Study on and Practice of "Project-based" Studio Tutorial System

Ran Han
Art and Design School
Shantou University
Shantou, China

Shaolin Xu
Journalism and Communication School
Shantou University
Shantou, China

Abstract—The "Project-based" studio tutorial system is a comprehensive professional training system that uses the design studio as platform and integrates curriculum, classroom and practice teaching. In the system, tutors provide supervising assistance, students are the main subjects of the learning, and the core of the system is the application of professional technologies. In the system, students are supposed to complete the design project under the guidance of tutors, during which process students' overall ability is improved. Art and Design School of Shantou University explored the tutorial model, operating system and management platform of "project-based" tutorial system in accordance with the disciplinary features to make sure the advantages of the tutorial system are brought to full play in teaching.

Keywords—studio tutorial system; design project; tutor; college student

I. RESEARCH BACKGROUND

The tutorial system for undergraduate students was first implemented in 2002 in Shantou University, which has basically taken over the class-based operating system and the tutorial effectiveness was subject to the tutors' passion, responsibility and diligence to a large extent. In view of the problems associated with the implementation of the tutorial system and in accordance with the disciplinary requirements, the key to achieve the proposed value of the tutorial system is to motivate tutors to provide varied professional supervision to students and help solve the challenges faced by the students. The objective of design major is to cultivate creative designers, develop students' innovative spirit and unique design thinking. The objective of this research and practice is to identify approaches in accordance with the characteristics of design major to make full use of the tutorial system in teaching.

On the basis of "the merging of heart and hand" teaching philosophy, Art and Design School of Shantou University started the execution of a "profession + project + studio" combined talent training model in order to improve students' hands-on ability and innovative capacity. Six departments have established their own studios, including the visual communication design studio, interior design studio, landscape design studio, product design studio, moving image design studio and interactive design studio. Multi-media teaching facilities, working tables, and computers have been provided to meet the demands of different departments. The school explored the tutorial model, operating system and management platform of the "project-based" tutorial system in accordance with the disciplinary features. The "project-based" tutorial studio system is a comprehensive professional training system that uses the design studio as platform and integrates curriculum, classroom and practice teaching. In this system, tutors provide supervising assistance, students are the main subjects of the learning, and the core of the system is the application of professional technologies. In this system, students are supposed to complete the project design under the guidance of tutors, during which process students' overall ability is improved.

II. METHOD AND PRACTICE

A. The Role and Responsibility of Studio Tutors

1) Identifying the role of tutors: In the "project-based" tutorial system, tutors are required to re-identify their roles during the tutorial process. They not only pass on knowledge and experience, develop new projects, but also supervise students' learning plans, career plans, work ethics and mental health. Tutors act as students' guide, organizer, advisor, coordinator and evaluator during students' entire learning process and have direct influence on the goal, process and outcome of the project implementation.

During the teaching process, both tutors and students take part in the entire project program, including the preliminary investigation, plan-making, implementation management and outcome evaluation. This will not only improve students' understanding about the flow of the design project, improve students' ability in solving design-related problems, but also enhance their competency in independently undertaking design projects. This tutorial model also helps to improve tutor's professional skill and promote teaching and learning at the same time.

2) Recruiting tutors: Tutors will be assigned on the two-way voluntary basis between tutors and students to make sure each student is assigned with a tutor. With regard to teaching ethics, tutors must love teaching, possess strong work ethics, and care for the students; they must possess innovative teaching philosophy. With regard to professional skill, tutors must have outstanding professional knowledge and design ability; they must also have innovative spirit, inter-

disciplinary and team work skill. They must be familiar with the teaching objectives and the relationship between each teaching process. With regard to practical application, tutors must have experience and competency in undertaking social projects, they must have certain scientific research projects and maintain close cooperation with enterprises and organizations.

3) Tutors' responsibilities: "Project-based" studio tutors will mainly focus on students' professional learning, personal growth and career development, including the following.

Tutors shall supervise students' learning. On the basis of understanding students' learning level, their specialties and interests, tutors shall guide students in making a career development plan and selecting appropriate courses and training related to professional knowledge and skill; they shall also help students set up their short-term and long-term goals and make a study plan according to their career development plan, and help them achieve their plans and goals one after another.

Tutors shall provide individual instructions and collective instructions to students according to the project progress. Tutor shall have at least one interview or coaching to the students each week. The instructions may be given in the form of classroom teaching, project instruction, panel discussion, technical communication, and individual coaching.

Tutors shall guide students to elect their courses, coordinate with other lecturers in supervising students' course learning, and assign students with appropriate research projects. Tutors shall offer effective instruction for students' learning and research methods, so as to foster students' innovative and hands-on practical ability and improve their independent learning ability.

Tutors shall encourage and guide students to participate all kinds of design competitions and exhibitions.

