Original Paper

Exploration and Practice in Graphic Design Course Teaching Based on CDIO

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Abstract

In view of the problems in the current graphic design course, this paper proposes a new teaching mode based on the CDIO teaching mode, which is driven by the design of the subject, with the studio as the main body and the combination of production and learning. Explore the development of initiative, innovative thinking, project operation ability and teamwork ability.

Keywords

CDIO, graphic design, teaching mode

1. Introduction

With the continuous development of computers and other technologies in recent years, we have ushered in a fast-developing "new media era". Diversified media brings a rich image language, and traditional image processing and graphic design can no longer be used. In order to meet the needs of the development of the times, colleges and universities as the main base for personnel training have successively opened the design and application courses with Photoshop as the core, but the graphic design course is significantly different from the teaching modes of other general courses. The graphic design course under the traditional teaching system in the face of acclimatization, the innovation of teaching mode has become a top priority for such curriculum reform.

2. Existing Problems with Graphic Design Course

2.1 This Is a More Difficult to Master Course, and Easily Frustrated

Graphic design course are generally for students of art majors. They are good at artistic accomplishment and emotional thinking, but Lack of computer operation ability. However, the

Photoshop is just a complex interface software. Many students open the software for the first time and faced with various menus and buttons, they will be in conflict. Once there are setbacks, they will even fear the course and lose the motivation to learn.

2.2 Graphic Design Course Is an Art Science with Many Complicated Knowledge Points

The course of graphic design is basically made up of the following parts. The first part of the tool introduction, the second part of the tool using techniques, the third part of the example operation. The first part is the main content of the course, and it is also the theoretical basis for mastering this software. However, it is difficult for a single tool to solve practical problems. Students are exposed to information-independent tools. This is why many students do not know what to do after learning. It also hit the enthusiasm of their learning. And the teaching process of learning and practicing also makes students learn passively in the framework of the rules, and it is difficult to think and innovate on their own.

2.3 Examples Are not Fresh in Class, and It Is Difficult to Apply What One Learns to Practice

Image processing is a discipline closely related to design, advertising, color and art. It relies heavily on the students' perceptual perception of art, which is even more important than the learning of the software itself. Popular design elements, stylish color matching, and practical business techniques can not only stimulate students' learning inspiration, but also enable them to fully understand and prepare for the development and needs of related industries, but the reality is the traditional teaching process. It is difficult to keep up with the rapid development of the industry and not to find practical business cases. This makes it difficult for students to quickly get started and gain experience in the process of doing related work in the future.

2.4 Lack of a Reasonable Evaluation Mechanism

The graphic design course is difficult to make a rigorous evaluation of the learning effect of students. This is also determined by the nature of the subject itself. The advantages and disadvantages of learning achievements are composed of various uncertain factors such as aesthetics, creativity and environment. Generally speaking, teachers are evaluated through experience, feelings, and students' usual performances. This will have a lot of limitations. In particular, it is difficult to correctly evaluate students with unique ideas and distinctive personalities. It is often more serious.

3. The Graphic Design Course Teaching Mode Based on CDIO

3.1 CDIO Education Model

The CDIO concept was originally conceived at the Massachusetts Institute of Technology in the late 1990s. One year later, MIT in collaboration with the other three universities founded the CDIO Initiative. The CDIO stresses engineering fundamentals set in the context of Conceiving, Designing, Implementing and Operating. The combination of active thinking, innovation and bold practice advocated by CDIO, the comprehensive and integrated educational concept is indeed worth learning for the graphic design course. Therefore, based on the CDIO education model, the graphic design course is

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proposed with the practical example is the main line, the studio as the learning subject, and the combination of class education and enterprise practice. Effectively stimulate students' initiative, cultivate students' innovative thinking and practical ability, ad solve the problem of lacking teamwork spirit and poor commercial promotion and coordination ability.

3.2 The Teaching Reform of Graphic Design Course Based on CDIO

3.2.1 The Curriculum Design Is the Main Line and Driving Force of the Course

As a characteristic course, the graphic design course has outstanding commercially and timeliness, the technology is becoming increasingly complex, at the same time curriculum requirements becoming personalized and change at a faster rate. The traditional content and examples in the class have fallen far behind the actual development needs, it will cause students to have a huge gap in class learning and social practice. In the society, many enterprises have the demand for related projects, especially SMEs. They need both unique projects and cost considerations. In view of such situation, this teaching mode selects suitable commercial projects as subject topics in the teaching process. In this way, the learning process of this course becomes the process of completing the topic, and the topic serves as the main line and important driving force of the course. Students understand the role of different functions of software in the process of conception, design, operation and completion, and realize the reconstruction of the curriculum knowledge system. The content of the fresh topic not only opens the eyes of the students, but also contact the latest business needs. It can also turn passive learning into active learning, stimulate the enthusiasm of learning, and get a sense of achievement. Enterprises can also get cheap resources and fresh ideas to form a win-win result.

3.2.2 Learning Small Groups in Studios

The image processing teaching mode based on CDIO does not simply adopt the traditional teaching mode of large class, but adds the concept of studio on this basis. On the basis of the normal classroom learning theory, students will form a studio group according to the different understandings of the subject content or differences in their interests. The development of the project will be as small groups. After the course is over, the project should be submitted in the studio as a unit, and a unified evaluation should be conducted. The team members should specify in the report the division of labor and the content of the completed work. The formation and evolution of the studio is a very interesting process. The individual leadership ability, expression and promotion ability of the students will be significantly improved, the teamwork ability between the members, and the communication ability between the teams will be significantly improved.

3.2.3 The Establishment of Relevant Course Groups and the Integration of Teacher Resources

Graphic design course is a very comprehensive subject, involving many fields, such as art, advertising, color, computer, web design, etc. However, in the actual teaching process, the related subjects of these courses are often distributed in different stages of teaching, it is difficult for students to integrate and refine them. This requires the teacher to intentionally provide relatively complete course content and resources, and form a curriculum community with graphic design course as the core, so that students

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with different professions can be more effective learn this course.

3.2.4 The Establishment of a Course Evaluation System

The assessment and evaluation of students is a summary of their learning achievements, indicating the direction of progress for students, and an important criterion for observing the quality of teaching. The traditional evaluation method is difficult to make a rigorous evaluation of the effect of student learning in a complex subjective and objective environment. For such a situation, the graphic design course should adopt a more effective two-way assessment method. One is Teacher assessment section. According to the students' performance in class and theory mastery, the teacher evaluates the students' performance in the studio, and forms the usual results and the design results of the project. The other one is enterprise assessment section. Relevant personnel of the enterprise, according to the market situation and the actual needs of the enterprise, focus on the innovation and maturity of the project works, and give the results. In the final course evaluation, the scores are composed of 30% of the usual grades and 70% of the grades of the subjects. 30% of the grades are given by the teachers, and the remaining 70% of the grades are given by the relevant companies. It can reflect the concept and connotation of this teaching model.

4. Result

The combination of CDIO and graphic design course has given students a new learning experience. The introduction of the project enables them to get in touch with the latest knowledge, which widens their horizons and stimulates the initiative of learning. In the process of project creation, design and implementation, the establishment of the studio cultivates students' team cooperation ability and stimulates team potential. In the process of communicating with enterprises and customers, they have also trained their promotion ability and communicative ability, which are helpful to students' learning courses.

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