Research and Practice of Multi-Dimensional Interactive Teaching Mode of Design Color

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Abstract—In the teaching of design color, the application of multi-dimensional interactive teaching mode can improve the teaching quality and contribute to the talent training of design color related majors. Firstly, this paper briefly expounds the basic elements and connotation of the multi-dimensional interactive teaching mode. Then, it explains the significance of multi-dimensional interactive teaching mode of design color. Finally, in combination of the authors teaching experience, it analyzes the application methods and concrete practice of multi-dimensional interactive teaching mode of design color, in hope to play a reference role in the field.

Keywords: design color, multi-dimensional interaction, teaching mode

I. INTRODUCTION

Design color has important application value in multimedia art, visual communication design, environmental art design and other majors. In traditional classroom, the teaching of design color lack interactivity, or has single interactive form, thus failing to give full play to students' initiative and creativity in learning to a certain extent. However, the application of multi-dimensional interactive teaching mode can solve this problem, make teaching and learning fully interact, change the traditional teaching concept and education mode, and make design color classroom teaching more interesting and vivid.

II. MULTI-DIMENSIONAL INTERACTIVE TEACHING MODE

A. The basic elements of multi-dimensional interactive teaching mode

In the multi-dimensional interactive teaching model, the teaching subject, environment, process and results of the education system are interrelated and independent of each other, which are also the four basic elements of the multi-dimensional interactive teaching mode (see "Table I").

TABLE I. THE BASIC ELEMENTS OF MULTI-DIMENSIONAL INTERACTIVE TEACHING MODE

Basic elements	Concrete content	Influence
Teaching subject	Teacher and student	Teachers' professional ethics, teaching methods, cognitive level and teaching strategies will all affect the application effect of this model, while students' learning interest, personality and learning methods will also affect the application effect of this model
Teaching environment	Related education policies of schools and the society, teaching conditions in schools, etc.	Good teaching environment can support experimental teaching, group teaching activities
Teaching process	Syllabus and curriculum	Rational syllabus and curriculum can guide teachers to carry out interactive teaching and enable students to master professional skills and knowledge theory of the subject
Teaching result	Learning quality	The use of this mode can make a difference in students' ability, knowledge level and moral character

B. The connotation and essence of multi-dimensional interactive teaching mode

The multi-dimensional interactive teaching mode means that in an open education system, teachers, students, teaching facilities, teaching methods, cultural scope and other teaching-related resources and elements can influence each other in nature and form through the optimization and deepening of teaching interaction. The implementation of multi-dimensional interactive teaching mode can make full use of teaching elements and form an organic whole for each element in teaching, so as to realize the goal of value maximization and ensure teaching benefit and teaching quality. In this paper, the multi-dimensional interactive teaching mode in design color is mainly applied to design color teaching through the interaction between textbooks, teachers and students, the main relationship of which is shown in "Fig. 1".
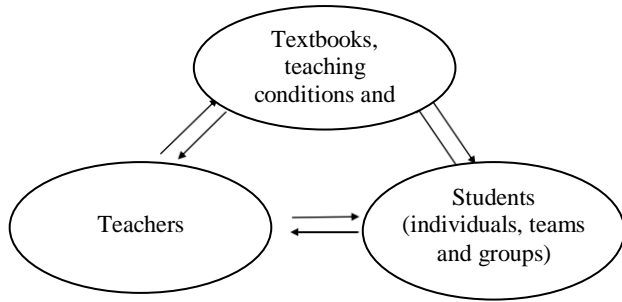
Fig. 1. Relations between subjects of multi-dimensional interactive teaching.

As can be seen from "Fig. 1", teacher-student interaction can be realized directly. On this basis, teachers should conduct interactive communication with teams and groups in combination with teaching materials. This multi-dimensional interactive teaching mode is a kind of explicit activity, that is, to improve the quality of teaching through group discussion, question raising, questions and answers, experiments, games and other explicit interactive behavior.