B. "Project-Based" Studio Tutorial Model

1) Merging the real design project: Tutors, by working with various industries and enterprises, introduce real design projects in teaching and help students complete learning-related project programs. The real design project-based teaching is detailed as follows: First, undertaking the project: tutors help make the project progress plan and teaching plans; Second, running the project: students are grouped to design, tutors shall analyze and comment on the designs and give suggestions when necessary; tutors select 3 to 5 better designs for customers; students make changes and adjustments to the design according to customers' feedback, and complete the final project; Third, production: after the design is completed, enter the production stage according to the plan and carry on with the post production; Fourth, analyzing the feedback: students' designs are put into production and transformed into project outcomes under the instructions of the tutors; study the market feedback afterwards.

Besides tutors from the school, corporate design directors or designers may also be invited as part-time tutors to take part in the real design projects and supervise the entire design project. When the corporate design project is adopted as students' assignment, the final evaluation results shall be based on the criteria given by tutors, the corporate and the market. On the one hand it may effectively enhance the integration between the tutors and the society; on the other hand, it helps to improve students' hands-on practical ability and avoid the problem of "high ambition but low skill". This kind of tutorial model focuses on the applicability of the knowledge. Students are divided into a few teams according to different task requirements, students' knowledge application and innovation ability, their team spirit and professional quality are enhanced during the project process. The project shall also help students to understand market demand better and stimulate their interest in learning.

2) Merging the simulated design project: According to the teaching requirements, tutors come up with a forward-looking design topic for students and provide students a virtual environment for students' simulated real design activities. Students may freely explore into diversified design expressions, fully experience the entire design process, and understand the connections of each design stage, which helps to meet with the teaching requirements without undertaking any economic risk. The teaching content related to the simulated design project may be carried out in a module-based or case-based form. For module-based teaching, the knowledge and skills that students must possess are divided into various modules and taught by focusing on one thematic topic and design skill, achieving highly effective teaching pertinence. For case-based teaching, students try to master fundamental knowledge and skill, and improve their creativity and hands-on ability by studying the cases and following tutors' instruction.

3) Merging professional design competitions: Tutors introduce domestic and international professional design competitions into the teaching, taking the proposition for the design competition as the requirements of the course assignment; encourage students to participate in specialty-related positive competition by taking students to take part in professional competitions to improve their understanding about design propositions and improve their design competence. This will also help to evaluate tutors' teaching effectiveness and students' learning outcome. However, some professional design competitions require team participation and team members need to be responsible for the scrip, filming, execution and post-processing etc. By organizing the design team, students' teamwork awareness is enhanced, which is in line with the operating model of design companies. Extracurricular competition-based tutoring is a useful supplement to classroom teaching as tutors may use their after-class time and even break time to tutor students. And the fact is that lots of students' interest in design and competitiveness in job-hunting have increased after entering and winning prizes in the design competition.

4) Graduation project: Graduation design is the last teaching process for design students. The purpose of graduation design is to promote students' ability to make use

of the knowledge and skills they have learned by completing a design project systematically. Tutors assist students with topic selection, design survey and plan etc. Some tutors also invite junior students to the team in the preliminary stage of the graduation design, which significantly increases students' enthusiasm for learning. Some tutors combine some contents of their research projects with students' graduation design, which is an effective approach to improve students' research and innovation ability.

C. The Operation of the "Project-Based" Studio Tutorial System

1) Organizational form: Studio tutors are subject to the leadership of the college. Each studio is comprised of one director and about three tutors. The studio director is responsible for the execution of each project and organizing teaching activities (such as making teaching plan for the project, implementing the course content, implementation of the teaching activities and inspections, and correspondence with enterprises). Studio tutors shall be responsible for the execution of specific teaching tasks and assist with the internal management of the studio (including the devices, consumables and data management). Tutors shall not only complete their course teaching but also make general planning and provide supervision for students' projects. Students may select one responsible and well-trained student as team leader to take charge of the studio and team coordination.

2) Procedure monitoring: Studio tutors may provide guidance in the form of centralized teaching, after-class discussion or Internet-based communication. During the teaching process, teaching must be provided in strict accordance with the studio teaching objectives and teaching plan. At the end of the project, students must summarize their learning experience and propose ways for improvement. The electronic files related to their project must be submitted to the teaching administration office for documentation. Tutors must give open comments on the design process and quality of students' works. Tutors shall also put the exhibition works of courses and projects on file and make teaching summaries to review the teaching quality.

