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Teaching Research and Reform Strategy Based on Design Performance Techniques

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Abstract

Taking the teaching mode and theoretical content of the design performance technique course as the research object, the author discusses the problems in the course and establishes the reform goal of the design performance course. Through the analysis of the teaching mode of the design performance technique from the aspects of curriculum teaching mode, student theoretical foundation and teacher strength, this paper proposes an era-oriented teaching reform strategy for the status quo and reform goals of the design performance curriculum. From the teaching theory, teaching practice, and the teaching staff, the curriculum reform of the design performance technique is carried out, and then the basic and practical aspects of the design performance technique course are improved, and its role as a tool discipline is exerted.

Keywords: Design, Teaching, Course, Reform, andStrategy

Preface

The discipline of industrial design has a history of more than 100 years, and it has been developed in China for more than 30 years. In almost a century's development, in order to effectively capture and express inspiration in the design work, industrial designers tried to record the program with a simple pen and paper in the early stage of design, and gradually developed the design performance technique forms of art.

At present, all colleges and universities have been optimizing optimized the industrial accounting curriculum system in line with the concept of "taking industrial design as the guide and product innovation as the driving force". The School of Design Art of our school is also advancing with the times. In order to form a reasonable and efficient training mechanism, the industrial design course chain is combed into: design performance group, design theory group, design engineering group, information analysis group, professional design course group. The five major curriculum groups form a chain of links that are connected and supported by each other to enhance the cultivation of professional core competence (e.g., "Fig. 1").

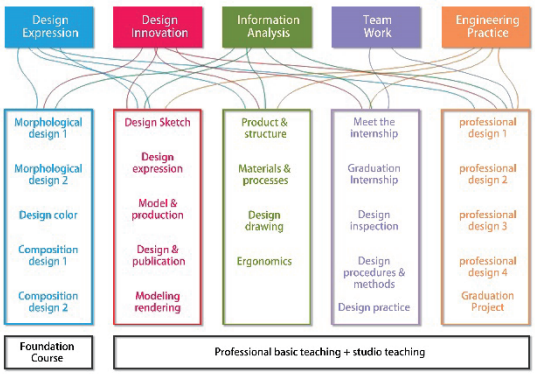

Fig. 1 The five major curriculum groups.

After many discussions, the department has defined the training objectives and service orientation, and combed the training courses with five core competencies: design expression ability, design innovation ability, information analysis ability, team cooperation ability and engineering practice ability. Among the five abilities, designing expressive ability is requisite and the most important basic ability for industrial designers. In the course design of industrial design of the School of Design Art, the design expression ability is mainly based on the design of the performance technique course to learn the basic knowledge and techniques, and is extended to the practical application of various professional design courses and practical courses (e.g., "Fig. 2").

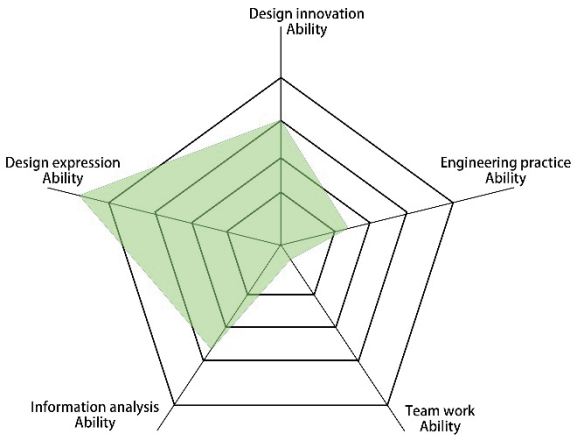

Fig. 2 The five core competencies.

Design performance techniques are one of the compulsory professional foundation courses and tools courses for industrial design and product design. In the design process, design inspiration is embodied in a conceptual or conceptual form that is vague, abstract, unspecific, and incomplete. Designers need to represent their unabiding inspiration in their minds through two-dimensional or three-dimensional concrete carriers. This process of changing from abstraction to reality and from concept to reality is achieved by design performance techniques. Design performance techniques are not a single ability, but a combination of multiple capabilities. Design performance techniques require industrial designers to have good styling and spatial imagination, and these two capabilities require good theoretical training and practical training.

Evolution of design performance techniques

Before entering the computer era, design performance techniques were the only way to draw a design representation. Designers used hand-drawn design representations to showcase the final solution to their customers. At the time, the design performance map existed as a design result, and the purpose was to submit the results and solutions to the customer. Therefore, the design performance diagram at that time focused on authenticity and integrity, and its timeliness was a secondary factor. In the era of the computer, the final design performance map is no longer freehand drawing. Instead, the software is used for 2D or 3D rendering. At this time, the purpose of the expression of the design representation has undergone a qualitative change, and its purpose has become the inspiration and solution for communicating and discussing related designs. That is, the design performance map has become an exchange carrier, no longer emphasizing integrity, but requiring timeliness, practicality and derivativeness.

