetual topic. Design has always played a role of promoting human progress from human's first piece of stone to the computer now. Throughout human design history, design consciousness and form develop continuously, and numerous works show that there are no two pieces of works are absolutely the same in the world. However, in the process of creation, different designers can seek "inspiration" for creation mutually in their works. But in the process of "reference", designer shall establish a set of their own design ideas, combine with the "expectation" of audiences, infuse their innovation thinking and emotion into the design scheme, to make the emotion reflection and the actual reason of design reach the optimal effect, so as to achieve perfection of design. Therefore, as for design talent cultivation, the diversified thinking training as advocated by design sketch teaching of art design specialty is absolutely the accurate development direction, which is beneficial to the design disciplines. Thinking is the lifeline and sources a good design, as the excellent designers "keeping pace with the times", the key for us is how to maintain a sensible, intelligent, keen and flexible, bold and imaginative mind.

B. Formation Practice

As is known to all, the three components are the foundation of any design. What need the design sketch teaching do is to make students learning the three components primarily, namely Three Dimensional Composition, plane formation and color formation. At the same time, the diversity and continuity of design sketch teaching have also laid a good foundation for the design teaching in the future. In the formation practice, we enable students experience and explore the meaning of formation through a lot of experiments and practices. Here we emphasize that, like other subjects other than art, design sketch requires a great deal of experiments and practices. The experience obtained from numerous experiments and practices by the students will benefit them a lot, which will be very helpful for the design teaching in the future.

C. Strengthen Artistic Edification, Improve Aesthetic Accomplishment and Appreciate the Masters' Works

Good masters' works are worthy of our reference in terms of content, expression form, theme selection, creative way, and expression of aesthetic taste and artistic personality. Appreciation, copying and reference of this works will be conducive to improve aesthetic accomplishment, enhance the understanding depth, develop performance space, and is more advantageous to the play of creative personality. Through appreciation of the works of masters of different styles and schools, students will accept the edification of expression personality subtly, and gradually realize that painting is to express their own unique inner feelings with their unique

personal language according to their own unique inner experience.

D. Design Sketch Practice

With the development of the times, computer has been used widely. But hand drawing is still a very important link in our teaching. The hand drawing effect picture is far more convincing than the computerized effect picture, so design sketch teaching should pay attention to training of design sketch, and divide it into three practices with different nature of the conception, design and data. This will undoubtedly beneficial to students' design intent expression and to cultivate a good design habit.

E. Feel the Material

A very important link in design sketch teaching is to improve students' feeling and application ability of materials. We ask the students to find all kinds of material as much as possible to enrich their expressive language. In this process, the students understand a very simple truth, namely materials are diverse and unpredictable. This can greatly improve students' practical ability and develop a correct design thinking habit.

F. Team Cooperation

In modern design, a large scale project is often not completed by one or two people; often it requires more than four or five people. At this moment, cooperation between people became the most important pillar of the whole team. So in the teaching process, we divide the students in groups of four or five to conduct special team cooperation training, enabling them complete the learning of this stage in exchange and communication. Students will gradually understand the importance of collaboration and communication through the beginning and ending of the works, which will be a great help for them to enter into the society in the future. In addition, students from different regions have different regional culture, so it is easy to produce sparks in their mutual communication in the process of collaboration, which can greatly enhance the student's feeling of success and confidence, thus to improve their learning enthusiasm and initiative.

VI. CONCLUSION

To sum up, design sketch is no longer the external expression of the objective images in the forms of reappearance and the passionate pursuit of affection factors, but focus on the rational summary, analysis and different thinking ability. Through the modeling activity of sketch art, the author's professional design knowledge and professional skills can be increased and enhanced. The expression process of design sketch is a creative process, and also a process to reexamine the thinking, a process to constantly pursue perfection, and a process to cultivate creative thinking.

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