III. THE APPLICATION SIGNIFICANCE OF MULTI-DIMENSIONAL INTERACTIVE TEACHING MODE OF DESIGN COLOR

In the course of design color teaching, the resources of the subject are various, which may be a method or some concepts. The completion methods of projects are diverse. The same subject can be accomplished by text, sketch, observation, color, photography and other methods. The application of multi-dimensional interactive teaching mode, which demands experiments and group cooperation in teaching, can make full use of various subject resources, build a good interactive relationship between students and teachers and between students, and thus improve the quality of classroom teaching of design color. For students, the application significance of multi-dimensional interactive teaching mode is mainly reflected in three aspects.

1) Promoting the all-round development of students: Traditional design color teaching often carries out classroom teaching around textbooks and syllabus. With single information transfer, it might depress the study enthusiasm of student. The lack of emphasis on students' personal experience, learning process and life experience is contrary to the concept of the new curriculum reform, which is not conducive to the overall development of students. However, the multi-dimensional interactive teaching mode requires teachers to pay attention to students' emotional goals, knowledge goals and skill goals, and to establish a student-centered mind, which can promote students' all-round development in teaching activities [2].

2) Stimulating students' interest: The design color contains many contents including the color, design and so on, and the design forms include many types. In the process of learning, students need to have enough imagination and be guided to appreciate others' works and draw experience

by use of multi-dimensional interactive teaching mode. This can improve students' learning enthusiasm, train their subject consciousness in learning, and allow them to apply learning experience to independent learning and innovation in experiments, so as to improve their creativity and independent thinking ability.

3) Realizing initiative development of student: After putting forward creation questions, teachers should understand students' learning style, psychological characteristics and unique personality, respect and protect every creative inspiration of them. Some students like to think on their own, while others get inspired through interactive discussions. Teachers should encourage, arouse and protect students' imagination, let them explore independently and create confidently, tap students' potential creativity, so as to help them generate the desire to create and achieve the results of creation.

IV. SPECIFIC APPLICATION OF THE MULTI-DIMENSIONAL INTERACTIVE TEACHING MODE FOR DESIGN COLOR

A. Application methods

1) Using multiple interactive resources: In the teaching of design color, teachers need to fully integrate the teaching resources inside and outside the class, and rationally apply such interactive resources in specific teaching activities. The integrated interactive resources should be hot events under news coverage that are familiar to students and commonly seen in life, so as to guide students to observe carefully and participate actively under interest orientation in combination with modern new media technology.

2) Strengthening the emotional interaction between teachers and students: In the design color teaching, teachers need to increase emotional investment, build equal and democratic teacher-student relationship, create a good classroom atmosphere, and engage in emotional communication and interaction with students in the method of question and answer. In this process, teachers need to make question-and-answer exchanges full of philosophy, with accurate and clear language expression and sincere feelings, in order to establish a good image in the hearts of students, attract students into the classroom learning, to achieve teacher-student interaction.

3) Retrieving data effectively: Students should be encouraged to develop the good habit of retrieving information. By searching for information and processing, sorting, and organizing it in a certain way, they can enrich their creative knowledge. The training and cultivation of this habit can effectively help students establish a good self-confidence in the classroom and increase the quality and effect of interaction between teachers and students.

4) Designing a rich series of teaching scenarios: When applying the multi-dimensional interactive teaching model, teachers need to design rich teaching situations, propose common cognitive things outside students' learning and life,

and arrange relevant cases in combination with their own subjective cognition, to complete the design of proposition color. For example, in class, the teacher can require students to draw the same object image in 8 periods, with 3h as one node, so that students' self-imagination can be exercised and their divergent thinking cultivated. Then the teacher can make students show each other their results, which can exercise their interactive communication ability and aesthetic ability of design color.