The problems in the design performance technique course

Major universities in China are actively engaged in industrial design education and basic courses such as design performance techniques. However, there are various problems in the process of carrying out the existing design performance techniques courses. Based on relevant theories and teaching practice, the following four aspects are summarized(e.g., "Fig. 3"):

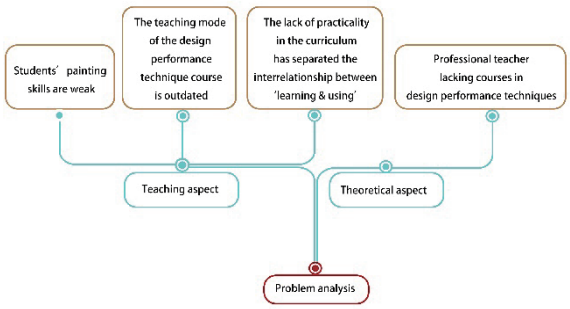

Fig. 3 The problems in the design performance technique course.

a. Students' painting skills are weak. At present, colleges and universities generally have been expanding their enrollment of students in engineering and art classes. The increase in enrollment will inevitably lead to the quality of students. In particular, the engineering students have no basis for painting, and some art students receive exam-oriented painting education. Although these students have the skills of painting, they have not developed a relatively mature artistic aesthetic. Besides, their knowledge theory is extremely limited.

b. The teaching mode of the design performance technique course is outdated. The multidisciplinary nature of the industrial design discipline determines that it is an innovative discipline, and must continue to innovate the teaching model to keep up with the pace of the times. However, there are still old conditions in the teaching mode and teaching cases of design and performance techniques in some universities in China. In terms of teaching mode, some colleges and universities follow the teaching model of the 1990s. Teachers lead students to imitate masterpieces mechanically. They fail to incorporate innovative design into the curriculum, which results in students' solid thinking and mechanical muscle memory, and thus can't meet the teaching objectives of the design performance technique curriculum. Under this teaching mode, although some students have mastered the design performance techniques, these performance techniques can no longer meet the needs of the society. They need to be improved as the society's requirements for design performance techniques gradually change. And long-term antiquated cases (e.g., "Fig. 4"), resulting in a lack of style of students, can not adapt to the needs of today's social development.

c. The lack of practicality in the curriculum has cut apart the interrelationship between "learning and using". Since professional education focuses on design theory education, teachers tend to neglect its connection with social practice and the follow-up professional courses. Therefore, the design performance technique is inconsistent with the attributes of the tool discipline, and it becomes a isolated task course. It can't lay the foundation for the design process and subsequent professional course learning. Students believe that they can succeed in completing the course as long as they can imitate excellent works. As a result, they ignore that the design performance technique exists as a carrier of divergent design thinking.

d. Being short of the teachers qualified for giving design performance techniques courses. The Design Performance Techniques course exists as a pre-design stage in the systematic work of industrial design, rather than being isolated. In the course of teaching this course, the teachers are required not only to master the skillful performance techniques but also to have a good control over the subsequent design stage in the industrial design process, so that students can use the design performance techniques well in the future professional design courses. . Some teachers do not have enough knowledge of design performance techniques and professional design, which makes it difficult for them to study the curriculum from a systematic perspective. In addition, many professional teachers lack the styling ability, and they stay in the theoretical stage of paper

talks and have little knowledge of relevant frontier information, which seriously affects the quality of teaching.

Fig. 4 The long-term antiquated cases.

Design performance technique curriculum reform goals

In view of the current changes in the demand for industrial design in society, the design and performance techniques curriculum should also be reformed to meet changing needs of the era. Facing the problems that arise in the current curriculum, three reform goals are proposed(e.g., "Fig. 5"):

a. Improve students' ability to design and express. Design expression ability is the core content of the design performance technique course and the premise basis for acquiring other skills.

b. Improve students' ability to design and communicate. Design communication skills are the use of design performance techniques as a tool to communicate with others. Design communication skills are a practical application for designing fast performance courses.

c. Improve students' practical application ability. Practical application ability refers to of design performance techniques in social practice, and it aims to put what the students have learnt into practice. Practical application skills are the ultimate goal of designing performance techniques courses.

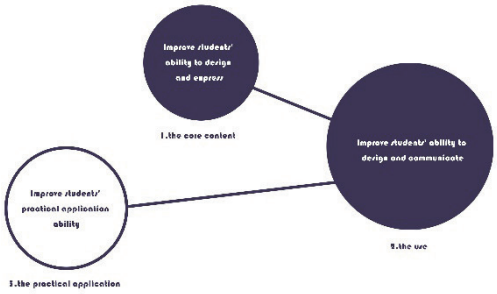

Fig. 5 Design performance technique curriculum reform goals.