3) Evaluation on students' performance and motivation: Performance evaluation is a measure, instead of a purpose. The criterion for evaluating a project is not "right" or "wrong" but "good" or "better". In project teaching, students' self-evaluation, peer assessment, tutor's assessment, industrial specialists' evaluation and societal evaluation are used. Tutors analyze the problems identified during students' project design process, particularly the commonly seen and difficult problems, to improve students' analytical and problem solving ability. On the basis of students' self-evaluation, tutors evaluate the project in terms of the design concept, design planning, implementation process, specification and standard, workload and job attitude, project outcome etc., and provide recommendations for improvement. Project evaluation is usually carried out in the form of debates and discussions. Apart from self-evaluation and tutor's evaluation, team-based project also require evaluation from team members. Corporate comment and market response is fully considered in evaluating students' performance in practical projects.

Students' participation in curricular or extracurricular design projects, professional design competitions or exhibitions and their award-winning experiences are considered as key points for granting scholarships. The school has established a system for sponsoring students to take part in professional design competitions or exhibitions. Upon students' application, the school reimburses some of the enrollment fee and postage costs.

4) Tutors' evaluation and incentive: Tutors will be assessed once each year according to their working records, teaching hours, supervisory performance and students' assessment, and they will receive certain rewards or punishments according to the evaluation results. Rewards will be given according to the evaluation system of the school when tutors are able to meet with the project training objectives and help students to win prizes in provincial or higher level professional competitions.

III. FEATURES OF THE "PROJECT-BASED" STUDIO TUTORIAL SYSTEM

A. Pertinence of the Tutorial Content

Studio is not only a classroom but also a place for carrying out design projects. The advantage of a studio is that it enhances the close integration of theories and practices, reinforces the learning and application of design knowledge, and helps improve students' overall quality. By incorporating the up-to-date market and industrial information in the teaching, it is able to broaden students' vision, maintain the vitality of the teaching and learning process, and constitute a good circulatory teaching information network.

B. Diversity of the Roles of Tutors and Students

In addition to the teaching role, tutors also take part in the project management and provide guidance for students' learning as a designer of a virtual entity or design director of a design company. The studio tutorial system imposes higher requirements on tutors as they shall not only demonstrate outstanding professional skill but also possess comprehensive knowledge and design experience. With project teaching, tutors' sense of responsibility and professional proficiency are upgraded. For students, they are not purely and simply "students" any more but more undertaking a designer's role. By participating in the design project, students take more initiatives, and their learning efficiency and sense of responsibility are also upgraded.

C. Active Interaction during the Tutorial Process

During the tutorial process, tutors and students have more communication and discussion opportunities. The discussions held around the table also increase the interaction between tutors and students. The tutorial usually adopts the form of inspirations, analyses, discussions and research etc.; it focuses

on the disciplinary integration and the combination of learning, research, competition and exhibition in order to improve students' innovative thinking and design competency.

D. Comprehensive Tutorial Effectiveness

Project-based studio teaching helps students to make use of the professional knowledge they have learned to solve problems during the design project process. It avoids separating the knowledge of different courses, it strengthens students' understanding about the market, and it improves students' professional qualities. This society needs highly qualified and competent talents with interdisciplinary knowledge. By introducing practical projects in the teaching and encouraging students to participate in all kinds of design competitions, students may gradually learn to complete the design project independently and make good use of the knowledge they have learned.

E. Diversified Evaluation System

Diversified evaluation system mainly includes: students' self-evaluation, tutor's evaluation, industry specialists' evaluation, and societal evaluation. Evaluation is conducted in terms of working attitude, workload, project report and project outcome. Traditional classroom teaching usually focuses on the assignment and ignores the entire learning process. Evaluation subjected to tutor's mark only is insufficient. Studio teaching emphasizes students' design thinking, design process and hands-on practical ability. Tutors are able to identify students' strengths and improve their problem-solving ability. On the basis of the project implementation, tutors' assessment is no longer derived from the outcome only. As the project is originated from corporations and professional competitions, and market factors are also incorporated in the evaluation, the evaluation results are more impartial and fairer.

IV. CONCLUSION

"Project-based" studio tutorial system strengthens students' project thinking. It allows students to integrate their professional learning with design projects. To fulfill the project requirements, students are asked to make use of all the knowledge and skill they have learned and seek any innovations. During this process, students are able to break away from their personal interest and fixed mindset. By taking initiatives to examine their design thinking and expressions to meet with the project requirements, students learn to identify approaches to find balance between their individual benefits and the project needs.

The implementation of "project-based" studio tutorial system still faces challenges and needs further discussion and improvement. The challenges include: design topics from design competitions in the research occupies a large proportion whereas the proportion of practical projects from corporations was still low; tutors need more motivations and more approaches to establish "study-research-production" cooperation with enterprises in order to incorporate more corporate projects into the curriculum; tutors' comments on performance evaluation and reward criteria need to be obtained and respected; interdisciplinary difference needs to be considered in order to come up with a more appropriate and more effective tutor evaluation and motivation system.

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