5) Experimental exploration and group discussion go hand in hand: In multi-dimensional interactive teaching, teachers need to guide students to actively carry out experimental teaching activities, and to understand the basic knowledge of design color in experimental exploration and train their ability to solve problems with design color knowledge, so as to train their basic skills. At the same time, teachers need to guide students to carry out group discussions in the process of experimental exploration. They need to recognize students' dominant role in learning, and guide students to actively carry out interactive cooperative learning and group cooperative learning activities. In this process, the interactive learning and cooperation inside groups, between groups and between teacher and students should be achieved. Teachers need to guide the groups to evaluate each other on the experimental results of design color learning, and discuss the problems together, so as to expand and extend the classroom content.

B. *Specific practice*

The author once organized art design students to conduct indoor still life drawing under simulated lights to carry out the teaching. In the process, students were in different positions. In the initial stage when the objects were illuminated by a single light, the author found that some students with relatively good basic skills could easily finish sketching, because such students had received training in this aspect in the course of designing colors. But later when the author made a variety of light hit the object from multiple angles, and the visual effect of the object was greatly affected, the combination of multiple lights resulted in colors that do not match the color scheme, but many students ignored the contrast of the picture in the process of sketching since they were generally used to copying light and shadow. Based on the students' sketching results, the author organized groups to carry out interactive communication and evaluation to discuss the difficulties and problems in sketching and then summarized the comparative problems of students' ignoring pictures. In the following sketching classes, the author found that there were significant improvements in students' sketching [3].

After the still life drawing with simulated lighting in the room, students have a new understanding of the influence of light on color and the influence of color on people's mood. After that, the author has put forward many questions related to multimedia art design, taking the following one as an example, "Since some colors may cause a bad effect on people's mood in the product packaging design process, is it advisable not to use such colors at all?". Students held a group discussion on the problem. Some students think such colors can be avoided, while others think the effect of this color can be changed through dimming. According to the students' discussion results, the author made a summary, that is, the influence of any color on people is not fixed. In the process of packaging design, web design, environmental design, the use of color area, a variety of factors need to be concerned, including psychological space. The emotion related to color is not fixed. For example purple in the hearts of students often represent romance, but it also represents melancholy. A lot of purple used in art design will make people feel depressed. Therefore, in design activities, designers need to consider the relationship between design and human psychology and the use of the main body of the product. For example, as for the elderly, quiet, simple but elegant color should be chosen; for the baby, the use of excessive bright, conspicuous color should be avoided as far as possible; and for the modern young people, a variety of elements in modern style can be incorporated into the design. After putting forward the questions, the students first completed the independent exploration in the experiment through combining the theoretical knowledge they previous learned. Then in the group discussion, they conducted interactive communication. And the teachers and students interaction was conducted through the link of Q&A between teachers and students. This multi-dimensional interactive teaching mode fully integrated the teaching environment, teaching subject, teaching process and teaching results, enabled students to re-recognize the design color, and made students more determined to become a designer.

When using multi-dimensional interactive teaching mode to design color teaching, a teacher and designer, needs to clarify his or her position, and let students understand the important role of designers. There are many kinds of majors related to design color, such as visual communication, multimedia design, environmental art design, and so on, each of them has its uniqueness. In the teaching process, it is necessary to design diversified experimental activities, group learning activities and question-and-answer activities that are close to students' major and life under the central people-oriented idea, so as to encourage students to complete their own works and exercise their divergent thinking and interactive communication skills.

V. Conclusion

To sum up, when designing the multi-dimensional interactive teaching model for color teaching, it is necessary to do a good job in making a good use of various interactive resources, strengthening the emotional interaction between teachers and students, designing rich teaching scenarios, experiment exploration and group discussion. In the concrete practice, the author finds that the application of multi-dimensional interactive teaching mode to design color teaching can promote the overall development of students, improve students' interest in learning and let them make as

good creations as they can, so as to make contribution to the training of design professionals in China.

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