Teaching Reform Strategy of Design Performance Technique Course

In response to the current problems and reform goals, the curriculum reform strategy is proposed from the following three aspects(e.g., "Fig. 6"):

A. Improvement and enhancement of teaching theory:

First of all, teaching reform should be carried out from theoretical knowledge. First, strengthen students' understanding and application of basic theory. Through theoretical explanation and basic training, students can improve their understanding of the light, darkness, perspective, sense of space, space and the use of hand-painted lines of design performance, and achieve proficiency. Second, we must improve students' aesthetic ability. Students should be led to visit various exhibitions and expositions, and appreciate excellent works, to improve their understanding of design frontiers and excellent works, and deepen their understanding and perception of design aesthetics. Third, focus on the design front. Incorporate excellent design performance maps and advanced design performance techniques in current industrial design into teaching cases, so that students can understand and digest them. Fourth, teachers should guide students to understand and integrate performance and three-dimensional structure. Students are encouraged to get rid of the limitations of the two-dimensional plane and transform the design expression technique into a three-dimensional space technique to achieve the combination between two-dimensional and three-dimensional.

B. The establishment of a teaching model of innovation and practice:

Second, teachers must reform in the teaching mode. First, create a teaching model of innovation and practice, enrich teaching methods, and change the rigid teaching model in the past. Teachers who design performance techniques courses should get rid of the traditional teaching mode and strive to establish a new teaching model based on the combination of design performance techniques and product design practices. Students are required to apply design expression skills to the design process, and allowed to experience the complete design process, and understand the role of design performance techniques in the design process to achieve the purpose of practicing what they're learnt, such as to propose relevant design projects to lead students to design practice, and to strengthen students' understanding and application of design performance techniques in practice. Second, the formation of "Different individuals have different characteristics". In the teaching process, teachers need to guide students to integrate self-understanding in the course study, encourage students to design different expression, and let each student form self-features, thus breaking the teaching status of "All students are in the same key under the influence of one teacher". At the same time, teachers should take students as the core in teaching, teach students in accordance with their aptitude, and "help each individual strengthen his advantages and make up for his shortcomings", give full play to each student's self-features and advantages, and must not instill the teacher's subjective thinking or limit students' innovative thinking. Third, change the original

curriculum evaluation and scoring system, and establish a teaching evaluation system based on the practical application and analysis and problem-solving ability. The hand-painted effect should not be used as the main evaluation criterion in the teaching. It is necessary to comprehensively consider the multi-factors, to evaluate student learning outcomes such as their product analysis ability, design expression ability, problem-solving ability, practice fit and innovation level and so on.

C. Strengthen the construction of the teaching staff:
Finally, improve the overall quality of teachers. At present, some teachers are out of touch with the society, and the teaching contents does not match the needs of the society. Therefore, in theory, the instructors who design the performance techniques course need to enhance their own abilities and insights, understand the design frontier, broaden their horizons, and better understand the design performance techniques and excellent works by participating in educational conferences on industrial design. If the teachers themselves fall into the old quagmire, how can they cultivate and bring out the talents of the new era. In terms of application, teachers should actively participate in social practice and improve their self-design performance. It is necessary for them to combine design performance with social practice, to combine technology and application, and to avoid empty talk.

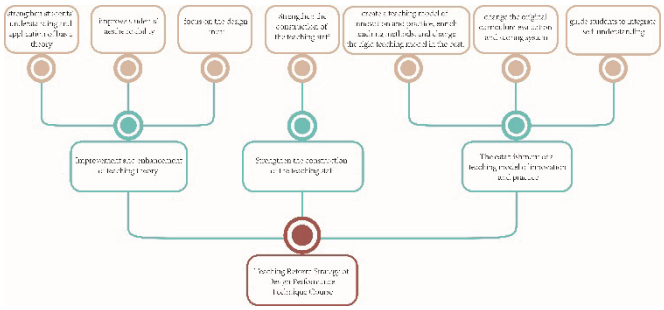

Fig. 6 Teaching Reform Strategy of Design Performance Technique Course.

Conclusion

As China's social needs are changing as our country is moving from a big manufacturer to a stong manufacturer. In order to adapt to the development of the times, the requirements for the industrial design industry are gradually increasing, which requires universities to export higher quality industrial design talents to the society. Therefore, the design performance technique course, which is the core foundation course of industrial design, cries for necessary construction and reform. We must clearly define the ultimate goal and core needs of the performance techniques, understand the teaching objectivity and meaning of the course to cultivate more innovative technical talent for the society.

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